Towards a Critical Theory of the Anthropocene and a Life-affirming Politics

A Post-Anthropocentric, Post-Growth, Post-(neo)Liberal Green Republican Analysis

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Abstract

This thesis locates itself in the field of critical green political theory. It takes the present environmental crisis as its object of study to provide a critical account of the way it is currently addressed in dominant Anthropocene narratives and liberal capitalist growth-based institutions. This work offers a constructive and emancipatory delineation of what could be an ecological civilisation respectful of its natural environment and social differences, and describes how to shift from an 'arrogant speciesism' and materialistic lifestyle to a post-anthropocentric ecological humanism focusing on the 'good life' within ecological limits. Whilst there are already countless research works and books dealing with this issue, the major novelty of this thesis is to propose a green republican analysis building on John Barry's work that covers the ethical, political, and economic aspects of the transition away from 'actually existing unsustainability'. Taking as a starting point the society as it is constituted today and not as it should be, that is a consumer capitalist society characterised by ecologically flawed ontological, ethical, and practical approaches, this dissertation presents a normative investigation concerned with the real world applicability of the changes it suggests to implement. Indeed, while rooted in ethical thinking and political philosophy, this thesis seeks to offer a concrete roadmap of how sustainable societies can be fostered. It, therefore, represents an attempt in the field of 'realist utopianism', that is a position committed to a transformative narrative which advocates humans' reconciliation (and re-connection) with the planet and the more than human world. This work aims at integrating and synthesising across different bodies of knowledge such as Earth Systems Sciences (ESS), philosophy, political theory, political science, political economy, ecological economics, but also sociology, psychology, and cultural studies. In this regard, it is an interdisciplinary applied form of critical green political theorising.

Keywords

- Anthropocene
- Critical Theory
- Green Politics
- Political Economy
- Ecomodernism
- Green Republicanism
- Democracy
- Ecological Citizenship
- Post-growth/Degrowth economics
- Virtue ethics
- Ecocentrism
- Weak anthropocentrism

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220303 – Environmental Philosophy

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Statement of Originality

I hereby certify that all of the work described within this thesis is the original work of the author. Any published (or unpublished) ideas and/or figures and documents from the work of others are fully acknowledged in accordance with the standard referencing practices.

Anne FREMAUX

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List of Abbreviations

COP	Conference of the Parties
ESS	Earth Science System
GDP	Gross Domestic Product
GNP	Gross National Product
GHGs	Greenhouse Gas Emissions
ICs	Indigenous cultures
IGBP	International Geosphere-Biosphere Programme
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
LtG	Limits to Growth
NBIC	Nanotechnology, Biotechnology, Information technology and Cognitive science
NGO	Non-governmental organisation
NCT	Niche Construction Theory
OECE	Organisation for European Economic Cooperation
PNS	Post Normal Science
TBI	The Breakthrough Institute
UDHR	The Universal Declaration of Human Rights
UDRME	The Universal Declaration of the Rights of Mother Earth

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Prelude

The Party of the Anthropocene – Act I

Welcome to the glamorous Party of the Anthropocene,
organised by humans for humans.
We are going to celebrate the supremacy of the human,
achieved after centuries of poverty, disease and labour. We made it.
After the death of God (Nietzsche [1883-1885] …)
and the death of Man (Foucault [1966] …),
whoever is left, can dance wildly on their ashes.
This is going to be once in a lifetime. Excess will rule.
We are going to drink all the bottles of alcoholic
and non-alcoholic beverages ever produced;
We are going to eat all the lobsters, cows and chickens left on Earth.

Everything will be provided: oak tables sustained on elephant tusks legs to
dine under the stars, plastic flower seats
designed by the most famous brands,
personalised polystyrene plates to eat as much as you wish.
And… guess what? We are going to live forever!

Alive non-human animals are not allowed.
Robots are allowed, if accompanied by humans – they need tickets too.

Source: Ferrando (2016: 161)

Chapter 1

Introduction

We are what we think.
All that we are arises with our thoughts.
With our thoughts we make the world.
—The Buddha, quoted in the Dhammapada (Byrom, 1993: 15)

A new type of thinking is essential if mankind is to survive and move to higher levels.
— Einstein (1946: 13)

Foreword: In political and social science, the term 'crisis' (from gr./lat.: to discern, to judge) originally referred to the phase in a trial when a decision or a verdict was made prior to closing a case. In medical science, the term 'crisis' describes the turning point of a disease after which the patient either recovers her health or dies. In both cases, the word 'crisis' refers to *a short* period of time where a critical condition is about to find an outcome and a resolution that brings back order and stability. To use the word 'crisis' to describe the current ecological predicament could therefore suggest that the collapse of the ecosystems we are witnessing is sudden, recent, and about to be overcome if good and quick decisions are made. Under this view, the ecological predicament would be a transitory state that would reach soon a new equilibrium. As in the case of a patient getting an appendicitis, nature could find back its former and stable condition after a good treatment. The myth of nature's recovery (or quick healing potential of nature) and the prospect of a stabilised situation after a 'passing crisis' can be used to relativise the current ecological catastrophe and nurture reformist policies and other delaying strategies that do not acknowledge the gravity of the situation and do not address it at the root. Contrary to what the expression

'environmental crisis' involves, the ecological degradation is not sudden (although things are now accelerating at a dramatic pace): it is a phenomenon that finds its historical roots in the well-documented human's abuse of nature; it is not a 'passing' problem, like the 'mid-life crisis', and it will not be resolved by 'quick' fixes (such as technological fixes). The handling of this 'crisis' will never lead to a 'resolution' insofar as the previous conditions of life on Earth (or the world as we knew it) will never be restored. Indeed, the so-called 'ecological crisis' is actually a complex and large set of long-term and irreversible changes that have entailed and will entail significant dramatic losses and irreparable damages. It is not a recent phenomenon but a long-term process that has already reached the collective consciousness since several decades (at least since Rachel Carson's essay *Silent Spring* in 1962). The current situation could be better described as a general and complex environmental collapse whose characteristics are to be simultaneously sudden and slow, globalised and very localised, scientifically substantiated and yet unpredictable in its multiple effects (feedback mechanisms). As this foreword shows, the expression 'environmental crisis' is not satisfactory: it is a euphemism that clearly understates the gravity of the situation. However, for lack of a better expression, this thesis will still use this expression to describe the dramatic/tragic[1], large-scale degradation (destruction) of ecosystems and systems of life that humans and non-humans are currently facing.

1.1. Context: the Anthropocene or an era of crises

The environmental crisis is the most prominent challenge humanity has ever had to battle with, and humanity is currently failing. As expressed in the recent Second World Scientists' Warning to Humanity (Ripple et al., 2017), we are fast approaching

[1] If a drama is a story produced by human actions while a tragedy is a story produced by superior forces (destiny/gods), the 'ecological crisis' might be a drama that will end up as a tragedy, that is a human-made situation that will eventually escape the power of humans.

many of the limits of what the biosphere and ecosystems can tolerate without substantial and irreversible harm done to human and non-human life. Except for stabilising the stratospheric ozone layer, humanity has failed to address all the ecological impending or potential damages inflicted upon planet Earth. 'Humanity', as says the Warning, 'is not taking the urgent step needed to safeguard our imperilled biosphere' (p.1).

Rather than calling the whole of humanity into question, this thesis contends that those responsible for the general predicament are, instead, the Western and Westernised wealthy countries and peoples[2]. Those are currently jeopardising the future of humanity and life on earth by their incapacity to address their intense and immense material consumption, and the entrenchment of their social organisation in undifferentiated economic growth as well as in arrogant anthropocentric narratives of control and mastery of nature. According to Plumwood, '[i]f our species does not survive the ecological crisis, it will probably be due to our failure to imagine and work out new ways to live with the earth' (2007: 1). In effect, wealthy material societies of the Western world are currently unsuccessful in going onwards 'in a different mode of humanity' (ibid.), in reworking themselves and their unsustainable high-energy and high-material consuming paths of life adaptively. The manner in which we inhabit the world is unsustainable, and no progress will be done until Western countries embrace radical shifts in their modes of being, including economic, social, cultural and psychological dimensions of their existence. There is no small irony in the fact that what has been named the 'Anthropocene', or the 'age of human' – attesting to human 'dominion' over nature – is also a period when the survival of humanity has never been so much at risk (Chapter 2). After 11,700 years of relative climate and geological

[2] The 'Westernised' world includes here all members of the 'transnational capitalist class' (Sklair, 2000), also existing in the global South.

stability in the Holocene[3], the earth is now being so much transformed by human technologies that it is repaying us 'in kind' and reciprocates with disasters and catastrophes. This phenomenon is named in this thesis as 'the return of nature in the Anthropocene', or the fact that global capitalism has gone so far in depleting resources and causing global ecological degradation that earth's life supporting systems are becoming dangerously unstable (Chapter 3). The Anthropocene is, indeed, bringing about fears that the planetary system has been forced outside of the stable trajectory that characterised the Holocene (Folke et al., 2010).

It is increasingly clear that the hyper-separation of humans from nature that has taken place within modernity and the development of growth-based economies in industrially developed nations is responsible for the crisis. Moreover, the 'great acceleration' of GDP, population growth, consumption, deforestation, urbanisation, water, and energy use that followed the 1950s has dramatically increased environmental crises, entailing irreversible loss of species and biodiversity, rising climatic instability and levels of pollution which put today human and non-human life under threat. We live, indeed, in an epoch characterised by a destabilised global climate, deforestation, the melting of glaciers and large 'dead zones' in coastal marine, unprecedented extinction rates of species, the tremendous presence of radionuclides, microplastic particles and aluminium in the core elements of matter, and the beginning of massive environmental migration due to environmental changes which compromise the well-being and secure livelihood of millions of people (See Appendix D). The word 'crisis' itself often used to describe the ecological predicament means that humanity has come to a critical point, what Hippocrates used to call the apex of the disease where it is ultimately decided whether the patient will survive or not. The term 'crisis' (from the Latin verb '*Krinein'*, to choose/to decide) means thus that radical decisions must be made in order to realise the needed decisive shifts. This thesis's contention is that the 'Anthropocene', or 'Age of humans' (*Anthropos*), is the

[3] The Holocene is the geological interglacial period that has lasted 11,700 years and which forms, together with the last Pleistocene ice age, the second period of 'Quaternary'.

Apex of the Western-induced ecological crisis, and that the decisions made in the name of this concept and the reality it embodies will decide on the future of human and non-human species. The 'Anthropocene' is described in this thesis as a controversial notion, not so much for the empirical claims that it makes – that is the fact that humans have become a dominant geological force – but rather for its ontological, ethical, and (a)political assumptions (cf. Chapters 2 & 3). As this work will show, the 'Anthropocene' does not mean so much our victory over nature but rather indicates our ecological defeat.

The influence that Western growth-based anthropocentric industrial societies have had on the planet since more than 200 years entails today numerous non-manageable risks, that modernists and hyper-modernists unreflexively consider as the 'normal' collateral effects of 'progress'. Wealthy societies of the Global North have, indeed, so dangerously impacted the planet that humanity (as a whole this time) is now endangered by bio/natural catastrophes. Climate scientists warn us today that we are in danger of producing a runaway greenhouse effect that will be uncontrollable, and will lead to such radical ecosystemic transformations that billions of people could die and many civilisations not survive. What the Anthropocene – or the apex of human domination over nature – reveals is the constitutive dependency of human life on natural ecosystems of which they are a part. This situation does not demand more economic management of the planet, more intrusive technologies or more artificialisation. It rather calls for a radical reinvention of our societies, a decentring of the humans within our metaphysical worldview (Chapter 4), a withdrawal of the capitalist *technosphere* at the benefit of the *biosphere*, that is a new economic paradigm that replaces the unsustainable capitalist logic of growth by sustainable degrowth and/or steady economics (Chapter 5). It also requires envisioning an institutional model which preserves and enhances democratic institutions and processes (procedural and critical democracy), fosters environmental justice, and, against the

'superpower syndrome'[4] and dominant techno-optimistic Promethean views of liberal societies, acknowledges the biological and social embeddedness as central elements of human existence (Chapter 6). The transition away from unsustainability does not require more technology or more economic growth but more socially progressive innovations. It implies to give up or radically reappraise values such as competition, consumption, productivity, economic efficiency, technological risks, economic growth, and so on which all lead to the global environmental crisis but also produce social, political and moral degradation of our civilisation. It means, instead, to value freedom, care, quality of life, equality, peace, compassion, a sense of community, democratic participation, and active citizenship. Against the 'autophagic' capitalist society (Jappe, 2017) which embodies the folly of a species that destroys its material conditions of survival as well as the ethico-socio-political order which makes human life meaningful, this work will map a way to exit the crises and to build sustainable, pluralist, democratic, fair, and politically life-affirming societies.

1.2. Living in times of pluri-disasters

Neoliberal competitive market-state systems have colonised all aspects of life, but mainly, they have subjugated nature and used it as an 'unlimited' spring of profit and resources intended to feed the logic of growth. The globalised neoliberal framework behaves as if nature would be a neutral background for profit-seeking economic development. In order to push back the ecological limits that are more and more visible (cf. Chapter 2), neoliberals argue that we can transcend such limits through decoupling and technological innovations (Section 5.3). Indeed, constructivist neoliberal governments act as if the biosphere was a mere component of the socio-economic sphere. As an anti-ecological ideology, neoliberalism denies the existence of natural limits and promotes unlimited material wants vs. limited

[4] See Lifton (2003 : 133).

resources, a cult of endless consumption (consumerism), and techno-fixes (techno-optimism) as the solution to social and ecological problems. The appropriation and commodification of nature undertaken by neoliberal economics and the freedom it enshrines – understood mainly as *the legitimate exercise of extractive power* – entails that nature is viewed only as an instrumental source of raw material and sinks of fossil fuels rather than as an ethically valuable physical, biological, and chemical context of life. Inevitably, this type of economics has supported an insatiable extraction that is today overwhelming ecosystemic capacities. Neoclassical economics, as Smith says, 'might be regarded as that instrumental form of rationality that most actively opposes the ethical valuation of the environment' (2001: 26). If the main starting point of the thesis is the severe environmental crisis we are facing and the natural planet-wide collapse toward which we are heading, today's ecological reality is powerfully connected to other issues such as growing socio-economic inequalities, the erosion of democratic institutions, the organised apathy of citizens, the loss of power of nation-states in favour of corporations, the progressive disappearance of the notion of common good, and the economic colonisation of the social, cultural and political life by economic objectives. The global ecological crisis reveals these interlinked disasters caused by all the core components of capitalism that include: an excessive exploitation of nature, the rise of industrialism, the self-destructive over-confidence in human-technical power, the arrogant anthropocentric mind-set and denial of limits, as well as the narrow rationalism and materialism that develop within a reductionist predominant form of science.

Neoliberalism as a 'global system' threatens societies as a whole and more especially the core values of social communities and democracy, such as justice, 'common decency', civic virtue or active citizenship. In neoliberal patterns, economic efficiency, market values, employability, consumer freedom, and instrumental rationality are favoured over democratic participation, civic values, personal autonomy, active citizenship, enlightenment and moral rationality (reasonability).

Institutions dedicated to the common good are turned into competitive structures occupied to satisfy the interests of markets and greedy elites. Pluralism is disappearing under the assault of a one-dimensional consumer pattern which treats humans and non-humans like commodities under the hegemony of private interests. Civil society, an essential element of the agonistic and critical democracy defended in this thesis, is losing out to 'spectator democracy'. Indeed, citizens are becoming passive and self-centred in part because existing political and democratic structures leave them with few opportunities to participate and make collective decisions. As a consequence, the link between democratic politics and citizens has been weakened. Neoliberal individuals end up being characterised by passivity, indifference, and loss of interest for the shared common world. What defines neoliberal society is, indeed, a widespread disaffection for democracy and social bonds entailed by the loss of political agency and self-determination. In such a system, propaganda is necessary to manufacture consent and to shape the fundamental values to make sure that individuals see themselves as consumers, workers, or owners of capital, rather than citizens, spiritual or relational individuals. In order to be fully operational, such a system must also rely on high doses of cynicism, and the value of relativism cultivated by deconstructive postmodern views.

The neoliberal capitalist agenda, associated with an arrogant anthropocentrism[5] and the technological optimism of many political leaders, experts, techno-scientists, academics, and citizens, has transformed nature and people into raw materials ('natural' and 'human resources'). It has replaced democratic and republican institutions – defined by their concern for the common good – by structures aimed at facilitating the activities and profits of corporations and markets. It has deprived Western political structures of substantial democratic energy by turning citizens of wealthy liberal nations into demoralised and nihilist *homo oeconomicus*

[5] The strong (or arrogant) version of anthropocentrism holds that the only things valuable in themselves are human beings, theirs wants, theirs needs and that on behalf of the satisfaction of those, nature can be exploited and destroyed.

('neoliberal citizens'); that is passive consumers as opposed to active citizens. More than that, neoliberalism, through the mass-media, entertainment, information, and educational systems has little by little converted all the spheres, activities and dimensions of life into economic ones ('economisation' or 'marketisation' of life). Private and public institutions are used as ways to transmit the values of capitalism[6]. As an unethical and unsustainable model of commercialisation, ultraliberal capitalism supports crass commodification, intensified inequalities, and transforms everything in its way – from non-human nature to human beings – into replaceable and throwaway products. As a global threat, neoliberalism leads to 'environmental stresses (water shortages, deforestation, soil erosion or climate change), food and energy insecurity, peak oil, rising poverty and inequalities within and between societies, increasing passivity of citizens within democracies and the inexorable rise of corporate power within and over the democratic state' (Barry, 2008: 3).

The price humans socially and ecologically pay and will have to pay in the future for the triumph of the neoliberal ideology, is disproportionate with anything humankind has experienced in the past[7]. But next to this, the dominant regime entails severe political risks. Liberal readers of Hannah Arendt often forget the denunciation of liberalism that spans through her all work. According to her, the exclusive defence of personal interests that (neo)liberalism strongly promotes entails a dangerous disappearance of public bonds as well as a lack of concern for the common good and public debates. In *The Origins of Totalitarianism* (1951), she considers as a root of the monopolistic dictatorial direction 'a [bourgeois] way and philosophy of life so insistently and exclusively centred on the individual's success or failure in ruthless competition that a citizen's duties and responsibilities could only be felt to be a needless drain on his limited time and energy' (1973: 313). Many phenomena which concurred to the rise of totalitarianism can be seen happening under neoliberal

[6] Cf. the theory of 'ideological state apparatus' (Althusser, 2014).
[7] See Appendix D: The 'Potential Unravelling of Civilization' (Capra & Luisi, 2014 : 364)

regimes: the collapse of traditional and moral values; the dislocation of the political class; the disappearance of 'citizens with opinions about, and interests in the handling of political affairs' (p. 308) in favour of structureless and undifferentiated masses. Indeed, '[t]otalitarian movements are mass organisation of atomized, isolated individuals' (p. 323). The transformation of political classes into masses of individuals devoid of common interest 'and the concomitant elimination of all group solidarity are the condition *sine qua non* of total domination' (p. xxxii). The popular passivity and political apathy (mentioned above) are important factors 'for those forms of dictatorship in which a "strong man" takes upon himself the troublesome responsibility for the conduct of public affairs' (ibid: 313).

This risk entailed by a nihilistic neoliberal ideology should not be overlooked at a time when ecological conditions could deteriorate at a breath-taking speed, leaving apathetic and divided crowds at the hands of influential political, economic or cultural leaders. As Zimmerman says, '[i]n stressful times, peoples are all too willing to surrender to leaders promising to end humanity's alienation from nature' (1994: 7). The lack of democratic practices and education associated with growing inequalities and the absence of ecological remediation convey the risk of eco-totalitarianism. While some liberals have denounced the peril of authoritarianism that they see inherent in green political theories[8], we have no choice but to note that the danger comes more from (neo)liberalism than from green politics.

