

Sociology for sustainability

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Abstract

Sociology for sustainability is sociology that studies the social facts, organisational phenomena and changes of society, taking into account the conditions for their viability over time. It places a specific emphasis on the relationship between these social dimensions and the natural environment, as well as on the stability and introduction of novelty into the internal order of society. It is also concerned with interactions between these two types of restrictions. Sociology for sustainability is also known as “ecological sociology” and partially overlaps with environmental sociology. Its origins in the history of sociological thought date back to the 18th century and while its expressions and developments are common to all phases of industrial civilisation they have become especially prominent in the last three decades of the 20th century and the start of the 21st, a period that coincides with the formation of the ecologist movement and a growing social consciousness of the existence and severity of the ecological crisis. Its fundamental concern is whether there are natural limits to development and whether the effects of these limits can be avoided or overcome through techno-scientific innovations or adequate modifications to economic, political and sociocultural systems. This provides a means for classifying the various different approaches. Those such as ecological modernisation, sustainable development and the circular economy are characterised by a faith in technological innovation, together with minor reforms to existing institutions, in order to maintain development. The belief that the ecological crisis can only be overcome by combining scientific development and the abolition of neoliberal capitalism is characteristic of the various ecosocialist and eco-anarchist movements and certain ecofeminist ideas. The hope of a harmonious reintegration into nature to end the conflict between nature and society is shared by various philosophies that erroneously define themselves as ecocentric and is also expressed in certain versions of ecofeminism. Finally, the insistence that the finite nature of the planet creates dilemmas that cannot be resolved by technological development or political and economic changes is visible in the analytic schemas of bioeconomics and degrowth.

Let us begin with some basic definitions. Above all, sustainability refers to viability over time: a system is said to be sustainable if and so long as it meets the conditions to last.

A system is also said to be open if it has a permeable border and allows energy and materials to be exchanged with its ecosystem or environment. The two conditions for the sustainability of any open system are the same. To last, it must first be able to find enough useful energy, ordered materials and sites for the waste produced by its activity in its environment. This is called environmental sustainability. Secondly, it must also be able to preserve its internal organisation in an ordered state far from equilibrium. This is called internal sustainability. Clearly, societies are open systems and, as such, can only last while they meet the conditions of the two types of sustainability described above (Garcia 2004: 18–27).

In the specific case of human societies, internal sustainability can also be referred to as “social sustainability”. The concept of social sustainability is often broken down into three dimensions: economic, social and institutional. This distinction is meaningful since a specific form of social organisation cannot last if its economy is unable to provide the population with essential goods and services, if its cohesion shatters under extreme conditions of inequality or injustice, or if its institutions are excessively corrupt or inefficient. While this tripartite schema may not be essential to our definition, it is, however, essential to understand from the outset that the requirements of the two types of sustainability I have just outlined condition each other. If society takes more from nature than it can provide, its stability and capacity for change without disorganisation are jeopardised. If it is organised and functions such that it exerts too much pressure on the ecosystem that supports it, it will tend to last for less time than it would under other circumstances.

Here, it is possible to introduce a basic notion of *sociology for sustainability*. Sociology for sustainability studies societies taking into account the conditions—both environmental and internal—for their viability over time, in addition to the interactions between them. In other words, its object of study is not society in isolation but the combination of society and environment. As such, it can also be described as a *socioecology* or *ecological sociology*. Since societies are open systems, any social theory that is not socioecological contains a fundamental theoretical error, that of assuming societies to be self-sufficient and that their organisation and dynamics are not fundamentally affected by natural conditions. (This error is most frequently expressed as the faith that natural restrictions can always be neutralised and overcome by internal processes of development and reorganisation. As I shall show in the rest of this article: the fundamental choices can be analysed in these terms).

It should be noted from the outset that the concept of sustainability tends to give the illusion that the relationship between society and nature can be controlled and thus governed and avoiding the pitfalls of this illusion is in fact one of the greatest challenges for the correct theoretical use of the concept. However, the relationship can be neither controlled nor governed (or at least any control or governance is

highly partial and limited), since it is radically indeterministic. Nature imposes limits on organisation and social change and the belief that these limits can be consciously and voluntarily managed is simply incorrect. All aspects of sustainability are related to the limits and indeterminism, of *both nature and society*. Malthus clearly perceived this when he wrote: “a careful distinction should be made, between an unlimited progress, and a progress where the limit is merely undefined.” (1798: 167) It is also captured by Georgescu-Roegen in the following passage: “anyone who believes that he can draw a blueprint for the ecological salvation of the human species does not understand the nature of evolution, or even of history—which is that of a permanent struggle in continuously novel forms, not that of a predictable, controllable physico-chemical process, such as boiling an egg or launching a rocket to the moon” (1975: 369).