Indeed, significant green political theorists upon which this work draws such as (among others) Barry, Dobson, or Eckersley, have demonstrated that green political theory is intrinsically linked to democracy, opposing by doing so traditional liberal critiques which see green political tradition as entailing eco-authoritarianism. Indeed, it is the unsustainability of consumer democracies *as we know them,* i.e. the way liberal democracies are currently organised through the manipulation of passive

[8] For a vigorous liberal denunciation of ecology as rampant fascism, see Ferry (1995). For an ecomodernist suspicion about the 'humanism' and 'liberalism' of some in the green movement who want 'to suppress trade and travelling', see Arias-Maldonado (2012: 4).

individuals and the take-over of private corporations, which has the potential to lead to undemocratic institutions and practices (for instance expert-technocracies). In brief, the (neo)liberal organisation of life is paving the way to large-scale ecological, social, ethical, and political catastrophes. The figure below extracted from Giddens (1990) illustrates the array of 'high-consequence risks of modernity', and illustrates the risk associated with the growth of a totalitarian power.

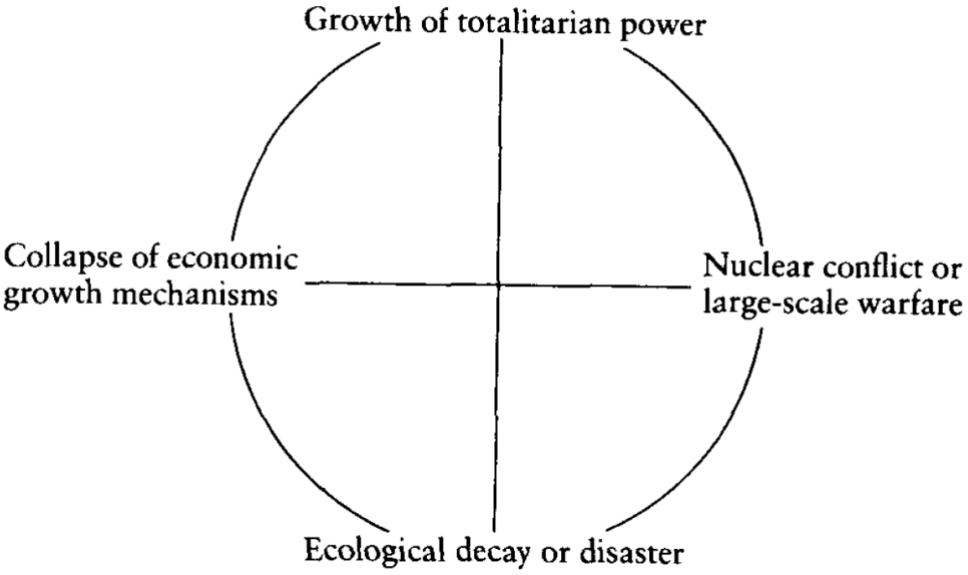

Figure 1.1: High-consequence risks of modernity (Source: Giddens, 1990: 171).

1.3. Green republicanism vs. (green)neoliberalism

> '[L]eaving the fate of the soil and the people to the market would be tantamount to annihilating them'.
> —Polanyi (2001:137)

As Cannavò shows (2016: 72 sq.), environmental political thought has just begun to engage with civic republicanism[9]. This revival follows the recent enthusiasm[10] for republican core values and themes such as political participation (popular sovereignty and self-government), active citizenship, a quest for stability and/or sustainability, the emphasis on common goods, civic virtue, freedom as non-domination, economic equality, etc. which appear particularly appealing for theorists seeking deeper foundations to democracy and political life than the values and premises offered by (neo)liberal capitalistic consumer and market-based regimes. The revival of republicanism has given rise, in contemporary republican theory, to two different strands of thought: one inspired by Aristotle and civic humanism–the neo-Athenian version–which contends, with communitarians, the social nature of human beings and argues for a conception of liberty understood as participation to the public and political life. As Maynor says, 'Athens came to represent the ideal classical republic for those later writers who stressed the importance of civic-virtue and self-government and their necessary connection to democracy' (2003: 10). This Aristotelian conception of citizenry is specially oriented towards the defence of the common good against sectarian interests and the formation of the moral character understood as a public and not merely private concern that involves the power of the

[9] There has been so far little academic work done on the intersection between green and republican traditions. See Curry (2000), Barry (2008, 2012), Barry and Smith (2008), Cannavò (2010, 2012a, 2012b).

[10] See Skinner (1990), Dagger (1997, 2004, 2006a), Pettit (1997, 2012), Honohan (2002), Maynor (2008), Maynor and Laborde (2008), Laborde (2013).

community[11]. The original inspiration of this strong civic republican tradition is a radical notion of citizenship as participation in civil society. Particularly embodied by Rousseau (1762), Arendt (1998 [1958]), and more recently by authors such as MacIntyre (2011 [1981]) or Sandel (1992, 1996), this version of republicanism links together political and individual flourishing, and considers politics as fundamentally related to public engagement ('self-governing political community') — a central element of which being the active creation, co-creation and recreation through public debate and dialogue of what the public good is ('contestatory democracy'). The challenge of this particular strand of republicanism lays in bringing politics into the public domain. This corresponds to the orientation towards decentralisation, local and public empowerment and the defence of an 'agonistic' form of democracy developed in this thesis.

The other version, the Roman-inspired version of republicanism finds its roots in Cicero and the roman Republic; it favours political-legal constitutionalism as a barrier against factions, demagoguery and tyranny and does not consider freedom as being so much linked to self-governing communities or popular participation but rather to the existence of a 'free state', namely 'a state where citizens are not subjected to the arbitrary power of the ruler' (Laborde and Maynor, 2008: 3). This institutional form of republicanism aims at securing liberty against arbitrary powers through judicial and constitutional apparatuses and focuses 'on creating the institutional arrangements that preserve individual freedom' (Maynor, 2003; 12). This form of republicanism is especially embodied by Machiavelli and, more recently, by Skinner (1998), Pettit (1997, 2012) and their normative ideal of freedom as 'non-domination'. Although critical of a conception of liberty that says little about social equality[12], this

[11] An example of the state involvement in the matter of education would be the 'civic sustainability service' proposed by Barry (2012: 257-266).

[12] See Schuppert (2015) and Chapters 5 & 6 in this thesis.

thesis stresses the importance of the rule of law to organise, define and safeguard the political, civil, economic, ecological, cultural and social human rights (as well as non-humans rights) and integrates, therefore, in its core elements the political constitutionalism advocated by the Neo-Roman version of republicanism[13].

This work combines, indeed, the two forms of republicanism in a new synthesis called 'green constitutional republicanism'. The first strand of thought provides green republicanism with a strong version of citizenship (democratic participation, civic virtue) which might appear difficult to realise in our contemporary 'consumer democracies' but which constitutes a regulative horizon for a green republican democracy. It also appeals to conceptions of the good society, that is to comprehensive and normative views of politics which oppose the 'neutrality principle' of liberal states and liberal political theory in general — a view that is consistent with the normative account of politics offered by green republicanism. According to this version of republicanism, the rise of the liberal procedural republic and its emphasis on individual rights and neutrality has systematically disempowered citizens and resulted in widespread discontent, alienation and apathy within the democratic project (Sandel, 1996).

On the other side, the neo-roman tradition provides green republicanism with a model of non-arbitrary state and institutional arrangements that are necessary to preserve individual freedom against domination. The idea that interferences from the state as well as from popular contestation must be restricted by the rule of law and by constitutional check and balances in order to protect human and non-human rights

[13] The rule of law is consistent with the principle of 'limited government', that is a principle of governance that is hostile to the concentrations of coercive power and the arbitrary use of power against rights. In a constitutionally limited government, all persons, institutions and entities, public and private, including the state itself, are accountable to *laws* that are publicly promulgated and agreed upon. The implementation of limited government aims, therefore, at safeguarding liberty against abuses of authority.

as well as democratic institutions is indeed of great of importance for the green republicanism contended in this thesis. Therefore, what is proposed here is the ideal of a 'mixed constitution' that combines elements borrowed from the contestatory and 'direct democracy' perspective of the first republican tradition and from the legal republican constitutionalism associated with the roman version[14].

The green republicanism developed in this thesis belongs to the radical green political tradition which, as defined by Dryzek 'is about political change targeted at social structures and institutions as well as consciousness change' (2005: 203). The new theoretical position articulated in this work aims at reunifying on its own platform various forms of left-wing green radical political theories such as environmental justice movement, eco-Marxism, social ecology, environmentalism of the poor, ecosocialism, ecofeminism, politics of care, degrowth, anti-globalisation and grassroots political movements, , … as well as more metaphysical, spiritual or cultural strands of ecological theory (deep ecology/ecocentrism, Buddhist ecology, eco-theology, etc.). Green republican core ideas are the recognition of (objective) ecological limits and the defence of LtG theories; the understanding of nature as complex ecosystems that exceed human understanding —a situation which calls for extreme caution in the way we deal with non-human phenomena; the idea that the non-human natural world has intrinsic value, which is something other ideologies such as socialism, conservatism or liberalism have difficulties to accept; the importance of decentralisation (cf. Bioregionalism) but also the emphasis given to the development of a strong ecostate[15] to orchestrate and elaborate the structural changes needed at the local and global levels. Indeed, green republican political theory

[14] The constitution eventually identifies with the political body itself insofar as it ultimately depends on the actual ability of citizens to have a say in the way they organise their collective life. On the Constitution-Making Process, see Elster (1997).

[15] See Barry (1999), Barry & Eckersley (2005), Eckersley (2004), De Geus (1996). For Eckersley, the green democratic state would be cast in a new role: 'that of an ecological steward and facilitator of transboundary democracy' (2004:3).

combines an impulse toward decentralisation and direct democracy wherever it is possible with the defence of a green democratic state that would represent ecological interests and concerns. Such a state would be invested 'with normative qualities, or higher responsibilities to safeguard the public interest, or articulate and uphold a framework of moral rules' (Eckersley, 2004: 3). More specifically, it would 'tackle ecological problems through multilateral agreements and domestic regulation' (Barry & Eckersley, 2005: ix). Such a change requires new democratic procedures, new forms of political representation and participation, and a new conception of the state as facilitator and protector of the ecological democracy. This particularly means challenging the neoliberal authoritarian state that has today taken command over the political life and whose primary goals are 'to attract increasingly mobile capital and to make economic activities… more competitive in global terms' (ibid.). Green republicanism particularly opposes the reformist managerial approach to environmental concern embodied for instance by the ecomodernist position in favour of markets and technological solutions (see Chapter 2) and more generally the liberal democracy's reluctance to undertake structural changes[16].

Radical green environmental politics and republicanism have a lot in common. They are both a 'politics of the common good(s)': in contrast to liberalism, they are not neutral regarding the question of the good; they elevate the community's common good above the pursuit of private interests and encourage collective forms of self-government. Both are also critical of capitalist growth-based institutions that have inegalitarian and unsustainable implications, involve corruption, the corrosion of the public realm and the monopolisation of the social, economic and political power by a minority. They are also critical of the way hyper consumerism negatively impacts citizens' civic characters; they see limitless growth economies as fostering excessive consumption, privatism and inequality; undermining social ties and destroying the environment. Although they support the existence of (regulated)

[16] See in Dobson (2007) the difference between 'ecologism' and 'environmentalism'.

markets and right-properties, republicans and radical green theorists are more willing to support and prioritize the community's common good. In summary, '[r]epublicanism [as radical green political theory] is fairly suspicious of capitalism' (Cannavò, 2016: 77). Both republicanism and green theory emphasise the need for stable and/or sustainable communities that stand the test of time against current short-sighted high-consumer societies. They particularly value (especially the Aristotelian strand of republicanism) participatory democracy and decentralisation to achieve the goal of civic participation and local empowerment. As Cannavò says, '[f]irst, democratic decentralization can give political voice to local community ties, place-attachments, and environmental knowledge and consciousness. Second, democracy and decentralization enable resistance to powerful special interests - polluters, builders, resource management… who exercise domination over individuals, communities, and non-human nature' (2016: 80). Lastly, these two political strands of thoughts favour the development of civic (green and republican) virtues, that is a certain type of citizenship and public culture that include 'a sense of place; an appreciation of ecological complexity and interdependence; … caution and humility; …care and respect; …a broadened spatial and temporal perspective; flexibility, courage, resilience, creativity; … and a sense of collective responsibility' (Cannavò, 2012: 84) in order to create a more sustainable and politically engaged society.

This dissertation offers an account of green republicanism as an appropriate way to challenge unsustainable and 'de-democratising' (neo)liberal institutions whose aim, as seen above, is to support undifferentiated growth and markets' expansion. Human and non-humans, nature and souls are being commodified and monetised by a regime that Gare qualifies as 'the most powerful driving ideological force in the world since the 1970s' (2016: 22). The only effective power opposing neoliberalism, but also the only discourse able to unite people into a major political force is the green movement (to be distinguished from green parties which are, for most of them,

committed to (neo)liberalism). Indeed, as Boggs (2012) says, environmental radicalism constitutes 'the only coherent force with a coherent strategy for change' (p. 149).

This is not a surprise, therefore, that the most significant effort of neoliberal leaders in the last decades has been directed at co-opting and incorporating green ideas and concerns in their strategies. The rise of 'ecological modernisation theory' (EMT) in the 1990s' as a form of 'green capitalism' is one clear illustration of that tendency. Today the attack comes under a subtler and more pernicious movement called 'ecomodernism' (also named 'new environmentalism' or 'eco-pragmatism') that, in a confusing intellectual maelstrom, combines doctrinal elements of modernity and postmodernity. In terms of modernity, ecomodernists support the belief in linear progress based on technology, innovation, and capitalism. They hold a strong anthropocentric stance according to which only humans (actually Western wealthy humans) count. They share with the Moderns the resourcist[17] and reductionist worldview according to which nature is made of dead, inert matter indefinitely amenable to human transformations and easy to reproduce technologically. In terms of postmodernity, they argue that nature has 'disappeared' (if it has ever once existed) and that the destiny of humanity is the transhumanist-cyborg human/technological entanglement that ecomodernists celebrate as the apotheosis of civilisation. They are assisted in their task by some 'hyper-modern' Promethean EES scientists who use the pretext of planetary ecological emergency to promote techno-fixes such as geoengineering[18], and who seek to bypass democratic institutions by supporting

[17] The term 'resourcist' refers to the idea that nature is only seen as a resource for human use (utilitarianism) as opposed to the idea that nature has also intrinsic value (Washington, 2013 : 109). For Evernden, '[r]essourcism is a kind of modern religion which casts all of creation into categories of utility' (1985: 23).

[18] Geoengineering comprises a set of technologies for manipulating climate on a global scale. It is commonly divided into two classes: Carbon Dioxide Removal (CDR) which aims at extracting excess carbon dioxide from the atmosphere and storing it in a safer place, and Solar Radiation Management technologies (SRM) which seek to reduce the amount of sunlight reaching the planet (that is to reduce the greenhouse gas trapped in the atmosphere) (Source: Hamilton, 2013: 1).

technocratic scientific-based modes of decision-making and governance. That is, they aim to overcome politics in general and democratic institutions in particular. All of them, ecomodernists, techno-postmodernists and hyper-moderns conceive of the concept of 'Anthropocene' as an ideological emblem of the new power humans have acquired over nature. Indeed, having completed the dream of modernity, humankind is said to have become the *real* master and possessor of nature. This hubristic[19] discourse attempts at breaking economic, legal, and political protections designed to protect the environment from further capitalist exploitation and commodification. If nature is in humans' hands, or better, if nature does not exist anymore but has been replaced by sophisticated hybrid socio-natural arrangements, then the door is open to endless artificialisation (the replacement of natural capital or terraformation) and destruction (renamed 'modification') of the environment. The green capitalist ecomodernist story is closing nature down. The present dissertation seeks to critically uncover the 'ecocidal' project[20] lying at the core of the new environmentalist ideology as well as the Orwellian dystopian features of a rhetoric which under the pretence of achieving 'sustainability' brings the neoliberal agenda to its completion. This work will pay particular attention to the way economic and instrumental valuations have become so predominant that they have erased any other substantial goal from public discourses. It will particularly address, through the theorising of green republicanism, a system which despises political action and considers the economy as the core element of politics and policy-making processes.

[19] *Hubris* is a word used in Ancient Greece, meaning excessive self-confidence and pride toward the gods, leading to the downfall (destruction) or the nemesis (justice).

[20] Biologist Arthur Galston was the first one to describe massive damage and destruction of ecosystems as an 'ecocide' in a conference titled 'War Crimes and the American Conscience' (Washington, 1970). The concept of 'ecocide' is today resumed by the ecological Lawyer Polly Higgins in order to advance the international crime of ecocide (that is the ecosystem destruction caused by corporate and state action). See for instance Higgins (2012).

As Curry points out, 'behind the processes driving these human-caused changes is pathological ethics' (2011: 19), that is a flawed conception of the way people should interact with each other and the natural world. What is at stake in the ecological predicament, indeed, is a question of value (axiology), or the spectrum of what is currently valued and how it is valued. It is therefore at the very heart of our philosophy that changes must occur. The difficulty environmentalists face when trying to address ecological issues is to untangle themselves from the way of thinking that is responsible for the distress itself. This is why Leopold observed that 'no important change in ethics was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions' (2001[1949]: 174). Indeed, the crisis is so pervasive that it has invaded all aspects of our cultural, intellectual, and moral life. We may, therefore, have to turn toward new resources to deal with the predicament, such as counter-cultural movements, alternative narratives, and degrowth proposals. As Barry thoroughly showed throughout his theoretical corpus, growth ideology is a normative commitment of neoclassical economics. It has become a core-state and dominant 'social imaginary' constructed by the elites to 'serve the interests of a minority in society rather than being of benefit to everyone' (Barry, 2017). Indeed, undifferentiated economic growth is one of these significant normative value-judgements by which the powerful have shaped modernity. The mythic ideology of growth (in contrast to human and nonhuman well-being and flourishing) is discussed later in Chapter 5.

It is now widely recognised that productivist Western societies and affluent overconsumption, 'that is, well beyond what is necessary for a mentally, physically, emotionally and spiritually healthy life' (Curry, 2011: 21) have brought the ecological predicament upon the rest of the world through the relentless pursuit of economic growth and material abundance. This profit-oriented mind-set has entailed an unprecedented burning of fossil fuels and the ruthless exploitation of natural resources and ecosystems. Global corporate capitalism has also largely contributed to expanding the biophobic mind-set which reduces nature to a 'storehouse' and natural

entities to mere 'resources' which can be exploited, bought and sold on markets. The industrial revolution and growth-based financial/economic systems have pushed the anthropocentric worldview of modern Western societies to the extreme. Nature is regarded as a storehouse, an inert provider of 'resources' that humans can manipulate at their discretion and even replace as demonstrated by ecomodernist arguments for 'strong substitutability' of human-made for natural 'capital' (See Section 5.2). Our culture has become quantitative and reductionist: we have come to the point where we only value what can be measured and exchanged in monetary transactions, devaluing by doing so all the free exchanges, relational and spiritual values on which all civilisations have been built. From the ecological point of view, we have come to 'think that mountains, forests, and the great wild oceans are all dead things that are free to exploit as we wish without let or hindrance' (Harding, 2011: 79).

Against that outlook, green republicanism re-embeds humans and economics in the natural world (Chapters 4 and 5). Contrary to the strong version of anthropocentrism which considers humans as superior to/independent from nature, the green republican perspective recognises humanity as being plainly part of the natural world (Chapter 4). Against the hyper-modern separation of economy from ecology, it aims at restoring the ties between human societies and their environments, that is at repairing the social and ecological relationships by increasing appreciation, care, and respect for biological systems that have supported life since millennia as well as for the non-human living beings with whom we share our world. For this purpose, Green republicanism opposes the utilitarian and reductionist conception of economic liberalism that has reduced nature to an adjustment variable with minor importance (Chapter 5). This thesis calls in general for new ways of inhabiting the world, for the creation of sustainable and resilient societies that will implement the transformational changes required by the advent of the Anthropocene, and more particularly for an economy resituated *within* (instead of *above*) ecology and social community as shown in the following figure:

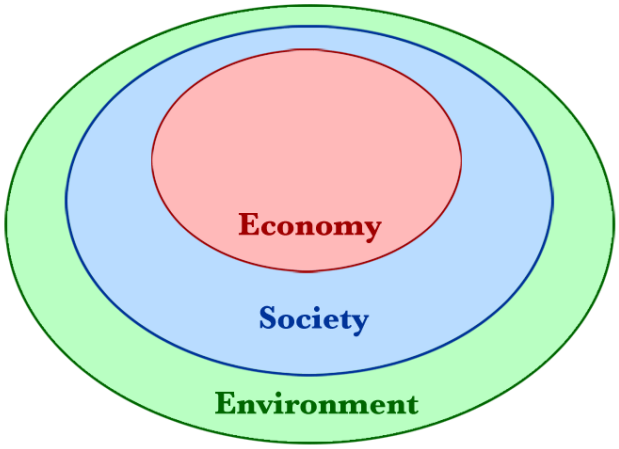

Figure 1.2: The Three Nested Systems of Sustainability (Source: Adams, 2006:2)

The time has come for new ideas, and indeed there is almost nothing stronger than ideas whose time has come. This thesis will address the main neoliberal prejudices and normative options described above and theorise new ideas and concepts linked to the purpose of sustainability and flourishing for human and non-human communities. Paradigm shifts often come with resistance. The change from capitalist neoliberal anthropocentric economics focused on material expansionism, consumerism, individualism, and competition to a post-capitalist, post-liberal and post-anthropocentric political economy will indeed not be straightforward. Green republican political theory shows the way out of the self-destructive modernist pattern built on the denial of limits (as far as death, nature, and wants are concerned). The change of paradigm requires the rise of a new post-anthropocentric *postmodernity* which is not anti-modern, anti-humanist, anti-liberal, anti-enlightenment, or anti-markets as often claimed, but that identifies and overcomes modernity's erroneous beliefs and values which are the actual cause of the environmental crisis. The word 'postmodern' here refers to the overcoming of modernity's destructive beliefs and core values such as the denial of limits, instrumental rationality, the mastery of nature objective, blissful techno-optimism, growth ideology, the excessive focus on materialism and individualism, arrogant anthropocentrism, the destruction of

communities and traditions (even in their most valuable dimensions), as well as the reductionist conception of science that still dominates the intelligentsia landscape. This new green republican postmodernity (see Appendix A) keeps the positive values of modernity, such as the possibility to generate valid claims (against nihilistic relativism), humanism (against excessive post/transhumanist ideas which blur the frontiers between humans and machines), and emancipation goals through education and democratic institutions (against techno-postmodern tendencies to promote experts' governance). Our republican green postmodernity is, therefore, an *Aufhebung* of modernity and deconstructive postmodernism[21], a continuation of reflexive modernity with normative and political goals. In brief, this work contends a progressive, life-affirming, and emancipatory republican postmodernity[22].

Within this green republican outlook, the vision of the earth as a disposable storehouse that can be used up and destroyed is replaced by the concept of a fragile self-regulating system that requires care and respect. Green republicanism argues for the right of non-human living beings on earth to exist, flourish, be considered as ends in themselves, and possess intrinsic value. It recognises as fundamental humanity's nonmaterial, recreational or spiritual needs and undertakes the ontological limits of the human condition (such as death, fragility, dependency, and vulnerability). It thus offers the possibility for communities to build on and acknowledge these existentially troubling aspects of existence rather than systematically 'sequestering' or hiding them away in the name of a narrative that posits humanity as 'beyond nature' or 'post-natural[23].

[21] Postmodernism here does not refer exclusively to styles or movements within the domain of arts (i.e. aesthetic reflexion) but like the word 'postmodernity', expresses new directions in social and political developments.

[22] The thesis does not analyse in detail this postmodern view but its core values follow as a consequence from the green republican account. A comparison between conceptions of Modernity, theories of Postmodernity and Green Republican Postmodernity is given in Appendix A.

[23] See on this issue, Barry, (2012: 39sq.).

Green republican theory intends to offer a concrete and 'back-down-to earth' account of politics, that is to 'de-sequester' and bring to the foreground existential and fundamental issues such as death, sickness, old age, body (corporeality), place embodiment, humans' dependency on nature and gendered reproductive work in the private place. It fosters green political practices that reinstate awareness about humans' dependencies on internal and external nature, such as exemplified in Grassroots movements (See Appendix C). It draws from these ineliminable limitations of human existence a set of institutions that will provide security and concrete possibilities to flourish. Other powerful ideas are associated with the new green republican worldview, such as the fact that a too high amount and degree of inequalities is both ecologically and socially unsustainable, and that basic human and social rights must be constitutionally protected rather than abandoned to the neoliberal state or globalised free market. Green republicanism also supports that humans are not adjustment lines in balance sheets but the main wealth and source of creativity of nations. In other words, it opposes the instrumental neoliberal outlook that reduces everything to commodities. There is a reason to wager that a great opposition to the green republican transformation of societies to create a more sustainable and just world, will come from wealthy elites. As Harvey notes, '[t]he capitalist class will never willingly surrender its power. It will have to be dispossessed' (2011: 260). But resistance might also come from ordinary people who have lost the ability to connect to natural environments and social communities but also to determine freely (autonomously) their life. This is why, in addition to economic, legal and political dimensions of the ecological crisis, educational and cultural aspects are fundamental in order to force consumerism into retreat. Indeed, there is little hope that things improve without a '*culture of nature'* (Curry: 2011: 167) that would address our value-systems, beliefs and consumption patterns. As Curry contends, the public must be helped 'to imagine plausible cultural and social life-narratives which include [the ecocentric dimension]' (2011: 160). Lear (2006) calls for the creation of new empowering narratives to create new frames of meaning and cultural identity to cope

with the situation as well as new forms of 'subjectivities'. This involves a new green governmentality, 'a reshaping of what sort of people people are' (Barry, 2012: 57). This means challenging the neoliberal ideology not only outside but also within institutions such as media, schools and universities, which essentially act as cultural transmission belts for the world capitalist market. From the educational point of view, the predominant entrepreneurial corporate and managerial curriculum prompted by the state and universities ('academic capitalism') must be challenged and replaced by new learning processes, mindful of ecological, civic and moral dimensions of life[24]. As Curry (2011) and Barry (2012) show, the cultural change needed requires the development of a green citizenship (Chapter 6).

Especially, green republicanism intends to undermine the ideology of 'growthmania' found across political, economic and cultural spheres. This transformation will be carried through the renewal of democratic institutions and public education as well as through the new powers devoted to the states, which will no longer be 'neoliberal states', supportive of the interests of private markets but instead sites of resistance to growth-based policies, and the reduction of citizenship to consumerism. This social and political transformation will be supported by an active civil society committed to the enforcement of socially and ecologically just societies, that is by the 'repoliticization of advanced industrial society' (Kassiola, 1990: title). This work does not suggest that such a change, especially within a globalised world, will be easy to implement: it will need a great deal of political leadership, active citizenship and civil courage, a political reawakening of Western people, a shared willingness and commitment to political struggle. Given the inertia of the global

[24] Spretnak (2001) analyses how the elimination of humanities from high school's curriculum has eroded the sensitivity to morality and reduced the child's potential to the functional qualifications needed by the hypermodern economy. André Gorz shares this appalling description of our school institutions whose primary unacknowledged goal 'is to provide industry, commerce the established professions, and the state with workers, consumers, patients and clients willing to accept the role assigned to them' (1980: 35). In Barry's words, we are producing 'technically competent barbarians' (2012: 125 sq.).

system and the powerful reactionary forces at stake (although they call themselves 'progressive'), the chances of success are slight. However, following the doctrine of 'Active hope', which resides in the doing, rather than in the hoping, one might agree that courage 'does not need to hope to undertake and to succeed to persevere'. Whoever lives in times of great struggle must realise 'this intimate alliance…of pessimism of the intelligence, which penetrates any illusion, and optimism of the will' (Rolland, 1920: n.p.). That is probably from the French writer that the Italian revolutionary Gramsci used to construct his famous motto of 'pessimism of the intellect; optimism of the will'. The kind of courage needed to build more sustainable societies is intimately connected to creativity and the avoidance of despair. Beyond optimism and pessimism, this position can also be defined as 'practical idealism' or 'realist utopianism', that is a position committed to a *possibilist* narrative (Curry, 2011: 166).

Among the different narratives in competition, the neoliberal business-as-usual scenario according to which economic growth is regarded as essential for collective prosperity is the most foreign to green republicanism. For republicans, what is most needed is to connect all the positive changes that converge toward ecological sustainability and social justice in a green political republican movement. Indeed, as Barry (2008) notes, what will be discussed is not environmentalism alone but 'green politics' (p.3). Green republicanism is a new approach that brings together traditional green politics, elements of socialism and civic republicanism. This thesis will unpack the cultural, economic and institutional key-features of the new regime. It will show how green republicanism supports the transition to post-carbon society (regarding production and consumption), post-liberal political institutions, post-growth/degrowth economic systems, and a post-anthropocentric ethical and metaphysical worldview. Constitutionalism will also play a particular role as a way of securing green objectives within renewed democratic deliberative and participatory institutions (Section 6.4).

Against neoliberalism, green republicanism offers a humane and humanistic form of politics, which takes as a starting point the fact that vulnerability, fragility, limits, and dependence are ineliminable parts of existence. It offers a social and communitarian counter-narrative to the 'autonomous norms' of neoliberal societies which regard individuals as 'unencumbered', self-sustained, and devoid of attachments. Against the (neo)liberal conception of (un)freedom, it presents an embodied and political understanding of autonomy, based on enforceable rights and concrete forms of existential security (within which economic and ecological security are located). Against the exploitative social and material relations unleashed by advanced capitalism, green republicanism offers arguments for shared solidarity between human beings (different generations included), but also with our non-human companions on this planet. Against the despotic logic of competition, pillaging, and appropriation, which is that of capitalism, it defends a democratic conception of cooperation commonality, and a sense of social and ecological community. If it takes the abstract, unrooted, and demoralised *homo oeconomicus* or *homo consumericus* as a practical point of departure, green republicanism does not consider this current state of human subjectivity as an ultimate anthropological truth. On the contrary, it believes in the concrete, embodied and embedded human subject capable of empathy and willing to resist the commodification of the world.

Green republicanism intends to make people accept and protect the fragility of living beings and ecosystems, and defend the possibility of a decent, resilient, and livable common world against 'the mythic and ecologically ignorant character of modern economics [and politics]' (Barry, 2012: 38). As Werner shows in his provocative communication, 'Is Earth F**ked?' given at the American Geophysical Union meeting of 2012, the only dynamic offering some hope with regards to replying to this question, is the resistance of 'people or groups of people' who 'adopt a certain set of dynamics that does not fit within the capitalist culture' (quoted in Klein, 2014: 450). Indeed, political and individual resistance taken from outside the dominant

culture is the only way 'to slow down an economic machine that is careening out of control' (ibid.). Green republicanism intends to rely on all existing movements of resistance against global capitalism to develop its practical implications. It is, therefore, an all-encompassing political theory aiming to unite different ecological political theories and thinkers: ecosocialism and eco-communitarianism[25], proponents of radical democracy (who can buy into its participative and direct democratic aspirations), social green and modern liberalism as opposed to 'classical liberalism'[26] – that is those who want to return to the roots of political liberalism (such as embodied for instance by John Stuart Mill) – genuine republicans who believe in the power of institutions and civic republicanism to oppose political corruption and the privatisation of the commons, and even social ecology and libertarian municipalism (Murray Bookchin), which advocate the decentralisation and democratisation of the state; that is a participatory politics to achieve decentralistic goals. For Bookchin, as for Green republicanism, democratic politics must be educative: it is not only a set of formal procedures but 'a curriculum for creating real citizenship' which 'presupposes a sense of civic virtue, a vital community life and a rich, creative and supportive collectivity' (1985: 8).

1.4. Mapping of key terms

This work will use a certain number of concepts that deserve to be clarified in advance for the intelligibility of the subject. For instance, the word 'neoliberalism' will be abundantly deployed in this thesis in relation to a new evolution of capitalism that has been globalized since the 1970s in the form of an active promotion of market exchanges by the state. It is difficult to define neoliberalism as a coherent ideology or

[25] Mouffe (1995), for instance, places communitarianism alongside the Republican camp through the notions of civic virtue, common good, and community.

[26] For the distinction between 'modern' and 'classical' types of liberalism, see Ryan (1993), de Shalit (1997).

as a coherent set of economic practices but the common point of all neoliberal policies is the relocation of power from political instances to economic processes, that is the transfer of the social and political authority from the state to the markets. In the neoliberal ideology, the role of governments is reduced to ensuring the proper functioning of markets, i.e. to creating an institutional framework appropriate to the preservation of strong private property rights, so called 'free markets', 'free trade' and big business's interests.

Neoliberalism is, in the first instance, a theory of political economy that rehabilitates and radicalises laissez-faire ideology, and by doing so, closes down the concept of welfare capitalism (that is a type of capitalism born in the 19th century that included social welfare policies and that culminated with the modern concept of Welfare State after WWII). It can be conceptually understood as the programmed dismantlement of regulations, public goods, social provision and redistributive institutions. As an economic policy, neoliberalism means '[a] purely negative 'interventionism… which is nothing more than the state's organization of its own retreat' (Dardot & Laval, 2014: 2). As a normative system, it is the capacity to direct from within how public and private sectors should work, as well as to organise all aspects of existence in economic terms. In this sense, as Dardot and Laval point out, neoliberalism 'is not merely destructive of rules, institutions and rights' but is also '*productive* of certain kinds of social relations, certain ways of living, certain subjectivities. In other words, at stake in neoliberalism is nothing less than, the *form of our existence'* (ibid: 3; original emphasis). Indeed, neoliberalism is not only a political theory or an economic system: it is a new mode of governance ('governementality'[27]), a new biopolitics that colonises and controls more and more all aspects of life; it is an authoritative ideology based on the control of information and communication technologies that pervades and perverts the social and ethical foundations of our

[27] See Foucault (1990, 2008).

societies through the enforcement of market-based competition, commercial deregulated 'freedom', a consumer mind-set, and possessive individualism in all arenas of life. Because of its ideological success, neoliberalism has not only created large-scale social, economic and political disasters (social dismantling, economic crisis and political extremisms): it has also failed spectacularly to protect the natural world. In effect, as Section 2.4 shows, pricing, valuation, monetisation, financialisation of nature (from species to atmosphere, from agricultural seeds to sources of water, from genes to molecules, etc.), are all mechanisms that have dramatically worsened the environmental predicament and altered the defence of the earth conceived as a common good[28].

The word 'neo-liberalism' suggests its own definition as being a revival of liberalism, or more exactly, of classical liberalism which, in the tradition of John Locke and Adam Smith advocates the minimal interference of governments in market economies. Milton Friedman, Friedrich Hayek and Ludwig von Mises in the 20th century have taken over this theory by urging a systematic rejection of governmental intervention. In classical liberalism, the state must be considered as a 'night-watchman state' whose sole purpose is to ensure the public order. In this sense, classical liberalism is aligned with 'economic liberalism' and the tendency to favour laissez-faire economic policies over state intervention. Although the political project at the core of classical liberalism differs in extent and quality (especially in its early version) from the global anti-democratic project embodied by neo-liberalism, nevertheless in practice classical liberalism has provided much of the intellectual and political justification for neoliberalism.

It is with the economic liberal and neoliberal 'free-market' views intrinsically tied to capitalism that this thesis takes issue. By contrast, it claims its proximity with

[28] Markets value nature only insofar as nature can be divided into transferable parts (barrels of oil, acres of lands, tons of mineral production, etc.), that is in discrete parts. Any part of nature which is not sellable is overlooked by the market and considered as worthless. This is the case of nature as an organic whole or understood in a holistic manner as the *sustainer* of all life.

liberalism understood as a political ideology which is '[f]avourable to constitutional changes and legal or administrative reforms tending in the direction of freedom and democracy' (*Oxford English Dictionary*, 1989). As this works demonstrates, green republicanism forcefully endorses freedom, pluralism and democracy, the primary values of liberalism and claims, along with the tradition of social liberalism (among others, J.S. Mill, T.H. Green, W. Beveridge), that no genuine individual liberty is possible without social and economic protections ('social freedom'). Likewise, as liberal green theorists such as Piers Stephens or Avner de Shalit have demonstrated, no environmental policy worthy of the name can be conducted without regulating economic activities or without restoring an ethical context of politics. This requires us to transcend the state neutrality principle dear to many economic and political liberals.

Liberalism goes in at least two different directions: one that holds a very limited conception of politics which 'amounts to minimal state intervention, opposition to regulation… all of which are antithetical to environmental policies' (De Shalit, 2000: 83). This is the libertarian and neoliberal version of liberalism. Another form of liberalism which claims its proximity to social matters is a 'social liberalism' open to state intervention and not always hostile to advancing certain ideas of the good. This social liberalism includes social classical liberalism (such as the one embodied by J.S Mill) or theories of justice (such as the procedural conception of liberalism embodied by J. Rawls). The table below shows some of the differences and common points between liberal theories and Green republicanism (figure 1.3).

Type of Liberalism	**Common points with Green Republicanism**	**Antagonist points with Green Republicanism**
Libertarianism (classical liberalism)	None	Freedom as non-interference, negative conception of rights, a minimum intervention of the state, a strong neutrality principle, strong emphasis on property rights (possessive individualism), free markets ('invisible hand'); growth-based economy

Neoliberalism	None	Deregulated capitalism supported by the state and aligned with managerial practices; financialisation and the power of technocracy or even the support to authoritarian regimes[29] against democracy; GDP expansion/economic growth, ever-increasing consumption
Procedural liberalism	Defence of representative democracy; basic human rights; equality of rights; freedom of speech, assembly, and association, tolerance for diversity; anti-authoritarianism; institutional and constitutional protections; importance of social justice	Principle of neutrality, that is acceptance of all options, given that they fit into the general procedural framework even if they promote unsustainable and unjust political economies (cf. pursuit of individual or group self-interests against the common good); abstract conception of justice; rights over responsibility and duties; contractual conception that excludes non-human nature; self-interested individualistic preferences (atomism)
Social liberalism	Positive liberty; state intervention; social and embedded conception of freedom; redistribution of wealth and the defence of social goods (cf. also communitarianism).	

Figure 1.3: Some common points and differences between Liberalism and Green Republicanism

This thesis mostly addresses libertarianism and neoliberalism, that is to say, an economically oriented form of liberalism while claiming its proximity to social liberalism. This latter form of liberalism is considered by green republicanism as a sub-tradition belonging to the general republican framework[30]. In the light of the above, green republicanism is post-liberal: '[t]he emancipatory critique of liberalism [does not lead] to an outright rejection of the entire cluster of liberal values…[e]mancipatory political theory is…*post-* rather than *anti-* liberal' (1992: 30; original emphasis)[31]. Green republicanism separates the wheat from the chaff, namely political values and right-based institutions held by social and political liberalism (such as citizens' freedoms, representative democratic governance, equality of rights) from

[29] See current China or Pinochet's regime during the military dictatorship of Chile (1973-1990) that both support(ed) free market modernisation.