Sociology for sustainability and environmental sociology

When we talk about sociology for sustainability and environmental sociology, are we talking about the same thing? I do not believe we are, despite many overlapping areas between the two.

Strictly speaking, the term “sociology for sustainability” refers to the study of processes of organisation and social change taking into account the restrictions derived from the relationship between society and nature. Environmental sociology does not exclude this but also includes aspects such as the analysis of public opinion on ecological problems, social movements for and against environmental protection, social conflicts related to access to natural resources or waste management, and the management of protected spaces. In short, sociology for sustainability is defined primarily by its approach, whereas environmental sociology is defined primarily by the issues it deals with.

Nonetheless, in my opinion this terminological distinction is not particularly relevant. I do, however, believe it is important to correctly contextualise the origins—both historic and geographic—of the concern for natural limits in the social sciences.

A standard account, widely reproduced in specialist academic spheres, reduces the entire problem to the current form of environmental sociology and traces its roots back to the United States of America in the 1970s. One of the standard texts is an article from the period presenting the manifestations of a sociology sensitive to ecologist arguments as symptoms of the emergence of a new environmental paradigm (Catton and Dunlap 1978). Catton’s work throughout the 1980s was fundamental to developing the concepts of cultural carrying capacity and overshoot as sociological categories. Moreover, Dunlap has made substantial and highly original contributions to the study of the social perception of environmental problems (Dunlap and Van Liere 1978) and social reactions to the threat of climate change (Dunlap and Brulle 2015). However, in my opinion, the history of the ecological approach to sociology dates back to at least the end of the 18th century and the debates on the limits of the perfection of humanity during the times of the French

Revolution, debates that, albeit perhaps in the background, have continued without interruption to this day. The vigorous re-emergence of the ecological problem in the social sciences of the 1970s was not only confined to North America but also occurred in Europe and other parts of the world. I shall return to the historical dimension in greater detail later. For now though, I would simply like to emphasise my belief that an introduction to sociology for sustainability (or environmental sociology) would be highly partial and incomplete if it failed to summarise some of the significant contributions during these years from outside the USA (contributions such as Illich 2004; Gorz 1978; D'Eaubonne 1978; Harich 1978; Touraine *et al.* 1980; Goldsmith 1973; Dumont 1975). There is also a considerable body of work produced by Spanish sociologists during this period, which has exerted varying degrees of influence (Gaviria 1976; Marqués 1978; Pérez-Agote 1979; Maestre Alfonso 1978; Costa Morata 1976). Just as it is impossible to account for the explosion of interest in the relationship between sociology and ecology in the second half of the 20th century without mentioning the contributions of Catton and Dunlap (as well as Schnaiberg and other North American scholars), omitting the many other contributions from other geographic contexts would simply be inaccurate and incomplete.

Sustainability in the history of sociological thought

The first edition of Malthus' *An Essay on the Principle of Population* (1798) developed the idea that the environment imposes limits and conditions on development in dialogue with the progressivist enthusiasm of Condorcet (1794) and Godwin (1793). Although the language of the time may have differed, the idea was the same: for "environment" and "sustainability", read "nature" and the relationship between "population and available land". Likewise, the terms "progress" and the "perfection of humanity" are analogous to the connotations of the contemporary sociological terms of "development" and "modernisation". Semantic nuances aside, at its heart it was a debate about the existence and effects of natural limits to development, one that must be acknowledged as part of the current search for a sociology for sustainability (Avery 1997; Garcia 2016).

The mutual influences and conditioning factors of population, means of subsistence and prosperity were the focus of vigorous debate throughout the 18th century, although the aforementioned formulations toward the end of the century, spurred on by the impact of the French Revolution, reached unprecedented levels of clarity, accuracy and empirical argument. Three core aspects of sociology for sustainability were defined in terms that largely remain unchanged. First and foremost, there is the question of whether the root of all social problems lies in the institutions created by human beings or whether, in contrast, there are natural limits that condition the possibilities of social organisation and that cannot be overcome. Secondly, there is the question of whether and to what extent an egalitarian distribution could satisfy all needs,

regardless of the number of individuals, or whether, in contrast, the finite nature of the planet means demand (both population and consumption) must be kept below a certain level. Finally, there is the question of to what extent fair political organisation can facilitate processes that generate wealth and increase knowledge such that they are always ahead of any scarcity derived from increases in population and consumption.