[30] As Viroli says, 'from a historical point of view, liberalism owes to classical republicanism its most valid doctrinal principles… From a theoretical point of view, liberalism can be considered an impoverished or incoherent republicanism' (2002 : 61).

[31] For similar views, see Doherty and de Geus (1996), Stephens (1996), Wissenburg (1998), Barry (1999).

the capitalist, market-based organisation of the economy promoted by economic liberals.

Therefore, when this work opposes liberalism, the latter needs to be mostly understood as classical or economic liberalism. However, there are still some core elements of the liberal political theory that green republicanism intends to challenge: for instance (as exemplified in figure 3) the *principle of neutrality* especially defended in procedural liberalism and according to which the state should ethically remain neutral concerning conceptions of the good (privileging the right over the good); the strong *anthropocentric/humanist* features of liberalism[32], especially when non-Individuals are concerned (such as ecosystems) while the green republicanism contended in this thesis sees nature as having intrinsic value. Lastly, green republicanism challenges the conception of *freedom as non-interference* (negative liberty) and considers as insufficient the neo-republican (liberal) definition of freedom as 'non-domination'. For green republicanism, liberty must be defined positively as a set of capabilities guaranteed by a fair access to social provisions and a strong vision of social justice. This means shifting the focus of political theory from mere procedural institutions and abstract issues of 'fairness' to the very concrete mechanisms of social, economic life and structural relations that produce unfairness — what Barry calls '[t]he politics of actually existing unsustainability' (2012).

This thesis strongly opposes economic liberalism in most of its dimensions, sharing on the contrary some common features with procedural liberalism (such as the defence of individual rights and pluralism) as well as common ideals and ideological premises with social classical liberalism (social conception of freedom). However, demonstrating the compatibility of liberal positions with sustainability

[32] A notable exception here is Hailwood (2004) who contends that liberalism must acknowledge the intrinsic value of nature.

practices is not the purpose of this thesis[33]. What might be said in a nutshell is that the rapprochement between green theory and liberalism has at the same time strengthened and weakened the former one: it has strengthened the presence of green ideas on the political scene while undermining the radicality of their content. Indeed, the liberal re-orientation of green political theory has led to the acceptation of capitalism as the only political economy realistic option (a position shared by most of the Green Parties[34]), to the waiver of non-anthropocentric positions and the defence of reformist positions that do not tackle the roots of the ecological crisis (for instance growth ideology) and dramatically hinder other greener alternatives to rise. Ecological modernisation and today ecomodernism are examples of light-green theories and policies that accommodate the growth-based business-as-usual scenario and thus worsen the ecological degradation. Is, indeed, a post-growth/or non-growth orientated liberalism possible? Can current liberalism disentangle itself from free market capitalism? Once more, it is not the goal of this work to answer this contentious question. The current study sees the revival of republicanism in green theory as an opportunity for genuine liberals to re-engage with their republican sensibility, that is the rooting of political theory in the realities of social life and human condition (for instance vulnerability, dependence, limits) — against increasingly abstract models or ideal social constructs. Indeed, green republicanism is an opportunity to revive civic virtues against theories mainly focused on citizens' rights, to emphasise the need for participatory democracy and decentralisation (according to a positive conception of freedom understood as self-government), to deepen the critical stance against capitalism and economic growth and strive for stable and

[33] See on this subject De-Shalit (1995), Wissenburg (1998, 2004), Bell (2002), Hailwood (2004), Barry and Wissenburg (2001), Stephens (2016).

[34] Since the 1980s, many environmental organisations and parties have abandoned their radical positions and adopted reformist policies belonging to the neo-liberal agenda (privatisation, deregulation, etc.). The evolution of *Die Grünen* which was originally on the radical left side of the political map towards social/liberal democracy is an instructive example of this trend.

sustainable societies (See Cannavò, 2016: 72). Green republicanism is an opportunity for green liberals to become more consistent with their sustainability claims.

There are many shades of green in the vast spectrum of ecological theory but the convention is generally to divide green theory into two categories: the 'bright'/'light' or shallow versions of green politics as opposed to dark/deep green theory[35]. As Barry shows, this division can be misleading insofar as it fails to capture the complexity and variety of green thinking. Indeed, an exclusive reliance on one or the other category can lead to 'a one-dimensional and incomplete conception of the green political landscape' (1994: 369). On one side, dark green/deep ecology is usually associated with the metaphysical, moral and cultural dimension of human/social-nature relations: it contends cultural revolutionary approaches and philosophical alternatives to anthropocentrism (such as ecocentrism[36] or egalitarian biocentrism[37]) that challenge the foundations of industrial civilisation and especially the human supremacy on nature. On the other side, 'light'/'bright' and shallow forms of green thought are associated with political and economic reforms that do not address (at least not strongly enough) the cultural capitalist framework, relying upon government legislation and economic incentives to reduce environmental degradation. This thesis stands as a reconciliation —or as an *Aufhebung* (sublation) —of, on the one hand, the moral/philosophical perspective and on the other hand, the economic/political dimension of the ecological predicament. Green republican theory is 'dark green' in the sense that it defends a radical ethical approach ('post-anthropocentrism') opposed

[35] The distinction between '[t]he shallow and the deep… ecology movement' was initially made by Naess (1973).

[36] Ecocentrism is the view that 'sees the ecosphere - comprising all Earth's ecosystems, atmosphere, water, and land - as the matrix which birthed all life and as life's sole source of sustenance. It is a worldview that recognizes intrinsic value in ecosystems and the biological and physical elements that they comprise, as well as the ecological processes that spatially and temporally connect them' (Gray, Whyte, and Curry, 2018: 130). See Section 4.4

[37] Egalitarian biocentrism suggests that all living organisms are equal moral subjects and have a good on their own. See Taylor (1986). As will show Section 4.4, this thesis excludes the theory of bio-egalitarianism.

to human arrogance towards the non-human world (human chauvinism) as well as institutional, economic and political innovations that combat the current dominant capitalist structures (post-growth/degrowth). At the same time, it differs from deep/dark green ecology in that it accommodates ecocentric claims *as well as* a 'weak' form of anthropocentrism (that is an anthropocentrism that promotes a 'good use of nature'). Weak anthropocentrism suggests that anthropocentrism 'is an ineliminable aspect of *any* political theory, and that the instrumental valuation and use of the non-human world is part of the 'human condition' (Barry, 1994: 386). It is therefore an anthropogenic and weakly anthropocentric value theory. For instance, the weak version of anthropocentrism defended by Barry (1999) contends that:

1) the attribution of value is anthropogenic (or 'human-based') - while ecocentrism states that value can be *found* in nature;

But more attuned to ecocentric positions, it also points out that:

2) nature must be preserved as much as possible

3) non instrumental, moderately instrumental, non-material (aesthetic, spiritual, recreational, etc.) relationships to nature must be fostered.

On the spectrum which divides anthropocentrism and ecocentrism, Barry's anthropocentrism[38] is very close to ecocentric positions. Reformulating the purpose of deep ecology, Barry states 'that the deep ecology argument is against an uncaring, economic, narrow-minded humanism rather than against humanism itself' (Barry, 1999: 31). Therefore, the practical implications of a reflexive humanism can be compatible with much of what humanist ecocentrists defend. As Curry point out, '[a]lthough it falls short of ecocentrism, ecological stewardship with its roots in religion, and informed by the humility as well as knowledge of genuine science, has

[38] The concept of 'weak anthropocentrism' can be originally found in Norton (1984). Other developments of this notion can be found in Norton (1991) and Hayward (1997). The common points and differences between ecocentrism and weak anthropocentrism as well as the characteristics of a post-anthropocentric perspective are developed in section 4.2.

much to contribute to the kind of outcomes we seek' (2007: 9; n.4)[39]. Because they follow modern science and the increasing awareness of human ignorance concerning the complexity of ecosystems (cf. Section 2.2), or in other words, because they know that 'the ecosystems upon which all life is dependent are beyond human comprehension' (Barry, 1999: 31) and that, therefore, the idea that humans could control nature is 'a dangerous assumption' (ibid.), enlightened anthropocentrists can promote a worldview which see humans not only as *apart (from*) but also as *a part of* nature, honouring therefore 'the spirit of deep ecology' (ibid.). When the arrogance of anthropocentrism is dispelled, ecocentrism and anthropocentrism can converge in defending nature's intrinsic and weakly instrumental value. Weak anthropocentrists encourage what can be described as a decent use[40] - against abuse - of nature. If on the one hand ecocentrists contend that nature has value in itself and does not need to serve humans' purposes to be defended, on the other hand, coherent anthropocentrists consider that 'a major reason for preserving ecosystems is to preserve them as the life-support systems of humans and other species' (Hayward, 1997: 60). In the end, 'enlightened human self-interests' follow the ecocentric philosophical call for the maximum preservation/protection/restauration of ecosystems possible. Weak anthropocentrism suggests that one can be human-centered without being focused only on human self-interest. Barry calls this argument 'reflexive anthropocentrism', a concept flexible enough 'to accommodate the normative thrust of the ecocentric concern with protecting the interests of the non-

[39] Curry also acknowledges that what he calls a 'light green ethics' would be possible if it would include: 1) A very strong precautionary principle 2) a definition of sustainability that would accept only practices that are, in principle, *indefinitely* sustainable 3) 'a conviction that as much rather than as little as possible of nature should be preserved intact' (2011 : 62). John Barry would probably agree with those three points.

[40] Barry defends an ethics of use or a form of 'weak anthropocentrism' (1999: 60) according to which 'human interests are a necessary but not sufficient condition for the justification of human-nature relations' (1999: 59). This weak form of anthropocentrism neither assumes some objectively superior place for humanity nor asserts that nature is valueless, although it remains a useful provider of resources and services.

human world' (Barry 1999, 39). This weak conception of anthropocentrism derives from the need, also advocated by Curry, for a strong precautionary principle 'that is, acting cautiously, on the assumption that our knowledge of the effects of our actions is always exceeded by our ignorance' (Curry, 2011: 62). As Eckersley says, an ecocentric philosophical orientation is probably the most promising and emancipatory approach in political green theory (1992: 27). However, the fact remains that in the fight for earth which is currently raging, all men and women of good will are welcome. The green republicanism contended in this thesis aims at bringing together forces that coherently and sincerely struggle for *real* and *concrete* sustainability rather than at separating them. This explains why the normative metaphysical and ethical theory proposed is this work is rather *post*-anthropocentric than *anti*-anthropocentric, and the reason why the political and economic positions defended in the thesis are *post*- rather than *anti*- liberal and *post*-growth oriented rather than opposing growth in general — progressive civilisational sectors such as education, care, nature's protection, etc. needing to grow. The aim of this thesis is indeed to lay the theoretical foundation of a radical green republican platform or a 'movement of the movements' which would gather positions and groups that have in common a sufficient amount of radicality, particularly in their opposition to capitalist ecocidal practices, and in their defence of the intrinsic value of nature[41].

1.5. Outline of the thesis

Chapters 2 and 3 of the thesis deal with the recent emergence of the 'Anthropocene' concept in the field of geology. These two chapters outline an opposition to the dominant and Promethean view of those – especially ecomodernists

[41] To consider the intrinsic value of nature defended by weak anthropocentrists such as Barry requires us to make the difference between the anthropogenic source of value (values are produced by humans) and a strong/arrogant version of anthropocentrism which considers that humans are the *only* valuable entity on earth. See Section 4.3.

– who argue for a 'good Anthropocene'. That is, those who argue that through market-creating innovations and technological solutions (from geoengineering to nanotechnology), social and ecological challenges can become an opportunity for humanity (actually for Westernised people) to re-design the Earth System and move beyond the society/nature binaries. These chapters oppose the arrogant assumptions of enhanced control that ecomodernists defend in their optimistic narrative and the implicit wish to pursue the 'Business-as-usual' scenario of 'growth forever' without taking into account the material conditions upon which the creation of all value depends. Chapter 2 argues that the Anthropocene, rather than being an opportunity to celebrate the power of humans must be regarded as indicating that we have now entered an era of great fragility and vulnerability where humanity is discovering the extent of its non-knowledge and non-mastery. As such, the Anthropocene should be viewed as an age of uncertainties and indeterminacies, which calls for precaution and humility rather than managerial arrogance (Section 2.2). This chapter shows the necessity of 'a critical theory of the Anthropocene' and the production of a theoretical understanding of the historical structures underlying the 'new age of humans'. By doing so, it opposes shallow and technocratic solutions such as geoengineering[42] or the management of 'hybrids' under a neoliberal capitalist regime (Section 2.4) and argues that a politicisation of the debate is necessary to bring the Anthropocene back into democracy. It challenges the conceptualisation of the Anthropocene as being abstractly linked to the emergence of humanity as a whole (the '*Anthropos*') dating back for instance, to the creation of the first settlements or the manipulation of fire; that is a 'species-thinking' which is conducive to the naturalisation and normalisation of the concept and, therefore, to political paralysis and the continuation of the business-as-usual scenario. Contrary to this conception, this chapter links the rise of

[42] See for instance the strong promotion of BECCS (biomass energy carbon capture and storage) considered as the most promising *'negative emission technology'* in the 2015 Paris Agreement. For a critique of the techno-utopian agenda of the COP 21, see Anderson (2015).

the Anthropocene to fossil-fuelled capitalist political economy, and the consumer society created and promoted by capitalism. That explains why the word 'Capitalocene' (Moore 2015) has been chosen to replace that of 'Anthropocene' to emphasise the role of capitalism in the transformations occurring in the biosphere (Section 2.3).

Chapter 3 deepens the analysis of the post(techno)modern narrative on which ecomodernists rely to proclaim 'the end of nature'. It critically assesses its associated worldview of techno-nature assemblages, cyborgs, and 'naturecultures', all neologisms which exemplify the 'death of nature' stated by socio-deconstructivists (Section 3.2). It draws on Adorno's concept of non-identity to propose a critical environmental and political theory that works on the friction between matter and knowledge: that is an ontology that remains non-dualist while acknowledging the agency of nature. Indeed, this thesis contends that to acknowledge the increasing entanglement of nature and culture around us – and inside us – does not require us to abandon the analytic distinction between aspects deriving from human societies (the construction of nature by human labour and technologies) and those arising from nature's 'non-identity' (otherness) (Section 3.4). The affirmative 'identity thinking' characteristic of both hypermodernity and deconstructivist *most*modernism ('nature is dead') is an attempt to reduce the other to the self, the object to its representation, the making to the knowing and, in the capitalistic framework, the particularities of nature to abstract forms of monetary exchange. This tendency represents, therefore, a source of dominating *hubris* (Adorno 1973; Horkheimer and Adorno, 2002), a philosophical anthropocentric fallacy and a justification for destructive practices – particularly well exemplified in ecomodernist techno-optimism and Promethean forms of thinking and acting (Section 3.3). Against this narrative of mastery and appropriation of nature, Chapter 3 shows that nature manifests its agency through disasters and ecological catastrophes which call for a new contract that recognises nature in intersubjective terms, 'not as an enemy to be conquered but as a partner worthy of respect and recognition' (Mortensen, 2003: 180).

Linked to the previous chapter, Chapter 4 advocates a post-anthropocentric outlook, which highlights the importance of cultivating a new culture of 'Biophilia' to replace the Western ideology of appropriation, exploitation, and denial of nature. It offers, therefore, a counter-cultural narrative to the modernist resourcist and instrumentalising conception of nature. According to the outlook defended in this chapter, oceans, mountains, ecosystems, and non-human beings, in general, *also* have values in themselves and not only since they serve humans' purposes (intrinsic value) (Section 4.3). This chapter continues the long-standing ecological critique of arrogant anthropocentrism, an ontological view today confirmed by the place given in the new cosmology of the Anthropocene to the 'Anthropos', seen as the new 'master and creator' of the planet (Section 4.2). The post-anthropocentric view displayed in this chapter does not contradict but rather complements the weak-anthropocentric position mostly defended by green political theorists. Indeed, both share the ethical need for a 'good use' of nature. However, grounding itself on the new field of Earth Jurisprudence, post-anthropocentrism also contends a legal theory which takes into account nature's own interests (inasmuch as we can know them). The emerging Earth-centred legal system which represents a turning point in environmental legal theory will be analysed in Section 4.4.

Chapter 5 criticises the dominant green capitalist economic ideology of 'Toujours Plus' which is stripping the planet of all its resources and wiping out the benefits of the alleged progress of growth (Section 5.1). This chapter examines the concept of 'strong substitutability' put forward by ecomodernists in order to justify the endless capitalist colonisation of the planet and opposes this idea with the notion of 'strong sustainability' as promoted by green republicanism (Section 5.2). It shows why the relative decoupling advocated by ecomodernists does not entail the absolute decoupling that is necessary to tackle the ecological crisis (Section 5.3). It establishes the need for a shift in economic theory toward post-growth/degrowth models which contend a differentiated account of growth structured around the criteria of collective

flourishing and ecological sustainability (Section 5.4). It also puts forward the necessity to enforce regulations designed to distinguish 'good' and 'bad' consumption and to challenge high carbon lifestyles and consumerist attitudes. In spite of an ecologically constraining framework, green republicanism endorses the diversity of lifestyles as long as they are committed to social-ecological responsibilities toward the humans, non-humans, and their descendants, and as long as individuals' way of living remains in the ecological boundaries set up by planetary boundaries. In order to implement the transition towards low carbon-economies, this thesis advocates a transition to an economy which operates within ecological limits and focuses on the needs for state policies to trigger a civilisational change towards frugality, solidarity, environmental consciousness, attentiveness (ecological responsibility), and responsible consumption.

Chapter 6 examines the central elements of the new green and social republican contract, that is a conception of liberty as self-determination opposed to consumer freedom (Section 6.2), a democratic empowerment of the people which will offer citizens the possibility of more extensive and active participation in the decision-making processes or in other words, a greater democratic involvement through an 'agonistic' conception of democracy (Section 6.3). Green republicanism relies on a proactive state that ensures ecological and economic security for its citizens and fosters a culture of obligation towards the most vulnerable and the future generations (as well as institutionalising such obligations within the state system). A green republic state regulates private corporations and takes institutional measures to cultivate active and ecological citizenship, civic virtues and critical thinking. Such a green state would also implement measures to prevent significant inequalities of wealth among the population. Governmental action will be framed by a binding constitution which will entrench the ground rules and the mapping of the major goals of the green constitutional and republican regime (Section 6.4). The green republican constitutionalism proposed here will protect ecosystems constitutionally, taking on the collective responsibility for preserving natural life-support systems, keeping

climate change within the safest limits possible (the objective of 2° being out of reach), while ensuring the effectiveness of democratic processes. It will implement the transition to low-carbon post-growth societies, and ensure the exit of consumer societies from their dependency on unsustainable sources of energy such as nuclear power or fossil-fuels. It will work on the needed economic, social and ecological transformation of societies at the local, national and international level by exerting pressure on international institutions, supporting decentralisation, and engaging in worldwide cooperation. More generally, as this chapter argues, green republicanism aims at re-embedding human life in a more significant socio-political and ecological community and, against the abstractions conveyed by liberalism, at re-embodying socio-economic theories in concrete sustainable experiences of life.