Toward the end of his great manifesto of progress, in which he argued that there would be no end to human perfection while the Sun continued to shine on the Earth, Condorcet reflected on the possibility that the finite nature of the planet would one day act as a brake on the expansion and advance of humanity. Specifically, he asked whether we would reach a point at which “the number of inhabitants in the universe at length exceeding the means of existence, there will not result a continuous decay of happiness and population, and a progress towards barbarism, or at least a sort of oscillation between good and evil” (1794: 357). This oscillation, he added, would mark a limit at which point no further improvement in the human species would be possible. After posing the question, he rejected this ominous threat with three arguments. Firstly, such a possibility was extremely far off, since most of the planet was still awaiting the arrival of civilisation. Secondly, advances in knowledge would increase the means of subsistence and satisfaction using less land and labour and consuming fewer natural resources. Finally, advances in science and technology would be accompanied by progress in the spheres of culture and rationality, which would allow conscious and voluntary self-containment if necessary (for example by controlling birth rates). After setting out his three arguments with admirable clarity, Condorcet concludes that “there might then be a limit to the possible mass of provision, without that premature destruction, so contrary to nature and to social prosperity, of a portion of the beings who may have received life” (1794: 358-9).¹ Condorcet’s three arguments (the large and empty planet, eco-efficiency and post-materialism) have been repeatedly reformulated by those who believe the threat of the natural limits to development can be kept at bay. In fact, they are three of the central tenets of contemporary discourses that argue it is possible for development to be made sustainable.

Godwin, a contemporary of Condorcet, formulated his own version of faith in unlimited progress in 1793, arguing that it would only be possible after the abolition of the major social institutions: private property, government, marriage and associations. In a polemic with his two contemporaries, Malthus responded that the picture they had painted was idealistic and one that everyone would follow if it were viable. Unfortunately, however, this was not the case. Regarding Godwin’s argument that political regulations and the established forms of property are the source of all ills and the root cause of all the crimes that degrade humanity, Malthus responded that, if this was the case, we might reasonably expect the

¹ English wording reproduced from *Outlines of an Historical View of the Progress of the Human Mind*, London, J. Johnson, 1795, pp. 345, 347.

eradication of all social ills, since what human beings build, they can also demolish (1798: 173-209) . He rebutted these claims with an argument based on naturalist scepticism, noting that the necessity imposed by the laws of nature imposes costs that resist even the most stubborn volition (1798: 7-17). It was this polemic that led him to his thesis that population would tend to grow beyond the available resources, creating an irreconcilable tension between society and nature. (It should also be noted that it was precisely this statement, crucial for a sociology of sustainability, that earned Malthus' the praise of Darwin and made him despised among social philosophers.)

Extending the founding episode summarised in the paragraphs above, the time of sociology for sustainability is coextensive with that of modern scientific sociology. However, it has remained a minor branch, its authors sometimes ignored or deprived of the recognition they deserve by the canon of “sociological theory” and sometimes featuring as apparently secondary aspects to the work of some of its most renowned authors. Nonetheless, it is clear that sociology in terms of the analysis of sustainability *is not a recent phenomenon*. Albeit with differing and even highly contradictory nuances, its history goes much further back in time, as far back as the reflections by Condorcet mentioned above on overcoming the obstacles to progress derived from the finite nature of the Earth and the successive approaches and confrontations between Malthus and Godwin (Garcia 2018a). It could also include John Stuart Mill's praise of a steady-state economy (1888: 452–455), the construction of an anthropology of the triumph of work and science over the necessity of the natural world by Marx and Engels (1978), as well as Proudhon (1846: 423–424) and Kropotkin (1887; 1892), and the conviction—so deeply ingrained in the functionalist sociology of modernisation—of economic theories of development and many other modern approaches in the social sciences that the combination of technological innovation and free markets provides insurance against scarcity (Davies 1951; Beckerman 1972; Hawley 1986: 112). To this list of examples, we might also add the attempt by a young Kautsky (1884) to reconcile Marx and Malthus and the theorisations arising from confluences between neo-Malthusianism, proto-feminism and the labour movement (Place 1822; Huot 1909; Lorenzo 1905; Masjuan 2000).

Yet this list is far from exhaustive. An account of all the significant episodes, no matter how brief, would run to many, many pages and is beyond the scope of this article. Instead, I shall limit myself to summarising my thesis on the matter. Sociology for sustainability concerns itself with the organisation and change of society taking into account natural restrictions, both in terms of analysing the viability over time of the internal features of society and its dependence on the ecosystem. Some versions argue that these restrictions are obstacles that can be overcome, remaining albeit reluctantly within the productivist paradigm. Others describe them as insurmountable limits, arguing instead that the only solution is some form of creative and anticipatory adaptation, under the criterion of the ecological paradigm. However, I define sociology for sustainability as sociology that admits there are natural and not just social restrictions,

regardless of the scope attributed to them. It is sociology that formulates the problem of the relationship between society and nature and does not merely account for it in one way or another. Some of its key themes have been clearly defined since the end of the 18th century: whether the institutions created by human beings are the root of all social problems or, in contrast, at least some of these problems stem from human existence being part of the system of nature; to what extent material abundance can be stimulated by appropriate choices—fairer, more egalitarian or simply more efficient—in terms of institutions; and the relationship between material scarcity and social inequality, exploring if and to what extent a fair distribution of access to natural resources can ward off scarcity.

Synthesising all these ideas is challenging, since their development follows a largely discontinuous trajectory, marked by sometimes unclear and almost always conflicting episodes of amnesia and recovery. It should also be noted that they have circulated—and continue to do so—on the margins of mainstream sociological thought. Nonetheless, whether we use the term ecological sociology, environmental sociology or sociology for sustainability, to argue its origins lie around 40 years ago, around the time of the United Nations Conference on the Human Environment in Stockholm in 1972, the first oil crisis and the movements against nuclear energy, is clearly unsatisfactory. Such an account is incomplete because it omits highly significant parts. Moreover, it is also a distortion, since it masks the fact that the roots of the current sociology of ecological problems penetrate deep into secular debates in the discipline.

An analytical framework for the current alternative of sociology for sustainability

Accepting the idea that all social problems are caused by institutions has two significant implications. The first is that nature does not cause problems: the environment is, at least in practice, sociologically irrelevant. The second is that since humans create problems we must also be able to create their solutions, technology and politics being the most specifically human means for doing so.

In one of the most comprehensive sociological studies on the idea of progress, Nisbet argues that “one of the prime assumptions of the modern idea of progress was the invariability of nature, a nature that would be the same tomorrow as it is today and was yesterday”, before adding that “on such foundation of confidence in a nature that has and always will be the same, the moderns could joyfully argue that with such invariability present had to be superior to past simply by virtue of the increase in knowledge” (1981: 466).² If nature is a constant, human actions cannot change it. Above all, however, it can play no part in explaining social changes.

The marginal position of ecological sociology can be explained by the fact that all sociological

² English wording according to the Routledge edition of Nisbet’s book, 2017.

doctrines formulated in the context of industrial civilisation share the thesis that all the collective problems of human beings are caused by technological limitations or organisational imbalances. As such, they maintain that any social problem, regardless of its nature, can be remedied either by an invention or institutional reform (or a revolution, which, in this case, is the same thing). This implies that the idea of nature being able to impose limits that cannot be overcome by techno-scientific development or political action is simply inconceivable.

However, it is much harder to uphold this dominant sociological paradigm in the current context of a full planet than when it was seen to be half empty. For anyone who takes seriously the data on the atmospheric concentration of greenhouse gases, the manipulation of the genetic code and the transformation of human activity into a geological force, it is much harder to repeat the mantra that nature is immutable. Moreover, anyone who reflects on the potential social impacts of climate change, the decline in Energy Returned On Energy Invested (EROI) in the processes that produce usable energy and the realisation that there will soon only be 0.15 hectares of arable land per person, would struggle to repeat Bell's claim that the "game against nature" was only relevant to preindustrial societies (1976: 534-535).

Françoise D'Eaubonne, the founder of ecofeminism, called for a move away from the habit of reacting to problems—especially those caused by the destruction of the planet and patriarchal domination—by praying to Saint Industry or Saint Revolution (D'Eaubonne 2018[1978], 150). So deeply ingrained is this pious habit that it dominates even the most widespread approaches of sociology for sustainability. Such approaches can be classified depending on their emphasis.

Ecological modernisation, for example, argues that the deterioration of the environment is a real problem but one that can nonetheless be overcome by a combination of substantial technological innovation and minor adjustments to the political and economic institutions of liberal capitalism. Similarly, political economy of the environment, including under its most popular guise of ecosocialism, accepts that environmental degradation is a problem. It also holds that this problem has a solution but only after the abolition of capitalism has created the conditions for the unfettered application of the relevant knowledge to reduce the pressure on natural resources. Ideas describing themselves as ecocentric postulate a state of harmony as a result of the "reintegration into nature" made possible by a cultural mutation inspired by suitable technology and agile or low-impact institutions. All these different theorisations share the ghost of the idea that the tension between society and nature cannot be overcome and resists management, whether technical or political. This leads us back to Malthus: is this not the same ghost that Malthus introduced into the social sciences? As the saying goes: *plus ça change, plus c'est la même chose*.