Chapter 2

A Critical Examination of the Naturalistic Narrative of the Anthropocene

2.1. Introduction

This chapter seeks to critically address the concept of Anthropocene which has recently appeared in the fields of the natural and the social sciences, and the humanities. The new 'age of human' is unapologetically defined by some earth-scientists, neogreens, and other Anthropocene cheerleaders[43] as a period in which humankind can aspire to manage the planet's future and to 'take hold of the tiller of creation'. Contrary to this view, this thesis argues, building on sciences which study complex systems (postnormal sciences, ESS, etc.), that the Anthropocene is an era of significant indeterminacy and uncertainty or, in other words, a stormy time of

[43] The individuals and groups identified under the label 'Neo Greens' (but also 'Pragmatic Environmentalists', New Conservationists', 'Green Postmodernists') specifically designate this new kind of Prometheans who oppose the discourse of environmental limits, believe that environmental issues can be solved by high-technology and large-scale geoengineering, developed and deployed by governments as well as markets. They also support nuclear power as a 'sustainable' source of energy. The notion of 'Anthropocene boosters' also covers the scientists, such as Paul Crutzen or Will Steffen who optimistically – or not – praise geoengineering and large-scale technologies as a new efficient way to 'manage' the earth. All these discourses have in common to be driven by an unreflexive Hubris.

'impotent power', which calls for prudence and precaution and a change of orientation in our species' relationship with nature, or in other terms, in the way we inhabit the world (Section 2.2). The 'Anthropocene boosters' present the new geological era as being caused by an undifferentiated, ahistorical, universal *Anthropos* who is alleged to be responsible for the ecological predicament and equally in charge of planetary management. Against this view, Section 2.3 suggests that the perpetrator of the environmental devastation in the Capitalocene[44] era is rather the consumer subject of Western liberal societies and, more especially, the actors who have benefited and still benefit from the transfer of wealth from natural ecosystems to capitalist growth-oriented institutions. Against the dominant apolitical narrative which presents the Anthropocene as the product of natural evolution (whether it be the manipulation of fire or the evolutionary process presented in the Niche Construction Theory or 'Anthroecology'[45]), this section seeks to clarify historical responsibilities and unmask the techno-managerial strategies in play in the 'good Anthropocene' scenario. The last part of the chapter analyses the role of geoengineering in the dominant narrative of the Anthropocene. Indeed, the large-scale technological 'fixes' proposed as much by some Promethean earth-scientists in view of the urgency of the situation as by ecomodernists who see those innovations as profitable sources of investments, are a way to continue the 'business-as-usual' scenario while putting humanity at risk. This thesis demonstrates that the Anthropocene is being seized as an opportunity for neoliberals and proponents of ecological modernisation to offer more market-based solutions: these are the very same 'solutions' which have exacerbated the environmental crisis. Contrary to the

[44] Although popularised by Moore (2016), the argument in favour of the 'Capitalocene' was first made in Smith (1984) where he suggested that capitalism has long been involved in 'making' natures through technologies, labour and processes of accumulation.

[45] Anthroecology Theory explains how '[h]uman societies have been transforming Earth's ecology *for millennia*' (Ellis, 2015: n.p.; emphasis added). For arguments in favour of the 'Niche Construction Theory', see Trachtenberg (2016).

reckless proposals of economic and technological management offered by the new 'planetary stewards', this chapter suggests that the Anthropocene scientific imaginary order, burdened with doubts, uncertainty, and unpredictability rather calls for precaution and humility than for new Promethean attempts to 'control' and 'manage' the planet.

2.2. A New 'Age of Humans'? Uncertainties and Indeterminacy in Post-Normal Time

The sub-commission on Quaternary Stratigraphy (SQS) is a constituent body of the International Commission on Stratigraphy (ICS)[46], the largest scientific organisation within the International Union of Geological Science. This sub-commission, ultimately responsible for identifying geological epochs, established in 2009 an Anthropocene Working Group to assemble and assess evidence for a possible new – and still in the making – geological era called the 'Anthropocene'. This neologism is derived from the ancient Greek '*Anthropos*' ('human') and '*kainos*' ('new')[47]. It was first proposed by the Dutch Chemistry Nobel Prize winner Paul Crutzen and by the American geobiologist Eugene Stoermer (2000) before being finally popularised by Crutzen himself in an article published in the prestigious American scientific journal *Nature* (2002). If the International Commission on Stratigraphy endorses the Anthropocene as a new geological era[48] it will mean the end of the Holocene; that is of an extraordinary stable geological interglacial period that

[46] Stratigraphy is '[t]he branch of geology concerned with the order and relative position of strata and their relationship to the geological timescale (source: Oxford Dictionary).

[47] We find antecedents of that notion in concepts such as Stoppani's 'anthropozoic era' (1873), Marsh's "humanised' geology" (1874), Vernadsky (1924, 1944), Teilhard de Chardin's 'noösphere' (1923), Catton's 'homo colossus' era (1982), or Revkin's 'anthrocene' (1992). For a summary of this history, see Appendix B.

[48] The concept of 'Anthropocene' offers exceptional grounds of dissensus, inside the group discussing it: the current chair of the International Commission on Stratigraphy, Stan Finney, and some senior Quaternary scientists are questioning the scientific legitimacy of the Anthropocene for geology (See Walker et al. 2015, Finney 2014, Finney & Edwards 2016).

lasted over 11,700 years and which allowed the *homo sapiens,* human civilisations and cultures to arise, develop, and thrive on five continents.

The 'Anthropocene' concept was initially launched as a lens for understanding the destructive power of humanity on nature and as a warning concerning the unpredictable, long-lasting, and potentially threatening effects of human action for human and non-human life. As Mitchell (2014: n.p.) says "'Anthropocene" is not just a descriptive term. It is meant to function as a mirror held up to humanity, enabling it to reflect on the long-term damage our species has wrought. So, it should be a valuable concept for anyone interested in critiquing human dominance and its effects'. The concept of 'Anthropocene' underlines, indeed, the fact that technologically *enhanced* human activities have grown to such a scale that they have become significant geological forces competing with other natural processes, such as volcanic phenomena or variations of the Earth's orbit around the sun[49]. This new geological period identifies *human species* as a leading telluric force which is literally 'terra-forming and transforming our home' (Barry, 2016b: 107).

Although initially well-intentioned, this concept is questionable. If the goal is to help us become less self-human-centred and more reflective about the harm we do to the world, if the core idea of this concept is to gain some humility about our place in the universe, is the naming of an entire geological era after ourselves, the best way to achieve it? The contention, of this thesis is that human supremacists and anti-environmentalists have seized the opportunity of this concept as a justification for further environmental destruction. As Mitchell (2014) says, 'the existing concept of the "Anthropocene" magnifies and sometimes even valorises radical anthropocentrism, reverence of human agency and the desire to gain mastery over nature' (n.p.). In other words, the term itself contributes to the problems it is supposed to address. First, it pushes the logic which has created the predicament to

[49] For a definition of the 'Earth System', see Appendix B.

its extreme by suggesting that humans can shape the planet and re-create it in their image. Second, it perpetuates the ontological dichotomy between humans and nature in which human agency is treated as a force acting *upon* rather than *in* or as a part *of* nature (see Chapters 3 and 4). Third, and aside from ontological implications, this concept offers an apolitical and ahistorical account of the ecological crisis by designating an undifferentiated '*Anthropos*' responsible for the large-scales changes that take us outside of the stable Anthropocene (Section 2.3).

The concept of 'Anthropocene' has not only emerged from the field of stratigraphy. It has been popularised by a wide array of disciplines (climatology, atmospheric chemistry, geochemistry, oceanography, ecology, geology, but also sociology, history, geography, politics, philosophy, and so on) which study the earth as a physical and social complex entity. Among them, the Earth System Science (ESS) represents an interdisciplinary field and a complex systems perspective on the earth which aims at providing a large assembling of evidence of human's action on the planet, ranging from rapid rates of species extinction and large-scale shifting of sediment to anthropogenic climate change (Zalasiewicz et al., 2012)[50]. All the scientific findings converge to show that we have entered a new period of the history of our planet. As Crutzen and Steffen put it, 'the earth system is now operating in a no-analogue state' (2003: 253).

From the perspective of the ESS, the earth is indeed going through a huge change, leaving behind us the thousands of years of exceptional stability of climate temperatures and sea levels that characterised the Holocene to enter a new epoch of climate instability, uncertainty, and significant climate related socio-environmental transformations (see for instance Rauser & Geppert, 2016). This approach puts forward processes such as global warming, the disappearance of biodiversity or the prevalence of artificial organic molecules throughout the world that push the Earth

[50] As evidenced in this thesis the field of ESS is not uniform and positions toward the Anthropocene vary from cautious warnings and calls to prudence to Promethean views promoting large-scale technologies (cf. Crutzen and Steffen, for instance).

System towards tipping points at which more or less stable systems will shift to a different state, or be disrupted altogether. As Rees puts it, '[t]he climate system and major ecosystems are approaching tipping points beyond which they may well "flip" into new equilibrium states that might not be compatible with human economic or ecological needs' (2009: 10). The vast amount of persistent organic pollutants (PoPs) released by human activities during the last centuries has led the French biologist Maurice Fontaine to characterize our age as a 'Molysmocène' (1999: 37), an 'age of pollution' (from the Greek '*Molysmo'*, 'pollution'). This appellation makes explicit reference to the many heavy metals, dioxins, pyralenes, plastics and other non-degradable waste of human activity, which have massively invaded the sediment layers. Although the very idea of 'tipping point' stems from the analytical model of systems theory, the ESS approach considers feedback mechanisms inherent in forces that escape our analytical models, and sudden collapse thresholds of ecosystems as carrying unpredictable consequences that will change the conditions of life on Earth. For instance, and as far as anthropogenic climate change is concerned – which is only one element of a bigger story[51] – climatologists suspect the existence of a tipping point (above +2°C) beyond which the earth system will undergo a change towards a new and irremediable climate state. A climate tipping point defines an irreversible change from one stable state to another. The UN's Intergovernmental Panel on Climate Change (IPCC), known for being moderate in its forecasts, warns us that 'climate change is happening now and much faster than anticipated'[52]. It foresees a rise in planet temperature by the end of the 21st century between 1.2°C and 6°C and, if the present tendency is not radically modified ('business-as-usual' scenario), a rise of 8°C to 12°C by 2300. Global warming brings its share of devastating weather

[51] As William Rees says, 'the problem is not only climate change. Humans are acidifying the oceans; deserts are spreading; tropical forests are disappearing; biodiversity is declining; fisheries are collapsing; soils are eroding; aquifers are falling; surface waters are polluted beyond life and use, etc.' (2009: 10).

[52] [Online] https://phys.org/news/2016-09-global-2c-threshold.html

related events (floods, drought, cyclones, heat waves, and so forth), ecocatastrophes and misery affecting both human and non-human life. The new science of the earth system offers a nonlinear view of the future of our planet understood as a complex system, ultimately very vulnerable and unpredictable (fraught with structural indeterminacies).

It contradicts the posture of control and certainty held by present or past scientists and engineers belonging to the unreflexive modernity regime. Aimed at guiding our thinking and acting to cope with those systematic uncertainties (if not comprehensively 'solve' them), a new form of science has emerged: 'science for the post-normal age' (Funtowicz & Ravetz, 1993) that breaks with centuries of triumph and optimism: '[t]he reductionist, analytical worldview which divides system into smaller elements… is being replaced by a systemic, synthetic and humanist approach… Natural systems are recognised as dynamic and complex… The science appropriate to this new condition will be based on the assumptions of unpredictability, incomplete control, and a plurality of legitimate perspectives' (Funtowicz & Ravetz, 1993: 739). In the post-normal age, uncertainty, indeterminacy, complexity, chaos, and limitation of predictions are the 'new' normal state. Traditional answers to problems by a politics 'without nature' and Promethean science and technology, but also 'business-as-usual' modes of thinking and doing (e.g. carboniferous capitalism) are 'now dangerously obsolete… [they are] an invitation to impending catastrophe' (Sardar, 2010: 441). Modern science's key concepts such as linearity or determinism are no longer applicable or if applied, invite risk and danger (see Capra 1983, 1996; Capra & Luisi, 2014). Science and technology no longer open a path of linear and unidirectional progress, where uncertainties could be managed and mitigated by 'scientific risk assessments'[53]. Humans are no longer able to predict the future ramifications and consequences of their actions. The 'non-mastery' of

[53] As a sign of this structural uncertainty, human-created risks emerging from the repercussions of wholesale industrialisation (nuclear risks, global warming, etc.) are not privately insured or insurable. 'They outlast generations' (Beck, 1992: 22).

human technological mastery leads to the introduction of indeterminacy at the very core of nature, not only because of what is involved in any human action but also because of the growing forms of institutional 'organised irresponsibility' (Beck & Hirohito, 2011) and the rise of a technological power that surpasses humans' perceptive abilities. Contrary to common modern perspectives, ecological risks are not any longer, given their extent, amenable to calculation or rationalisation. Our future is therefore fundamentally marked by the 'unknowable'. To deny this fact by hiding ourselves behind illusions of control only makes it worse (Beck, 1992: 32). Our time is also characterised by a loss of responsibility. When talking of 'organised irresponsibility', Beck describes the institutional failure of modern societies in this way: '[w]e are living in an age where the decision making is the primary background for catastrophes… [m]odernity produces more and more uncontrollable consequences. We have *a system of organised irresponsibility*: nobody really is responsible for those consequences… and this system has to be changed' (Beck & Hirohito, 2011: n.p.; emphasis added).

In light of the above, one could think that the expression 'environmental crisis' does not fully describe the reality of the Anthropocene. Indeed, a crisis is always a transitory state which allows a return to normalcy, while the Anthropocene is 'a point of bifurcation in the history of the earth, life, and humans… a point of no return' (Bonneuil & Fressoz, 2016:19-20). Because it 'overwhelms our cognitive and creative capacities and our representations of the world… The Anthropocene is not just a "world historical" event, but a "world changing" event' (Fremaux & Barry, forthcoming 2018). For Bruno Latour, the Anthropocene is 'the most decisive philosophical, religious, anthropological and… political concept yet produced as an alternative to the very notions of "Modern" and "modernity"' (2013: 77). Indeed, the Anthropocene designates an unprecedented rupture in history that sanctions an evolution of our production and consumption systems which have led us to a dead-

end, actually *the major ecological crisis humanity has been so far going through*[54]. The multiple 'planetary-boundaries' which define the 'safe operating space for humanity' have already been crossed or soon will be, as shows the figure below– which could have disastrous consequences for mankind.

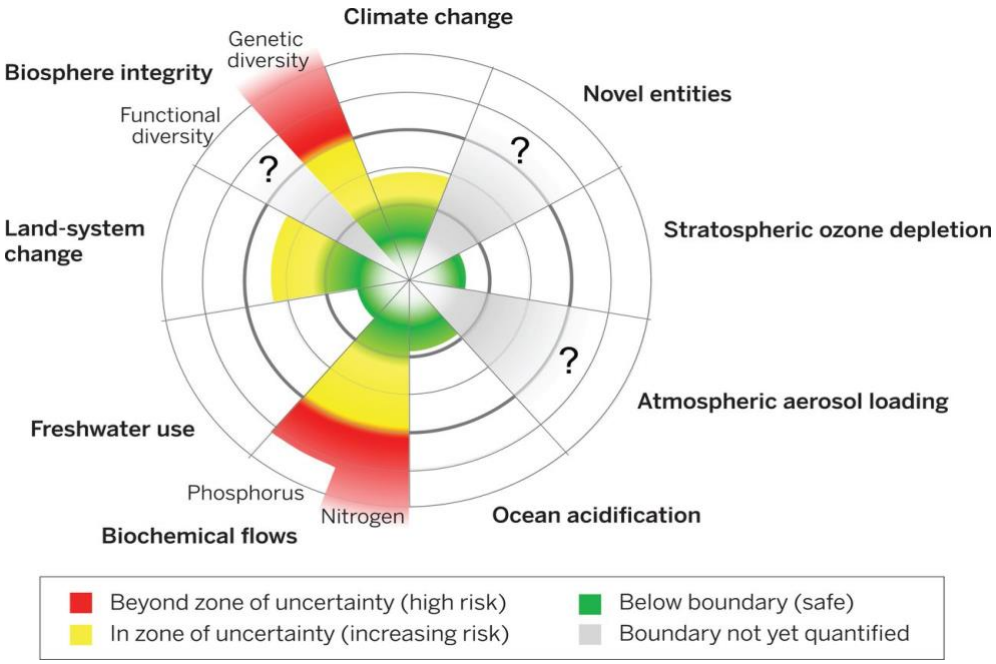

Figure 2.1: Planetary Boundaries (Source: Steffen et al., 2015)

As this figure shows, human activities have already exceeded safe margins concerning the Phosphorus and Nitrogen cycles and Biodiversity loss. The threshold points are very difficult to estimate given the complexity of earth system mechanisms but climate change and land use have already left the space of safe boundaries. That information, even incomplete, is sufficient to urgently call for the implementation of the precautionary principle. Indeed, even if we do not know our exact position

[54] The two historians Bonneuil and Fressoz describe the Anthropocene as a 'Phagocene', or, in other words, as the triumph of Western democracies through the *consumption* of the planet (2016: 148 sq.).

concerning thresholds, the situation is alarming enough to already slow down, and reduce our impact on the planet[55]. As shows this graphics (cf. '?'), global scale thresholds are still unknown concerning the consequences of atmospheric aerosol loading or the contribution of species and organisms to ecosystems' functioning ('functional diversity'). Moreover, this figure was set on the assumption that interactions between different fields are not occurring. However, a given planet boundary may interact in a way that changes the value of others. Such considerations suggest the need for 'extreme caution in approaching or transgressing any individual planetary boundary' (Rockström et al., 2009a: n.p.). The figure below, proposed by Rockström et al. (2009b), shows that the boundary in the system of climate change has already been exceeded (the safe operating zone being defined by the inner green shading):

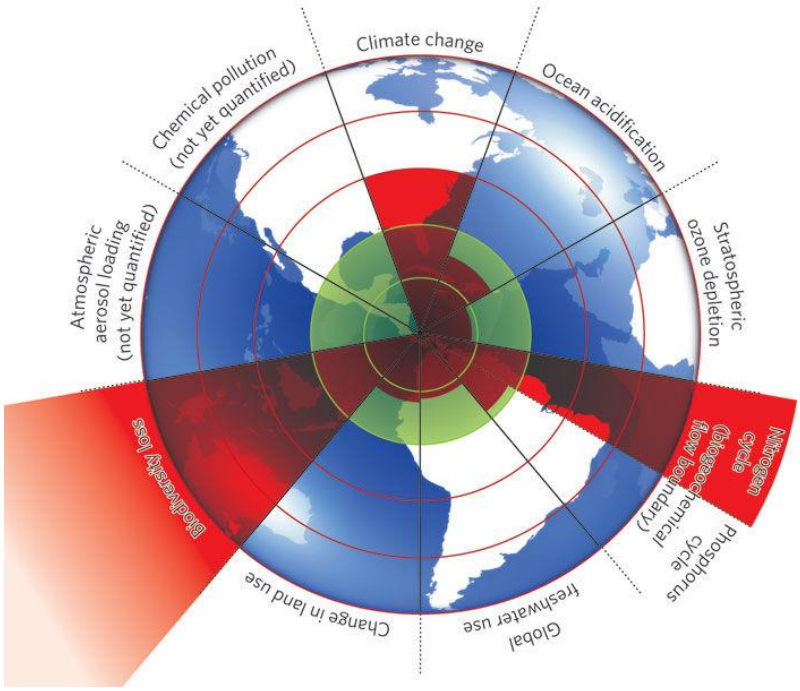

Figure 2.2: A safe operating space for humanity (Source: Röckström et al., 2009b: 472).

[55] On the precautionary principle and its application to green politics see Dobson (2003), O'Riordan and Jordan (1995).

Our planet has known other epochs in its 4.5 billion years of existence. It will continue to exist under the new conditions we have contributed to creating even if the traces of human activities on Earth will remain for thousands or even millions of years in the geological archives of the planet. But as the scientifically collected data demonstrate, the excesses of our urban, industrial, consumerist, chemical and nuclear age could launch the planet into new unknown states that will make it less hospitable to human and non-human forms of life[56].

What this work particularly seeks to underline is the fact that the Anthropocene, considered as an ecological predicament, is rather an era of 'nonknowledge' or rational ignorance linked to uncertainties and ontological indeterminacy[57] than a period of human mastery and domination of earth systems. But further, it also displays the helplessness (impotence) of already accumulated scientific knowledge to trigger necessary changes. Indeed, the issue today is not any longer to get a clearer picture of the situation by accumulating scientific data but to understand 'how we entered the Anthropocene *despite* very consistent warnings, knowledge and opposition' (Bonneuil and Fressoz, 2016: 79; original emphasis).The accumulation of empirical facts and scientific findings on the predicament of our planet, no matter how detailed and alarming they are 'can never be', as Blühdorn explains, 'a substitute for normative judgments' (2015: 159). The lack of ethical, philosophical, and political judgements associated with the (green) capitalist management of environmental issues, explains, indeed, the depth and acuity of the ecological crisis (See Section 2.4).

In the early 1990s, the concept of 'sustainability' was supposed to ground environmental limits on hard facts and objective 'sound science'[58]. However, the system changes that this notion called for to move beyond a growth-based economy

[56] For a numerical approach of environmental thresholds, see Appendix E.
[57] 'Uncertainty' is an epistemological category while 'indeterminacy' is an ontological category.
[58] For a critique of the 'sustainability' concept, see Section 5.2.

never happened. As Blühdorn says, 'the sustainability paradigm and ecological modernisation [market-oriented strategy] predictably failed to deliver a structural transformation of industrial capitalism and the consumer culture… [T]hey just expanded the life expectancy of the established socio-economic order that, at its core, still remained *inherently unsustainable'* (2015: 158; emphasis added). Here, 'unsustainability' refers to all three domains of sustainability – ecological, economic and social. The emergence of the Anthropocene epoch signs anew the failure of 'reflexive modernity', a historical and sociological concept invented by Giddens (1992) and Beck et al. (1994) to define the period in which Western societies were supposed to have dissolved the confidence in their so far 'taken for granted' premises. The failure of late/second modernity to tackle the ecological predicament, shows our constitutive inability to act according to *what we know* and *what we know we do not know*…

'Reflexive modernity' theory emphasises the ecological failures of modernity; that is the environmental destructions entailed by the social, political and economic systems developed in modernity by the Western world. As Beck (1994, 1992) explains, the victory of the first modernity, through industrial capitalism, technical innovations, scientific rationality or economic growth, has led to a self-created crisis (i.e. a reflexive crisis). The success of rationalisation and industrial processes have undermined the social, economic and ecological foundations of our societies: 'the West is confronted by questions that challenge the fundamental premises of its own social and political system' (Beck, 1994:1). The consequences of scientific and industrial developments are a set of uncontrollable and unforeseen large-scale risks and hazards ('manufactured risks') which make us live 'in the *age of side effects'* (Beck, 1994: 175; original emphasis). Reflexive modernity is an exacerbation and acceleration of the institutional consequences already encountered in first modernity. Among those modern constituents, we find corporate capitalism, technocracy, invasive state bureaucracies, liberal individualism, hyper-consumerism, instrumental rationality, scientism, and positivism. Globalisation, for Beck and Giddens, is a major pole of

reflexive modernity: the industrial institutions of the Western part have become 'world-historical in their impact' (Giddens, 1992: 15; 63). For Beck, the globalisation of Western social systems and escalating technologies entailed 'the globalisation of side effects in the nuclear state and in the creeping ecological catastrophes… [which make] the possibility of intended and unintended collective suicide… a *historical novelty'* (Beck, 1994: 180; emphasis added). If Giddens defines the process of reflexive modernisation as positive in its core, Beck warns against the dangers of industrial societies. Indeed, their activities do not only create epistemically 'manufactured uncertainties' (Giddens, 1998: 105)[59] but also *ontological indeterminacies*; that is aftereffects which are neither entirely predictable nor controllable, as well as worrying modifications of forms and conditions of life. Reflexivity here might not only mean 'reflexion' but also 'reflection' (action directed to oneself). Indeed, the reflexivity of modernity is self-alteration of the foundations of industrial order and 'self-endangerment'. Beck considers this stage of modernity as 'unfinished' and seems 'to hold out the hope that if reflection takes a critical form, then society as a whole might become more cautious and less interventionist' (Smith et al., 1999: 171). It is the completion of reflexive modernity that the normative theory of green republicanism seeks to achieve under the name of 'new green republican postmodernity' (see Appendix A); that is the implementation of a new ensemble of socio-cultural, ecological and political norms resulting from the awareness of our modern societies' failures and limitations (see Chapters 4, 5 and 6).

Twenty-five years after the development of Beck's arguments, the situation has not improved but rather drastically worsened. Megatechnologies, political inertia, and predatory growth-based economic systems have produced more uncontrollable risks and hazards, and neither the 'knowledge of our knowledge' (reflexive

[59] For Giddens, the notion of risk is mainly a social construction entailed by high reflexivity rather than an objective reality (1998). For Beck, increased risk reflexivity (or subjective sensibility to the notion of risk) is the outcome of a greater number of risks and hazards being *objectively produced* (1995).

knowledge, awareness) nor the knowledge of our 'non-knowledge' (rational, reflexive ignorance) is able to reverse the direction of travel. On the contrary, actors of public 'risk management' (policy makers, political leaders, business executives, governments, international organisations, agents of the market or scientific advisors), have distinguished themselves in recent decades by stalling tactics that made things worse, such as green capitalism (or 'win-win' rhetoric), greenwashing, techno-capitalist ecopolitics and green management programmes of all types. Such policies have been implemented to preserve the social and economic order and levels of consumption ('business as usual') rather than to generate more sustainability. Through green washing[60], liberal corporations and institutions have tried to convince people that they are actively dealing with the ecological crisis while they are in reality worsening the situation and feeding the profit-making mechanisms. Eco-modernisation and its new recent form, ecomodernism, is for instance not about changing unsustainable lifestyles and institutional structures but about promoting social adaptation and capitalist resilience in the face of politically sustained unsustainability (through for instance specific 'eco'-product choices or new technologies, geoengineering included). By doing so, governments and voters get the moral satisfaction of pretending to act without the discomfort of doing it (Monbiot, 2003). Western peoples seem indeed struck by a cognitive dissonance: *they do not want to believe what they know*, especially when the price to pay for such an awareness would be the renunciation of the 'myth of progress' associated with endless economic growth, (over)consumption, and excessive comfort. What is probably missing is an emotional hook that catches the attention of such hyper consumers. Personal experiences of disasters and ecocatastrophes can be such a hook but they often come too late for entailing the normative actions needed. On the contrary, they rather lead to the choice of radical and endangering solutions such as geoengineering or political radicalism.

[60] Green washing, through for instance green marketing, is a deceptive tool used to promote the perception that products, aims or policies are environmentally friendly.

Social narratives (or guiding visions) are other emotional attractors but they are today captured by the dominant ideology. Indeed, as suggested by Bonneuil and Fressoz, '[t]here is a whole arsenal that makes it possible to ignore warnings and protests' (2016: 78). Lobbying, story-telling, the active depoliticisation of ecological issues, greenwashing, the normalisation of the looming environmental crisis, complexification, technification, simulated taking account of the problems, and so forth are all organised institutional practices which support the politics of social, economic, and ecological unsustainability[61].

Another delaying tactic appears today, under the form of ecomodernist talk of a 'good Anthropocene'.[62] Ecomodernists or 'neo-greens', (also called 'eco-pragmatists' or 'neo-environmentalists') advocate the decoupling of the human economy from nature in order to save it (Section 5.3), celebrate the 'end of nature' as well as 'the death of environmentalism' (Chapter 3), advocate more technology to counter the side-effects of technology, and especially call for a 'neoliberal conservation' guided by economic rationality and human-centred managerialism' (*An Ecomodernist Manifesto*, 2015) (Section 2.4). Such a techno-optimist and neoliberal view celebrates 'the "age of human" as the achievement of the cornucopian dream to create and recreate the planet according to our wishes' (Fremaux & Barry, forthcoming 2018). However, in such unsure and endangered times, nothing appears less appealing than Latour's and ecomodernists' invitation to 'love our monsters' (Latour, 2012; Shellenberger & Nordhaus, 2011a): that is to love our technologies as though they were our children, no matter what grim prospects they involve. There is also reason to doubt the ecomodernist celebration of the Anthropocene as an 'opportunity' to

[61] See Blühdorn (2011).

[62] Ecomodernism is a recent movement associated with prominent environmental figures such as Ted Nordhaus, Michael Shellenberger, Steward Brand (2009), the physicist David Keith (2013), Nobel Laureate Joyashree Roy and filmmaker Robert Stone who co-authored *The Ecomodernist Manifesto* (2015). It also designates the neo-conservationist movement associated with Peter Kareiva, Michelle Marvier, Emma Marris, and Robert Lalasz. Institutional allies and supporters of Neo-Greens are *The Gordon and Betty Moore Foundation*, *The Breakthrough Institute*, *The Long Now Foundation*, *The Nature Conservancy*. For a detailed account of their claims, see Wuerthner (2015) and Soulé (2013).

control and master our destiny (Erlis, 2012) or to 'design ecosystems… to new glories' (!) (Marris et al., 2011: n. p.). Indeed, these thinkers take the opportunity of this new era to absolve Western societies of responsibility and pursue the modern dream of domination of the earth. They do so without noticing that to accept the 'Anthropocene' as defining an era in which humans have become the most destructive force on the planet, should also entail a certain liability for the losses and destructions they have caused.

Nothing is more at odds with the view defended in this thesis than the description of the Anthropocene as an era of human glory and achievement where humans transcend nature and become the dominant and controlling force on Earth. This outlook typically urges us to follow Teilhard de Chardin's imperative to 'take hold of the tiller of creation', and through Earth System Science and its associated set of knowledge/power represented by 'earth system governance', to manage the planet (Fremaux & Barry, forthcoming 2018). The techno-optimistic (and in the case of ecomodernism, 'arrogant') association made by those who wish to maintain the present fatal trajectory, between the Anthropocene and a new age of further mastery and control[63] contradicts our conception of the Anthropocene as an era fraught with uncontrolled and unpredictable 'human-induced changes'. Nothing, indeed, appears as much 'uncontrollable' and 'unmanageable' as the 'impotent power'[64] humans have on their environment. Or what one may call the 'non-mastery of our mastery'[65].

Humanity has entered a world of boundaries, a material world of ecological limits but also a symbolic world of scientific limits (what post-normal sciences call the 'unknown unknowns', Ravetz 2006). Therefore, it is not the traditional (modern

[63] The fundamental problem here is the distinction between 'influencing' and 'creating' nature. See for this conceptual leap Plumwood (2001).

[64] I owe this expression to Bonneuil & Fressoz (2016: 24).

[65] I owe this expression to John Barry.

and '*most*modern'[66]) narrative of progress, control, and mastery which will help us inhabit the Anthropocene but rather the recognition of our ignorance and limitations. Western people must realise that the traditional set of knowledge held by orthodox disciplines, from economics and political science to biological and natural sciences, cannot guide us any longer with certainty in these turbulent times. Navigation in 'heavy weather' like the one characterising postnormal times demands virtues such as humility, modesty, and accountability for the present but also for the future, for those who are on the deck as much as for those who are in the engine-room and in the holds. The legacy of the Anthropocene will be legible for the millennia to come and requires that humans start to inhabit and consciously live within 'deep time', or in other terms, that they extend their thinking ahead of the present to the human and non-human life to come.

Insofar as ecological catastrophes are human-induced processes (which illustrates the very notion of 'Anthropocene'), they are the consequences of the politics inherent in the organisation of our societies. As M. Smith notes, '[e]nvironmental issues are then neither accidentally nor incidentally but *inherently* political. They are not just the subject of political debate but are *caused* by politics, by acting into nature as if it were or could become a human-made process' (2011: 145; original emphasis). Indeed, one of the central ideas defended in this thesis is that the systemic crisis that the world in general and the Western world in particular are facing has *a normative political basis*. That is, it has to deal with values. Especially, the continuation of an economic system which renders the destruction of the planet inevitable, and turns the exploitation and commodification of human and non-human beings into 'banal' and 'acceptable' phenomena cannot be tolerated any longer (Chapter 5). Likewise, political institutions that favour the interests of a small elite

[66] In this work, I am reluctant to grant the term 'post-modern' to tendencies and ideologies which repeat the same reasoning, the same mythologies, the same beliefs in progress, science and technology, and which foster the same social and political institutions as modernity. To characterise these obsolete but still very fashionable discourses, I use the word '*most*modern' borrowed from Spretnak (1997: 36) or as a matter of variation, the word 'post-*most*modern'.

over the common good and encourage the depoliticisation of people need to be urgently reformed (Chapter 6). Everything which is envisioned here flows from the idea that the converging crises we are facing have normative roots: they derive from mistaken ideological and institutional choices and not from a putative 'natural' evolutionary process. This thesis thus calls for revolutionary conceptual and ethical changes to create a fundamentally different worldview free from (eco)modernist failures, and an ecologically and humanly sustainable society (see Chapters 4, 5, 6).

New normative doctrines must be established to escape this predicament. In Jonas' words a new 'ethic of responsibility for the future' (1984: 84) needs to take place to overcome the distorted relationship to time and the lack of accountability toward the future our modern societies illustrate. This is what Barry (1999) calls an 'ethic for the use of nature', as opposed to or to supplement an 'environmental ethic'. This thesis goes further and defends the necessity, alongside Barry's normative theory, of 'an ethic for the *non-use* of nature' as illustrated by the post-anthropocentric account given in Chapter 4. Instead of this type of politics which makes the earth uninhabitable and which supports unsustainable post-democratic forms of governing – such as the rule of experts, technomanagerial innovations, and the de-politicisation and objectivation of environmental debates[67] – we need a new ecopolitics that supports robust environmental regulation and includes the mission of protecting the 'denizens', i.e. those who are excluded from citizenship. The 'politics of the earth' (Dryzek, 2005) acknowledges humans' present responsibility towards existing and future human and non-human forms of lives. The green republican theory defended in the final chapter sustains new institutions embodying a commitment to augmenting (and not decreasing) the conditions for life; that is a 'life-affirming' politics.

The capture of the concept of Anthropocene by natural scientists and political 'experts' contributes, on the contrary, to depoliticise and objectivise

[67] This is what Dryzek (2005: 75 sq.) describes as 'Leave it to the experts: Administrative rationalism'.

environmental policy. The dominant naturalistic account of the Anthropocene obliterates the social and economic choices and specifically time/space located causal forces which led us to the environmental – but also social and economic – deadlock. As a result, the dominant picture of the Anthropocene fosters confusion (lack of orientation), encourages citizens to be passive recipients of scientific claims, creating by doing so democratic and moral apathy, and offers the continuation of the very same neoliberal technocratic (a-political) politics which has created the crisis. Worse, while insisting on the apocalyptic threats of ecosystems collapse, the dominant narrative advocates more science and ('green') technologies as the only realistic answers to 'save the planet' in times of emergency. This techno-scientific account works in fact like a self-fulfilling prophecy: the more necessary normative changes are delayed, the more nature is destroyed by unsustainable practices, the more will the humans be dependent on technology and science to survive. As LeCain says, 'the longer the world delays, the more likely it will be that humans will have no choice but to engage in risky geoengineering projects, with potentially disastrous results' (2015: 7). Indeed, the claims of a 'good Anthropocene' involves the possibility – or for some, even the promotion – of geoengineering but also nanotechnology and all the tools that the NBIC revolution offers to mitigate global warming and other ecological threats. For instance, Schellnhuber et al. (2005) consider the massive extraction of anthropocentric CO_2 through physicochemical precipitation or the 'judicious' injection of SO_2 into the stratosphere as 'potentially feasible suggestions based on solid science' (p. 24).

The techno-version of the Anthropocene places 'the scientists of the earth system, with their new supporters in the human sciences, at the command post of a dishevelled planet and its errant humanity' (Bonneuil and Fressoz, 2016: 80). This echoes some earlier 1970s anti-democratic/political ecological voices such as eco-authoritarians like Heilbroner, Ophuls and Hardin (Barry, 1999). And indeed, how different is the ESS discourse in empowering a scientific and technocratic elite to analyse, understand and control the earth, from Ophuls' call, decades ago, for a

'priesthood of responsible technologists' (1977: 159). The next section will scrutinise the naturalistic techno-scientific dominant narrative which opens the path to a 'tyranny of science' that delegitimises other cultural – feminist, indigenous, post-colonial, critical theory – accounts of the Anthropocene.

At the time of writing, the Anthropocene Working Group has not yet made a formal decision on whether or not the Anthropocene can be accepted as a new geological era. So far, the Anthropocene is more a paradigm, a 'claim' than a validated scientific concept. Nevertheless, this concept has already become a powerful idea used by some environmentalists and conservationists but also by policymakers, artists, activists, historians, journalists, writers, as well as social scientists. The word 'Anthropocene' has become a 'buzzword' which already encounters a great success, even before its geological confirmation: '[t]he neologism now circulates far and wide – and not only in academia… it might become a keyword: that is, one of those terms that are central to the way we understand ourselves in the world in which we live' (Castree, forthcoming 2018). A Stanford University podcast even suggests that we belong to the 'Generation Anthropocene'[68]. The recent last years have already seen extensive debates about people-planet relationships inspired by the ESS and 'Anthropocene science' (or 'global change science'). Even when originating in scientific research these debates manifest extra-scientific implications and assumptions which are worth noticing. The next section takes a look at the normative discussions around the onset date of the Anthropocene and discusses the relevance of theorising the *Anthropos* as a singular and unified geological force.

[68] [Online] https://www.genanthro.com/

2.3. Who is the '*Anthropos*'? The dominant story-line of the Anthropocene

Since its inception, the concept of Anthropocene has fostered the development of historical narratives about its founding causal chains, and its onset date. Crutzen and his colleagues initially ascribed this geological time interval to the beginning of the industrial revolution in the 18th century and especially to the invention of the steam engine in 1784 (Crutzen & Stoermer, 2000: 17-18). This event, according to them, entailed broad changes in the earth system concerning the composition of the atmosphere, oceans, and lands, the disruption of carbon, phosphorus and nitrogen cycles, ocean acidification, and so on. Lewis and Maslin (2015) evoke 1610 and 1964 as possible dates marking the beginning of the Anthropocene, the former one revealing the global effects of overseas trade and settlement, the latter, the high proportion of radioactive isotopes found in rock layers after nuclear-weapons testing. Others, like the historical climatologist Bill Ruddiman (2003), suggest that the Anthropocene could have begun with the development of agriculture some 7000 or 8000 years ago. Some even link it to the first human settlements and the manipulation of fire (Raupach and Canadell, 2010: 210; Steffen and al., 2007): '[t]he mastery of fire by our ancestors provided humankind with a powerful monopolistic tool unable to other species, that put us firmly on the long path towards the Anthropocene' (Steffen et al., 2007: 614). For Mark Lynas, author of *The God Species*, the fossil economy is the creation of 'the fire-ape, *Homo pyrophilus'* (2011: 29). Ellis's (2015) extremely depoliticised theory of 'anthropoecology' based on the 'Niche Construction Theory '(NCT) links the destiny of the earth to the global force of human societies, both having co-evolved in a natural evolution history. In other words, the early origins of the Anthropocene can be found in cumulative archaeological and paleoecological datasets evidencing the first developments of

human societies[69]. Such abstract theories can be fully associated with the 'post-political' condition of climate politics. Their effect is 'to block off any prospect for change' (Malm and Hornborg, 2014: 67)[70]. Indeed, if climate change is the outcome of the discovery of fire, 'or some other property of the human species acquired in some distant stage of its evolution, how can we even imagine a dismantling of the fossil economy?' (ibid.). Such an account makes any (normative) change in ethics and politico-economic organisation of our societies meaningless. The Anthropocene and its dire consequences have to be accepted as a necessary collateral effect of humanity's development.