Ecological modernisation and technology

Modernisation has created the ecological crisis but the solution lies in more modernisation. This is the basic argument of an entire family of well-established approaches. In the sociological literature, they are largely grouped under the label of “ecological modernisation” (Simonis 1989; Jänicke *et al.* 1989; Hajer 1995; Huber 2000; Spaargaren, Mol and Buttel 2000; Mol 2001). Depending on the context, however, they are also referred to as sustainable development, the green economy, the circular economy, the ecological transition and the energy transition. While the proponents of any of these options will emphasise their different nuances—imagined or real—the difference is largely semantic, since the terms refer to the same ideas and the same fantasies.

For the sociology of ecological modernisation, the development of industrial society results in a number of institutional adaptations and modifications that act as a counterweight to the excesses of economic progress, leading to a new equilibrium. Scrutiny of the environmental policies introduced by governments, the quest for efficiency in the use of energy and materials by companies (above all in large transnational corporations), the dissemination of post-materialist values and “green consumption” practices among the public, and the constitution of committees and the definition of environmental programmes by social and political organisations are just some of the specific expressions of the adjustments involved in the process of modernisation (Garcia 2004: 201–203). One of its fundamental arguments is that a path of technological innovation inspired by eco-efficiency could increase the productivity of resources, making it possible to obtain higher value flows from significantly smaller resource flows than at present (von Weizsäcker *et al.* 1997). (We see over and over again that Condorcet’s arguments have a long life!)

In terms of sociology *for* sustainability, ecological modernisation argues that the social dynamic itself points toward the planetary generalisation of a system that can maintain the features and institutions of modernity but in a way that is materially much lighter. In other words, development can be made sustainable without major changes in the economic and political structures that have driven it so far. The medicine for the ills of modernisation—at least according to the proponents of this point of view—is nothing less than *more* modernisation (provided it is administered *correctly*).

Even though the equivalence is not often explicitly stated, in the literature of ecological modernisation, modernity often bears more than a passing resemblance to liberal capitalism. However, I do not believe that the lack of emphasis on this similarity is an attempt to conceal it. Instead, I believe the explanation lies in the centrality of technological innovation, perceived as the most critical part of the politico-economic structure (Asafu-Adjaye *et al.* 2015). The cornerstone of ecological modernisation, the preferred doctrine of those who worship Saint Industry, is tecnolatrý. Generally speaking, this is common to its many guises, from geo-engineering through to the conversion to one-hundred-percent renewable energy.

As part of my practice as a sociologist, I have been organising focus groups on environmental

conflicts for over 30 years. There is a constant throughout this period. At a certain point, the group becomes concentrated on a knot of anxiety: *we're destroying the planet*, and so forth. However, no sooner has the spectre of the apocalypse appeared than it is vanquished by one of the participants who utters the magic words: *they'll invent something!* From the alchemist Plattes (1974[1639]) through to the hypothesis of Boserup (1965), the idea that pressure on resources stimulates innovation has enjoyed long-lasting success (and not only in intellectual circles). However, historic evidence of reactions to environmental stress by societies in the past is more ambiguous. The correct answer to whether ecological crises stimulate technological remedies appears to be it depends: sometimes yes, sometimes no (Diamond 2005).

Ecological modernisation is not only the most widespread doctrine in academic, economic and political spheres, it is also the most common in public opinion. In Spain, we have all heard the argument that to really do something for the environment, we would first have to be much wealthier, like the Germans... Pure post-materialism... In the collective imaginary, the energy transition is summarised by the fantasy that one day petrol cars will be replaced by electric ones and everything else will stay the same. Ecological modernisation is the academic version of the environmentalist consensus that has been consolidated since the 1970s: *So, the environment is good! Then surely those with the power and know-how (the government and experts) will also guarantee more access to a more "natural" environment!* In other words, they will reconcile development and sustainability.

The main pitfalls of ecological modernisation when it comes to sociology for sustainability are shown by empirical evidence. Over three decades after embarking on the aforementioned adjustments and the Rio Summit in 1992, assessments of material flows show the promised dematerialisation is nowhere to be seen. The much-vaunted agility of the information society comes face-to-face with the overwhelming evidence of the high environmental costs of information technology. Moreover, fossil fuels made up the same proportion of an increasing total energy consumption in 2011 as they did in 1985. Finally, the Kuznets environmental curves have only been verified for a few local contaminants and even aggressions against the ozone layer have recommenced (Montzka *et al.* 2018)! Faced with the growing body of evidence to the contrary, ecological modernisation often responds by asking us to be patient, explaining that these things take time and insisting that modern society will reach the path to sustainability. This, however, remains to be seen.