However, these statements do not take into account qualitative transformations, that is the nature of the change which has made humans become a pervasive ecological threat to the biosphere. There is no doubt that the anthropisation process of the planet has occurred concomitantly to the developing of the human species but not at *the pace and extent* (qualitative leap) the industrial capitalist revolution and global capitalist economy allowed it. Given the impact of the industrial era on the planet, opinions seem now to be converging on the period between 1945 and 1950, beginning of the 'Great Acceleration', denoting the Anthropocene as starting in the post-WWII era. The effects of the 'Great acceleration' are well demonstrated in the following dashboard of twenty-four charts (figure 2.3) displayed by the 2005 IGBP publication ('Global Change and the Earth System'). It gives the spectrum of 'human activity indicators' and their global effects on the environment – concentration of atmospheric carbon and methane, measure of biodiversity and so forth since 1750, showing a specular acceleration after 1950. In summary, if the origin of the Anthropocene can be dated back to the onset of capitalism (mercantile capitalism in

[69] The logic is similar to those who defend genetic modification as 'the same' as humans hybridising plants and breeding animals for thousands of years.

[70] For a critical account of the naturalising narrative which presents the Anthropocene as the 'normal' continuation of human history, see Rolston (2017: 42 sq.). As Marx states, 'certain social relations appears as the natural properties of things' (quoted in Malm and Hornborg, 2014: 67).

the 15th-16th century, industrial capitalism in the 18th), it is during the 'Great Acceleration' that the processes leading to the crossing of 'planetary boundaries' reached dangerous thresholds. Capitalism has indeed entered a period of historically exceptional growth after the Second World War. For instance, the indicator of global human ecological footprint[71] rose from 63% of the bioproductive capacities of the planet in 1961 to 97% in 1975, reaching today a level of 150%; that is the consumption of 1.5 planets per year[72].

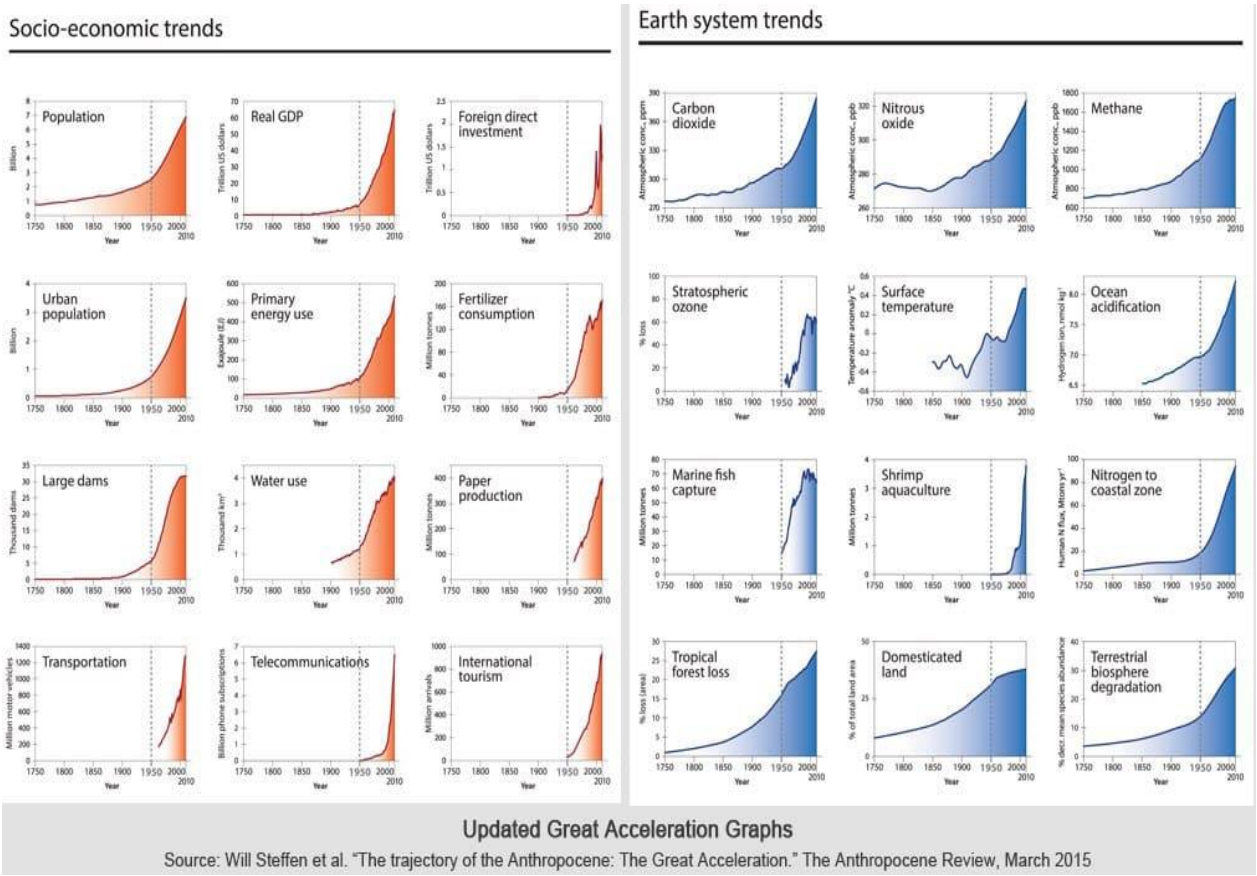

Figure 2.3: The Great Acceleration (Steffen et al., 2015b).

[71] The Ecological Footprint represents the human demand on the planet's ability to provide renewable resources and ecological services. Humanity currently needs the regenerative capacity of 1.6 Earths to provide the goods and services we use each year (Source: Living Planet report, 2016). [Online] http://awsassets.panda.org/downloads/lpr_2016_full_report_low_res.pd

[72] Bonneuil & Fressoz, 2016: 245

The Anthropocene Working Group chaired by Dr. Zalasiewicz considers, indeed, that an adequate although provisional Holocene-Anthropocene boundary could be found in the period immediately following the second world war and the deposition of artificial radionuclides over the earth's surface after the first nuclear bombing tests. This layer of radioactive components could be then considered as a 'golden spike' (Zalasiewicz et al. 2015; Zalasiewicz et al. 2016). More generally, key proponents of the concept or 'anthropocenologists' – as Bonneuil and Fressoz (2016: 48-49) label them – such as McNeill (2000), Chakrabarty (2009), Crutzen (2000), Crutzen et al. (2002) or Steffen et al. (2007, 2011a, 2011b) propose a three-stage periodisation of the Anthropocene, the first one running from 1800 to 1945 with the expansion of the industrial era ('Thermo-industrial revolution' and 'Fossil Fuel Age'); the second phase, 'The Great Acceleration' (Steffen et al., 2011b: 848), opening after the second world war with the availability of abundant cheap oil and other sources of energy such as nuclear energy which resulted in an exponential economic and demographic growth, and as the dashboard shows, in the take-off of all human activities with the subsequent changes in the Earth system (GHGs levels, ocean acidification, deforestation and biodiversity deterioration, etc.). The third stage is seen as beginning on the eve of the 21st century, especially in 2001 when the third report of the IPCC asserts for the first time with certainty the anthropogenic source of climate change. The chart below, extracted from the second World Scientists' Warning to Humanity (Ripple et al., 2017) shows that since the 'Union of Concerned Scientists' gave its first warning concerning the state of the biosphere in 1992, things have only been worsening (except for the stabilisation of the ozone layer).

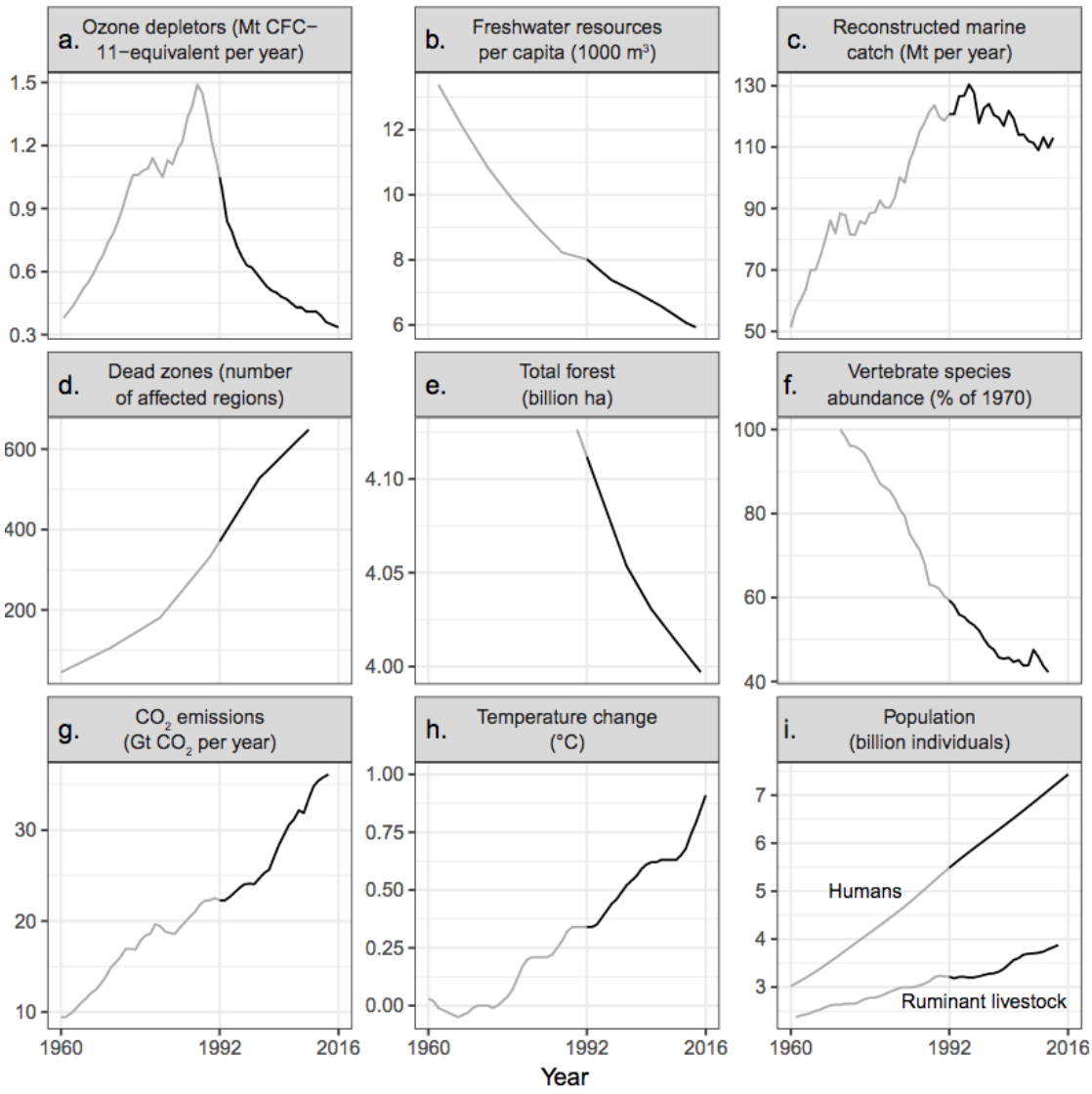

Figure 2.5: Trends of environmental issues after 1992 (black line) (Ripple et al., 2017)

According to some ESS scientists, we are now living a time of a 'self-aware Anthropocene': '[w]e are the first generation', say Steffen and his colleagues 'with widespread knowledge of how our activities influence the earth system, and thus the first generation with the power and the responsibility to change our relationship with the planet' (2011a: 757). This view shares some common assumptions with the 'reflexive modernity' thesis (see Section 2.2) which considers the march of progress

as going from non-reflexive practices to enlightened ones. However, if our societies are now very well informed about the ecological predicament, how to explain that almost nothing substantial is being done to reverse the unsustainable trend? Why are we still 'riding the juggernaut of modernity"[73] despite consistent warnings, and the knowledge we have accumulated? Given the failure of the Westernised world to take the urgent steps needed to preserve our imperilled biosphere, the truth might be closer to Barry's statement according to which 'we could be the first species to *accurately* document our own demise' (2012: 1; emphasis added). Indeed, as indicated by the warning above, humankind has so far failed to curtail environmental destruction despite clear scientific evidence to this effect. As already noted, the present crisis does not require more scientific evidence but more normative thinking and concrete action.

What is at stake in the dating dispute, beyond correctly interpreting the scientific data, is the capacity 'to identify which humans (when and where) are responsible for planetary change, with what all this implies for how such change might be mitigated and managed' (Castree, forthcoming 2018). Some theorists (Bonneuil & Fressoz 2016, Purdy 2015, Moore 2015, Crist 2013, among others) have already taken issue with the generalised '*Anthropos*' involved in the Anthropocene; that is, with a universalist concept assuming that all humans are equally implicated and equally affected by the situation. These authors criticise the dominant narrative and 'view from nowhere' that put forward an undifferentiated biological entity and geological agent ('humanity'), uniformly concerned or even implicitly guilty for the mechanisms that gave rise to this geological event. Indeed, we are neither all – the poor, the rich, the dispossessed, people from the global North, people from the South – equally

[73] For further explanation about this image, see Giddens (1990: 151 sq.).

responsible for the Anthropocene, nor are we suffering from it in the same manner[74]. To choose to date the onset of the Anthropocene in remote times is not only scientifically wrong – insofar as it confuses *anthropogenic environmental changes* with *humanly-induced planetary changes* (Castree, forthcoming 2018) – but also politically and axiologically problematic. Indeed, the thesis of the 'gradualist' impact of humans on earth naturalises and normalises the situation. It says that 'we have more or less always done the same', taking away by doing so all responsibility from social, economic, and political institutions which have created the predicament, and hiding the strategic relations of power and production at stake. Jason Moore denounces the reduction of 'the mosaic of human activity in the web of life' to an abstract 'Humanity' and the fact that critical concepts are removed from consideration. Indeed, inequality, commodification, imperialism, patriarchy, racial formations, and much more are not part of the explanatory framework of the Anthropocene (2015, Chap.7; Kindle ed.). The elevation of the *Anthropos* as a collective actor – or the construction of a meta-theory of humanity – contributes to the misrecognition of the forces of capital and economic empires that have moulded modern history. The ethnocentrically universalised and naturalised understanding of the Anthropocene is a typical modernist and Western interpretation of history. It presents humankind's development as a unitary process, ruled by scientific progress and heading towards a modern Western type of society which requires, in turn, Western techno-capitalistic management.

The Anthropocene story viewed as 'the evolution of humans… from hunter-gatherers to a global geophysical force' (Steffen et al., 2007: 614-621) minimises and underestimates the rupture or 'breakthrough' – to use a popular term among anthropocenologists – entailed by the burning of fossil fuels; that is the suddenness, severity, and irreversibility of the Anthropocene. The dating dispute, thus, is not only

[74] According to the UN Refugee Agency (UNHCR), 22,5 million people have been displaced by climate-or weather-related events between 2009 and 2015 [Online] http://www.unhcr.org/climate-change-and-disasters.html For a view of interconnected world problems, see Appendix D.

a 'scientific question'. It involves assumptions about which significant historical changes are in play and therefore which kind of human response is needed to slow its development and mitigate its impacts. Moore (2015, 2016) argues that the Anthropocene is not the geology of a species but rather *the geology of a system of power, profit and re/production, namely capitalism,* and as such, should be renamed 'Capitalocene'. For Malm and Hornborg (2014), the Anthropocene is not a scientific story but the index of capital accumulation, of privileged resource consumption, of differentiated and extremely unevenly distributed negative environmental impacts. According to the perspective contended in this work, it is the same system (capitalism) that has produced the devastating ecological effects that characterise the Anthropocene and the social inequalities plaguing our contemporary world.

Major capitalist transformations of the past five centuries could only take place at the cost of natural ecosystems considered as 'cheap nature' (Moore, 2016)[75], especially in the Third World where ecological surpluses and resources were/are still captured by Western industrial countries under colonialism and economic neocolonisation. As Bonneuil and Fressoz (2016) explain, 'the rich countries would have never attained the post-war affluent society without the possibility of an unequal ecological exchange with the rest of the world' (p.252). Those asymmetries of wealth, characteristic of the dynamic of capitalism, have been accompanied by a plundering and deterioration of ecological resources in the South. And indeed, if the Western countries can continue to ignore the ecological distress, it is because they collect most of the resources they need in distant ecosystems and export their wastes and polluting industries outside of their frontiers. This is how they can fail to acknowledge the unsustainability of their social and economic structures and avoid the ecological consequences – for a while – of their practices.

[75] Within capitalism structures, as Moore explains, Nature is 'cheap' in a double sense: 'cheap' (for the price) and 'cheapened', degraded or rendered inferior in an ethical and political sense (Moore, 2016: 2-3).

Therefore, the Anthropocene raises particular issues of global and environmental justice as some authors suggest (Guha and Martinez-Allier 1997, 1999; Martinez-Allier 1991, 2002; Guha 2000; Radkau 2008, 2014). Environmental degradation affects firstly the poor through for instance polluting factories or other such hazards which are sited in developing countries or close to lower-class residential areas in developed nations. All over the world, in India, Latin America, China and elsewhere, poor people are struggling for better air quality, clean water, and protection of their traditional lands, ways of life, collective identities and cultures, which are currently 'vampirised' by capitalist industries. They also fight against landfills, dams, deforestation mining projects, nuclear plants or the pillage of their natural resources – what Shiva calls 'biopiracy' (1997).

Athanasiou (1996) suggests that in the 'Global South', or in the poor, indebted, population-booming regions of the world, environmental protection is linked to survival and justice (p. 15). The protection of natural resources, currently looted by transnational corporations, has become a vital priority and a major struggle for underdeveloped nations which are (also) under-represented in international organisations. The Third world movement in favour of environmental justice has been propelled by some activists and scholars such as Bello, Escobar or Shiva. The famous 'Chipko' protest movement led by Indian women to protect traditional uses and ecological values of their forests, or anti-extractivist struggles in Latin America (around the concept of '*Buen Vivir*')[76], can be seen as prominent examples of third world environmental resistance. Indigenous populations in Latin America, people in Africa and Asia whose lives are intimately tied to access to natural and shared resources are indeed particularly affected by the industrialisation and the hoarding of their habitats. Academics such as Martinez-Alier (1991) and Guha (Guha et al., 1999) have coined the expression 'environmentalism of the poor' to define the injustice perpetrated on rural peoples in the global South and the fight for social justice and

[76] See for instance the rebellion in the Chiapas where women also play a significant part.

environmental preservation in the developing world. It encompasses the struggles of the poor and the indigenous to defend their values and livelihoods. As Martinez-Alier (2016) says, '[i]n many resource extraction and waste disposal conflicts in history and today, the poor are often on the side of preservation of nature against business firms and the state' (p. 552)

As outlined by Baskin (forthcoming 2018), the core texts of anthropocenologists (Crutzen 2002; Steffen et al. 2007; Steffen et al. 2011a, 2011b) are silent on questions of justice and inequality, and the uneven causes and consequences of the Anthropocene and climate change[77]. In general, they pay little attention to politics, and the social and power relations which constitute the real life of humans on earth. On the contrary, when the causes of the Anthropocene are questioned, those authors offer a disembodied view of humankind, treated as a homogeneous unit, i.e. a view of the 'Anthropocened Earth' as if it were given from space. In the same vein, they provide a disembodied narrative of progress which is startlingly not devoid of positive notes. Undifferentiated technological advances – from the control of fire to the emergence of agriculture, and to the industrial revolution – are considered by Steffen and his colleagues as 'the footsteps of the enlightenment'. They also acknowledge 'the remarkable explosion of the human enterprise from the mid-twentieth century' (Steffen et al. 2007: 616;618). For Crutzen, 'hopefully in the future, the "Anthropocene" will … be characterised… by vastly improved technology and management' (2006b: 17). Additionally, almost no emphasis is given to concrete social realities and differences among territories and social classes. No mention is made of 'colonial conquest, imperial dispossession, or [of] the global imposition of Western cultures of modernity and extraction, nor [of]

[77] Neither inequality nor injustice is mentioned in those articles apart from an undeveloped assertion in the 'Geology of mankind' where it is noted that '[s]o far, those effects have largely been caused by only 25% of the world population' (2002: 23) or in the 2011 article where it is noted that 'equity issues are often magnified in the Anthropocene' (p.856).

the shattering of indigenous institutions of production and social organisation' (Baskin, forthcoming 2018).