The environmental dimension as a corollary of political economy

Capitalist modernisation has created the ecological crisis whose solution is *another*, non-capitalist modernisation. This is the central idea of the various attempts to tackle issues related to sustainability based on categories from political economy that share varying degrees of kinship with Marxism. The first

European ecosocialist manifesto stated that political ecology does not consider capitalism inevitable (Antunes *et al.* 1990: 27). Another programmatic declaration, this time at the start of the 21st century, insisted that the basis for overcoming the current crises was none other than the “generalization of ecological production under socialist conditions” (Kovel and Löwy 2001). These types of positions, which denounce the “capitalist ecocide”, are a constant feature of the aforementioned ideas.

Similar to ecomodernist discourses, many expressions of ecosocialism are gross simplifications that scarcely go beyond reiterating capitalism’s responsible for the ecological crisis and arguing that socialism will be responsible for resolving it while conveniently overlooking the disastrous ecological balance of the forms of socialism that have actually existed. However, the ecosocialist version of sociology for sustainability includes more complex, creative and nuanced formulations.

Examples include André Gorz (1978; 1991; 2012), who maintained that the ecological crisis impedes the reproduction of capitalism and that the only way to avoid this incompatibility resulting in widespread suffering and catastrophic social disintegration is the transition (or “Exodus”, in Gorz’ parlance) to a new model of convivial social relations based on a non-mercantile economy, a new alternative model to the society of wage labour that is disappearing and that—he insisted—will not return. In an original interpretation of the thesis of surplus human capacity found in works such as Marcuse (1974) and Bahro (1984), he maintained that the liberation of time will challenge the centrality of the work–employment nexus, allowing us to move away from the capitalist logic through a voluntary and collective limitation of life lived within the sphere of heteronomy or needs (wage labour and the non-convivial economy) to allow the expansion of the sphere of autonomy. Gorz thus advocates a vision of social change in terms of the conflict between autonomy and heteronomy.

In another example, Schnaiberg (1980) maintains that environmental degradation is the inevitable result of a combination of interconnected processes, which he calls the “treadmill of production”: companies are driven by competition to increase production and profits, and must use natural resources to do so; workers depend on economic growth to improve their lot in terms of employment and wages; however, to avoid being squeezed out of the market, the owners of economic organisations must replace labour by physical capital; meanwhile, governments promote accumulation in pursuit of the objectives of national development and social security. The result of all these convergent processes is the need to extract more resources, coupled with ever-growing volumes of waste. Pressure to increase the mercantile value obtained from ecosystems leads to ecological disorganisation, causing feedback in the form of social conflicts and socio-economic disorganisation.

O’Connor (1991) maintains that a “second contradiction of capitalism”, which pits the state against the growing cost of supply for the conditions of production, must be added to the first contradiction between productive forces and the relations of production. Polanyi (1944) showed that the functioning of the

capitalist economy requires a number of conditions to be ensured from outside the market: (a) a healthy and educated workforce; (b) certain external physical or “natural” conditions (related to aspects such as the state of ecosystems and the availability of natural resources); (c) conditions related to the community, such as infrastructure, transport and communications systems. Ensuring the conditions of production has two effects: when companies bear the cost, it halts the accumulation of capital; when costs are met from public funds, it accelerates and intensifies the fiscal crisis of the State. Consequently, he concludes, the second contradiction is of a directly political nature.

There is also a branch of ecofeminism that can be classified as ecosocialist. It holds that the capitalist form of patriarchy has created the ecological crisis and that the solution lies in the abolition of patriarchy and hence, capitalism which is merely one of its forms (D’Eaubonne 2018[1978] and Salleh 1997). Echoing the assertion by Marx that capitalist relations of production erode the two sources of all wealth, land and labour, D’Eaubonne argued that capitalist patriarchy erodes the two sources of life: the Earth and woman. The specific features of her point of view are derived from this fundamental posture.

Given that many of the versions of political economy of the environment use Marx as a reference point, the question of whether there is or can be an ecological Marxism is relevant. Classical Marxism has an extremely strong productivist bent, which makes the idea of a version free from productivism problematic, a fact that has been clear since the first rigorous studies of the subject (Altvater 1994). The following passage from *Capital* is frequently cited: “Capitalist production, therefore, develops technology, and the combining together of various processes into a social whole, only by sapping the original sources of all wealth—the soil and the labourer” (Marx 1954: 506–507). In his study of agriculture, Marx noted that the capitalist city interrupts the return of nutrients to the Earth, arguing that this was a problem that could only be solved by the correct application of the science of agronomy in a context of non-capitalist economic relations. There are those who claim to have detected an ecologist version of Marx by following this line of thought, albeit the type of ecologism that maintains development can be sustainable (Foster 2004). However, the analysis of Marx can be summarised as *Liebig plus communism!* (Garcia 2018b), which, when all is said and done, is more an enthusiastic prayer to Saint Industry and Saint Revolution—albeit with the emphasis on the latter—than a serious acceptance of the limits imposed by the finite nature of the planet. In other words, the original Marxist formula is much closer to its Leninist sequel (Soviets plus electrification!) than some of the proponents of eco-Marxism are willing to admit.

The dream of the “reintegration into nature”

The connotations of “ecocentrism” entail an ambiguity that is so pronounced, it would perhaps be better to abandon the word altogether. In its critical dimension, as a challenge to anthropocentrism, to the *go forth*,

multiply and dominate the world mindset, everything seems clear. However, reconciling a moral ecocentrism with an epistemological one (and both exist) is much harder. Consider, for example, the literature on the “Gaia hypothesis”, which oscillates between an animism with touches of mysticism and the crude reality of a deterministic naturalism.

The majority of arguments for ecocentrism justify it as an ethical principle. Washington *et al.* provide a good example: “We maintain that the ecosphere, including the life it contains, is an inherent good [...] irrespective of whether humans are the ones valuing it [since] it is true that (as far as we know) humans are the only species that reflects on and applies moral values” (2017: 3rd para.).

This “exporting” of moral value to parts of reality that are by definition alien to it continues to trouble me, after having read and listened to many attempts to justify it. I do not understand why the point of view that entrusts humans with the mission of dominating the world is described as anthropocentric and that which assigns them the task of caring for it and looking after it as ecocentric. In both cases, it is a moral and exclusively human principle that assumes the responsibility for the destiny of the rest of the universe or, at least, the part within our reach. (And if it is only an *attitude*, a *perception*, or a *sensibility*, I find the Franciscan *Canticle of the Sun* clearer and more convincing than the twisted contemporary formulations of an artificially expanded ethic).

The term “ecocentric” is, however, consonant with one approach that is, in more than one sense and insofar as it suppresses any component of moral value in describing the state of affairs, contrary to most common use of the term. I am talking about the approach in which: (a) humans, like all animals, are genetically driven; (b) we damage the environment as an inevitable effect of overpopulation, as a necessary part of the cycle of a plague; and (c) we thus generate problems without a technological solution (Morrison 1999, 241–242).

Aside from how to dissolve—if such a feat is possible—the ambiguities of ethical ecocentrism, we know that it proposes itself as a condition of ecological responsibility in practice. The manifesto by Washington *et al.* I mentioned above goes on to state that “those with an ecocentric worldview cannot silently tolerate mass anthropogenic extinctions” and that “ecocentrism can help humanity seek sustainable solutions” (2017: 9th para.).

The implicit sociological hypothesis in such statements is that cultural change and transformation of the system of values is the cause of economic and political transformations. Indeed, the idea that Saint Industry and Saint Revolution are powerless without guidance from the Holy Spirit is an interesting one. Parsons, for example, the most influential sociologist of the mid-20th century, defined himself as a cultural determinist (1966: 113), convinced that the cultural system (and the “ultimate reality”) controlled the economy, technics, institutions and individual personalities. And this is to say nothing of Weber (2010[1904-5]) and his thesis of Protestant ethics as the originating factor of capitalism.

Sociology for sustainability has a number of points of reference. White (1967), for example, argues that Christian theology is primarily responsible for the ecological crisis (recall that White was not only a professional historian but also a theologian). There are also many authors who have argued that some form of religious conversion, a shock to the system of values, is a necessary condition for the high concentration of spiritual energy without which the shift to ecologically responsible behaviour would not be possible (Bahro 1986; Reichmann 2017). Salvador Giner, a renowned sociologist in Hispanic sociology, has also reflected at length on this matter (Giner and Tàbara: 1998).

Without preamble, let me declare my scepticism. Almost all (or all) of the major religions and almost all (or all) traditional knowledges contain aspects that praise moderation and condemn excess. For me, the issue of sociological interest is more the practical fragility of these lessons (the rise of consumerist culture and values in all cultural contexts where this has become economically possible is perhaps the most interesting aspect). However, the sociological relevance of the ethics of harmonic reconciliation with nature cannot be denied. (My impression is that this is more as an object of study than as an explanatory hypothesis, but that is another matter.)

In short, the issue is not whether the dream of reintegration into nature constitutes a workable programme insofar as it guarantees sustainability. It does not. This is not only because turning back the clock and erasing the past from our memories is impossible, or because there have never been truly “natural” human beings, without technics and without society. It is also because the population of a planet of hunter-gatherers in the strict sense of the word could never be sufficient to provide enough insurance against the periodic threats of extinction (a situation poorly captured by the word “sustainable”, since fragility with respect to changes in the environment acts as a counterweight to durability).

New outlooks of human ecology: is descent inevitable, desirable or both?

If the finite nature of the planet imposes limits that cannot be overcome by technological innovation, political change or cultural mutations, all that needs to be done is to try to detect these limits to be able to anticipate them and remain within them. If the limits are breached, it is necessary to adapt, minimising the costs of doing so (the alternative is an uncontrolled collapse). Both ordered adaptation and collapse imply scaling back the system (in terms of its size, activity, integration and differentiation) until it is again below the (cultural) carrying capacity. The historic period of this hypothetical scaling is called descent. Reducing the physical dimensions of society in terms of both demographics and economics, is called degrowth. Degrowth must apply to both the total mass of society and the metabolic flow of energy and materials by which it reproduces itself.

The necessary concepts for analysing the sociological implications of all this are not new. In fact,

as noted earlier in this article, they can be traced back to the origins of modern scientific sociology, maturing in the formulations of the 1960s and 1970s. Illich's work, especially during the 1970s (Illich: 2004), produced a guide for thinking about the counter-productive effects of the development of modern institutions. Hardin, a natural scientist with a strong sociological inclination, developed an analytic framework for exploring the consequences of treating the services of nature as free goods (1968; 1992) and perceiving—with the fitting feeling of tragedy—the consequences of failing to act in time (1974; see also Boulding 1977). Catton (1980) showed how to convert the concepts of carrying capacity and overshoot into sociological categories. Finally, as well as laying the foundations of ecologic economics, Georgescu-Roegen (1971) proposed far-reaching ideas on the relationship between evolution and history and, thus, social change.

There is now a wide range of theories that accept the ideas of descent and degrowth. Some have a more direct political emphasis (Latouche 2006), while others take a more historical approach, exploring paths and connections with large technical systems (Gras 2003). There are also those that insist on the possible changes in individual and collective choices (Sempere 2009) and those that emphasise the systemic dimensions of the paths of growth, overshoot and descent (or perhaps even collapse) (Odum and Odum 2001; Meadows 2013).

The approach to the idea of descent or degrowth varies depending on the assessment of the unsustainability of current population volumes and economic activity. If we accept that demographic and economic expansion has surpassed the established limits and has already reached the “zone of unsustainability”, descent is not an option to be chosen or rejected based on moral or political preferences but a necessary and inevitable perspective. If we accept that while demographic and economic expansion may still be physically possible it no longer contributes to well-being or the “good life”, then degrowth can be a moral and political option: “living well with less”. If we accept that demographic and economic expansion has not yet led to an overshoot but that we are perilously close, then degrowth can be preventive, a precautionary measure. These three outlooks are present in the resurgence of the ideas of degrowth in recent years. From the standpoint of the first, degrowth is not optional, it is inevitable; for the other two, it is an option that should be chosen because it is desirable and just (Martinez-Iglesias and Garcia 2011).

As is often the case, there is some tension when it comes to the definitions and the main arguments. What does “degrowth” and all the rest of it really mean? Personally, these debates are of little interest to me. The central hypothesis is that the expansive era of industrial civilisation has caused us to overshoot the carrying capacity of the planet (or at least to come extremely close to this limit). Consequently, unless a fundamental technological innovation appears (something that is not currently on the horizon), a historical period characterised by scaling back has either already begun or is approaching. However, the different paths of this descent will be impure and confusing, as is always the case in history, and any claim to provide

a correct and precise definition of the “line of change” (recall the citation from Georgescu-Roegen at the start of this article) is doomed to fail.

A concluding remark

In a reflection on the conditions for survival, Hardin (1986) recommended taking precautions against “economists, ecologists and the merely eloquent”. Sociology for sustainability—which must be excluded from the first two of these categories—has so far exhibited a marked tendency to complacently align itself with the third. It must take ownership of the question of whether the limits of the planet have already been breached, as alien and inaccessible as it may seem to begin with. Moreover, it must work based on a critical response if it is to avoid the risks of a complacency that would see it consigned once and for all to irrelevance.

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