The scientific narrative of the Anthropocene carefully avoids any reference to socio-environmental struggles, past or present. It ignores all the bottom-up initiatives, grassroots or alternative initiatives such as the Transition movement, The Voluntary Simplicity or Ecovillage Movements (See Appendix C). It overlooks Global justice claims such as those of the anti-extractivist *Buen Vivir* movement or the fight for Indigenous rights. In other words, the dominant narrative of the Anthropocene grants no room to local resilience, degrowth, a-growth or downshifting's paradigms, values of sharing and sufficiency, as well as radical democratic alternatives to the governmental 'sustainability' concept. The silence made on these issues is significant. Anthropocenologists seem ready to fulfil Swyngedouw's fear of a 'post-political' future (2013), that is a socio-political order where struggles and contestations are replaced by techno-managerial planning. They seem ready to enact what Luke (1999) calls 'green governmentality'[78]; that is a regime of truth ('eco-knowledge' and 'geo-power') and a modality of government which reinforces the power of expertise and technocracy in the name of responsible environmental stewardship and 'earth management' (see next section). This trajectory echoes anti-democratic eco-authoritarian authors such as Ophuls (1977) and Hardin (1977). In some respects, as indicated earlier, it echoes Ophuls' call for a (benign!) technocratic dictatorship. Given the complexity of ecological problems, democracy as the 'rule of the many' is seen as inappropriate to the task of saving societies from ecological catastrophes. Therefore, a 'priesthood of responsible technologists' (1977: 159) who possess the ecological and other competencies necessary to cope with the ecological crisis should alone be 'allowed full participation in the political process' (ibid.: 163).

[78] The concept of green governmentality expands on Foucault's concepts of biopower and governmentality (1990, 2008). More recently Eva Lövbrand and her colleagues have proposed the expression 'Earth System Governmentality' (2009).

(Il)liberal Weberian bureaucracies[79] and the extension of the economic reason to all aspects of life ('economicism') have already overridden democratic procedures. The tendency is therefore to ignore the social and political dimensions of the crisis, which is eventually already a way of shaping the answers. Especially, if no actors, interests and social categories are acknowledged within the abstract 'Anthropos' of the 'Anthropocene' concept, then no political action as such can be implemented. And indeed, anthropocenologists propose a universalist technological-oriented narrative which considers improved technology and better management as the only way to expand the biogeophysical limits of the earth system (see Sections 5.2 and 5.3). Technology, in addition to other undifferentiated categories and 'black boxes' such as population growth and fossil fuel burning, is presented as the primary driver of the Anthropocene (advent of steam or nuclear power) but also as its only possible remediation (geoengineering, new 'green' technologies). The effects of first order technology are supposed to be tackled by second order technologies ('techno-optimism'). For example, Brand notes that, '[o]ur management of future technology acceleration has to reverse the effects of past technology acceleration' (2009: 19-20). We find here the core thinking of 'techno-optimism' defined by Barry as 'the belief that the negative environmental and social costs of high-consumption, affluent consumer societies and associated ways of life within capitalist orthodox economic growth-oriented socio-economic systems can be solved or eradicated through technological innovation and breakthroughs' (2016b: 108)[80]. We find an exemplification of this blissful thinking in Nordhaus and Shellenberger (2011b) when they contend that '[t]he solution to *the unintended consequences of modernity is, and has always been, more modernity* – just as the solution to the unintended consequences of our technologies has always been more modernity' (n.p.; my emphasis). For Arias-

[79] In his 1922 essay, Max Weber described bureaucracy as the supreme rational form of social organisation. See Weber (2015).

[80] See the 'myth of Achilles lance' as underpinning 'techno-optimism' (Barry, 2012, 2016b).

Maldonado (2012), the view according to which technology might not be the solution is reduced to a 'cliché' linked to (traditional environmentalism?) ill will (p.93). This *Similia Similibus Curantur* (let like be cured by like) outlook goes against Einsteinian dictum according to which humanity cannot solve its problems by using the same kinds of thinking that caused them. But more than that, it is being oblivious to all the warnings about the unpredictable implications of large-scale technological interventions on nature. If a part of the answer to the ecological crisis belongs to technology, this piece will not come from the techno-scientific-industrial consensus (to preserve the status quo) but from 'low' and 'convivial' technologies that use little capital, little energy, little machinery and aim at empowering individuals while securing their autonomy.

Techno-science and the promotion of costly high-tech innovations (such as the NBIC revolution, biotechnology, geoengineering, artificial intelligence, and so forth) is today the largest determinant of modern social, historical, political, and economic order. In the common imaginary world, it is up to scientists and engineers to imagine solutions and to 'guide mankind towards global, sustainable, environmental management' (Crutzen, 2000: n.p.), possibly by including large-scale geoengineering projects 'to "optimise" climate' (Crutzen, 2002: 23). Indeed, as Crutzen and Stoermer say:

> [a] daunting task lies ahead for scientists and engineers to guide society towards environmentally sustainable management during the era of the Anthropocene. *This… well may involve internationally accepted large-scale geoengineering projects, for instance, to 'optimize' climate* (Crutzen and Stoermer, 2000: 18; our emphasis).

This apparently apolitical treatment of questions is eventually highly political and could be called, after Swyngedouw, 'the non-political politics of climate change' (2013). As Lövbrand et al. note, the vocabulary of the Anthropocene is depoliticised and devoid of social content: '[t]here are no actors, interests or social categories acknowledged within this humanity, neither any evidence of social injustice or asymmetry' (2014: 7). Even the definition of safe planet boundaries outside which the

Earth system may not anymore have a stable trajectory (see Section 2.3) are very seldom accompanied with suggestions for social and political transformation (as opposed to technological innovations) as the way to cope with these. We are, therefore, facing a tragic status quo that reflects the post-political and turbulent times in which we are living, i.e. the technocratic character of contemporary environmental policy-making and governance. Of particular note here is the refusal of the status quo becomes, in ecomodernist terms, the refusal of the 'principle of reality' (Arias-Maldonado, 2012: 4) as if the whole reality was trapped in an unsustainable present, with no alternative, which is another way to deny the transformative power of politics. The question is 'which reality' are we talking about? That of leading political and institutional powers or that of the environment? If the material conditions of life are, as ecologists believe, the condition sine qua non for any social system to flourish, the idealists might be more those who propose an infinite growth on a finite planet than the opponents to that idea[81]. The call for accepting the 'principle of reality' echoes the 1980s motto of neoliberals: '*there is no alternative*'… which is substantially anti-liberal since it denies the possibility of political and political-economy alternatives; that is of theoretical and practical pluralism.

By putting forward technological and managerial responses to the Anthropocene, key anthropocenologists do not aim at rethinking the model of development which led us to the crisis. They rather seek to prolong the mainstream narrative of economic and techno-scientific progress that originated in modernity and the global North and which brought the earth to the condition we are experiencing now. More roughly said, they embrace a naturalised, depoliticised and demobilising scenario which mainly consists of '(green) business as usual' and celebrates the new geopower of humankind and the age of scientific stewardship. In addressing the challenges of the Anthropocene, almost all anthropocenologists assume that it will

[81] See Fremaux (2011).

require more technology (possibly including geoengineering), better management of the Earth and the guidance of scientists, engineers and other experts. This narrative is what Bonneuil calls the 'tale of scientific shepherds and green geo-technologies' (2015: 23), or 'technological priests' managing the earth's systems.

Experts of the Anthropocene do not simply describe the planetary situation in objective scientific terms; they also offer (de)politicised technological solutions to escape the predicament. Instead of valorising democratic debates about the future of humanity, they involve their reputation for influencing the trajectory of the earth system management (for instance in the direction of geo-engineering). By encouraging the development and use of high risk technologies, pro-geoengineering scientists serve – willingly or not – the interests of a capitalistic machine always eager for technical innovations that extend markets and profits. They also provide neoliberal governments with easy solutions and fixes to ease voters' minds about the global climate change, new opportunities to support growth-based economies, and incentives for nations to enter the global techno-science race for 'climate security'. Contrary to that techno-based treatment of the ecological crisis, green republicanism intends to offer prospects for the democratisation of environmental policy and scientific debates that involve people's lives. This includes bringing democracy into the sciences or, in other terms, to allow the public and the stakeholders to take part in experts' discussions, through citizens' conferences and parliamentary select committees[82]. The next section will analyse the link between the momentum built towards scientific leadership and the economic status quo in 'Neoliberal Anthropocene'.

[82] For further developments about the democratisation of sciences and deliberative systems approach, see Berg & Lidskog (2018).

2.4. Neoliberal[83] and uneven Anthropocene: geopower, geoengineering and scientific stewardship

What does it imply to govern ecological limits under emergency conditions? The scientific narrative mostly held by earth system scientists offers a 'science-driven vision of Earth stewardship' (Lövbrand et al. 2009). Altogether, scientists of the ESS, the global expertise offered by the IPCC or 'Future Earth' (the recent global research platform launched by the UN), and the monitoring of the planet by satellites, give a new image of the Earth as a totality that can be known and governed, in all its components and functions. The 'spaceship metaphor' ('spaceship Earth')[84] conveys the simplistic idea that the Earth is a technical machinery, an object of contemplation detached from our lived experience that can be controlled and dominated. As Grevsmühl (2014) explains, the synoptic vision of the Earth offered by the spatial 'view of nowhere' has given birth to a new perception of the planet, as an artefact, a closed and limited object that is amenable to scientific experiments. Worth noting, the original use of 'spaceship earth' in Boulding's 1966 essay was, on the contrary, to convey limits, to emphasise the self-contained nature of life on the planet in contrast to the 'cowboy economy' of limitless expansion. The famous earthrise picture (see picture below) can indeed also be a relevant metaphor for a fragile planet that needs

[83] This work is in line with Schwarzmantel's definition of 'Neo-liberalism' as a general term referring 'to a set of ideas, comprising the crucial role of the market as an all-pervasive institution, the value of the individual, seen often as consumer in the market place with such consumer choice being the highest example of freedom and autonomy, and the value of social institutions being judged in terms of productivity and measurable output, *a form of commodification of all aspects of life'*. (2008: 176; emphasis added).

[84] The spaceship metaphor ("Spaceship Earth") is the idea according to which the planet Earth could be terraformed by engineers. It was first invented by the architect R.B. Fuller and popularised in his 1969 book, *Operating Manual for Spaceship Earth*. At the same time, the first earthrise picture (the view of Earth from the moon) photographed in 1968 by William Anders, member of the Apollo 8 mission quickly became central to the Western imaginary, positioning us above our own planet, in a kind of "'de-earthed' superior vision and strategic external position from which the Earth system can be managed and piloted" (Bonneuil & Fressoz, 2016: 62).

to be preserved. For instance, the astronaut Michael Collins recalled being 'Earthstruck'. As he said: 'Earth is to be treasured and nurtured, something precious that must endure' (Collins 1980: 6).

Figure 2.4: Earthrise from the moon - Image Credit: NASA (Apollo 8 Dec. 24, 1968)

The 'de-Earthed' vision can indeed lead to a sense of fragility and humility ('we have only one Earth') as well as to a de-Earthed imaginary order, 'the product of a techno-scientific culture' which negates the alterity of the world' (Bonneuil and Fressoz, 2016: 63). Paraphrasing Arendt, one could say that the techno-future-man wishes to exchange his planet 'for something he has made himself' (1998: 3). This 'de-Earthed' vision is also the necessary prelude or precondition for the ultimate telos and logic of ecomodernists, namely the departure of humanity to colonise other planets.

The knowledge humanity has of the planet as a system (ESS) is produced by abstraction, by looking at it from a superior standpoint. It intends to serve objectivity in complete detachment from human passions but it can also serve normative goals and subjective interests. Providing a view from outside (or from 'nowhere') built on sophisticated computer models, satellite images and global databases, ESS is a holistic discipline which includes the study of both natural processes (ecosphere) *and* social and human activities (anthroposphere). The earth system sciences aim at mapping, monitoring and managing the '*coupled human and ecological system'* (Steffen et al., 2004; my emphasis). This science of integration seeks to understand the planetary system as an integrated whole and is thus consistent with an 'Earth System governmentality' or 'Earth Systems govern-mentality' (Lövbrand et al. 2009); that is a rational world picture which implies specific forms of governance and designs trajectories for governments. Instead of being a detached reflexion on reality the work of science is indeed 'a socially embedded practice interwoven into the fabric of rule and authority (ibid.: 8).

On the one hand, the new knowledge provided by scientific expertise is much-needed to bring awareness and warnings in the public place and offer the guidance that is necessary to lead our societies on a sustainable path. But, on the other hand, it leads to an exaggerated glorification of specialists of the Earth system presented as those who define the situation and, at the same time, prescribe what needs to be done. In his 2002 article, Crutzen sets up the task of the global research and engineering community as such: 'to guide mankind towards global, sustainable, environmental management' (p. 23). Later, he argues in favour of geoengineering by assessing the failure of the 'world community' to lower the GHGs' concentration in the atmosphere. Indeed, the attempts to respond to the scientific warnings being 'grossly unsuccessful… the usefulness of artificially enhancing earth's albedo and thereby cooling climate by adding sunlight-reflecting aerosol in the stratosphere… might again be explored' (2006a: 211). It is salutary to note that Paul Crutzen and

Eugen Stoermer, in announcing the arrival of the Anthropocene, support geoengineering in the name of 'climate emergency' and as a solution which is by far not the 'best one'. Despairing over governmental capacity and political inability, they suggest that *only* the global scientific research and engineering community might be able to guide mankind to sustainability (Crutzen & Stoermer, 2000: 18). For these (cautious?) anthropocenologists, the justification for defending research in geoengineering is, indeed, the failure of the international negotiations to respond to the climate emergency. This is of course a 'defeatist' view of politics – basically stating that because politics has failed, we must now let technology address the problem, in spite of the high-consequence risks entailed. Steffen and his co-authors (2011a), for instance, acknowledge the possibility of adverse environmental side-effects linked to geoengineering but nonetheless include large-scale technological systems in the set of the 'innovative approaches' which can, in their view, offer the hope that traditional politicians cannot provide.

Because it urges to transform the planet, some EES and ecomodernist thinking reproduces the very same Enlightenment promise of human mastery over nature and self-realisation that has caused the situation of the Anthropocene. It expresses a confidence towards the fact that a better understanding of the scientific dimensions of the predicament will allow collective humanity to become a self-conscious force able to control the planet (Schellnhuber, 1999). Mechanistic metaphors, such as 'the engine room of the Earth System' (ibid.: 21) or the 'planetary machinery' (Steffen et al., 2004: 9) show that the mind-set of early modern scientific revolution according to which nature can be fully described, predicted and therefore controlled by science (Merchant, 1980), is not abandoned. This neo-enlightenment program (or 'second Copernican revolution' in Schellnhuber's terms, 1999), has lost sight of the fact that Anthropocene scientific perceptions are at the same time concerned with non-linearity, the existence of tipping points or bifurcations and chaos theory. The Anthropocene imaginary world is deeply characterised by doubt, uncertainty, irreversibility, and unpredictability, and departs from the certitude of the

Enlightenment. Rather than confidence, the Anthropocene era should raise anxiety and prudence. As Reith says (2004) 'the future no longer exists as something that is open to "colonisation" by confident, rational action, but rather as a site of anxiety, full of unknowns, that is not amenable to human intervention' (p. 393).

Not all earth system scientists share the optimistic view of human control mentioned above. Some, such as Lubchenko (1998), Kates et al. (2001), Jäger (2006) among others acknowledge the limits of scientific mastery and call for a sense of scientific humbleness and collective self-restraint. What certainly makes the success of the Promethean version of ESS and the 'management first' mentality among policymakers and market actors, is *its possible congruence with neoliberal visions*. Indeed, as Purdy shows, the neoliberal Anthropocene 'simply envisions ever-intensified management of the globe, carried forward by market means'. It is 'committed to man-made[85] ecologies that amplify existing inequality' (2015: 48-49). Neoliberal Anthropocene vision includes supporting techno-market responses such as large-scale and planetary level geoengineering, climate adaptive technologies such as bioengineering—including human genetic engineering (Liao et al. 2012). It also embraces the extension of environmental financialisation (Newell 2015), the promotion of neoliberal environmentalism (Swaffield 2016) and 'neoliberal natures' (Braun, 2014), carrying forward by doing so the process of de-politicisation identified by Crouch (2004) as 'post-democracy' (Fremaux & Guillaume 2014, Fremaux & Barry forthcoming 2018). In other words, this concept offers new opportunities for the further entrenchment of technical, managerial and often distinctly neoliberal policies that are beyond political disputes.

McCarthy and Prudham (2004) refer to the new environmental movement as 'the politics of transforming and governing nature under neoliberalism' (p. 279) while Heynen et al. (2005) refer to it as 'the on-going commodification of natural things'

[85] Of particular note here is the sexism of this phrase.

(p.6). Indeed, large scale geoengineering fixes, in addition to market-based solutions such as pricing pollution, creating green financial markets or assigning monetary values to ecosystem services (See Chapter 5), ensure the continuation of capitalist, growth-oriented consumer economic systems: they are 'business-as-usual' solutions that are supposed to perpetuate the energy and consumer intensive ways of living of a privileged minority of humanity while representing an enormous source of investment and profit potential for capitalist actors. Moreover, these large-scale technological solutions presented as a prospective cure, will make us, as Rolston notes 'more likely to procrastinate and less likely to seriously address the problem where it arises: in our relentless consumption of fossil fuels pursuing our ambition for endless growth and wealth' (2017: 56-57).

Faith in technofixes or 'techno-optimism' can be genuinely linked to the (non-reflexive) hypermodern belief in the prophetic part scientists have to play in human history. As Barry (2012) notes this 'techno-optimism' is in essence 'mythic', a form of necessary 'wish fulfilment' required for a 'good Anthropocene'. It can also be linked to the unapologetic desire to make money out of techno-scientific innovations or to the political desire to offer technical and growth-based compatible solutions that will not imply drastic changes in voters' lifestyles or values. From a cynical view (which is not foreign to top-down approaches), one could even consider that mainstream institutional powers, based on expert knowledge and growth-economics, would have an interest in delaying any collective, effective, and responsible answer to the destruction of the planet's life-supporting systems. Indeed, the longer it takes to transform our cultural, economic and energy systems, the more likely people will rely on climate technologies and expertise to solve environmental issues. This would represent a guarantee for centralised powers to prosper (and a dismissal of democratic alternatives), as well as a significant source of profits. Crudely put, the more nature disappears, the more can it be replaced by artificial capital and 'managed' by costly technologies, the better it is for the market economy, for techno-experts and for growth advocates. Indeed, as M. Smith warns, '*[i]sn't there now a real, and devastatingly*

ironic, possibility, that the idea of an ecological crisis, so long and so vehemently denied by every state, will find itself recuperated by the very power implicated in bringing that crisis about, as the latest and most comprehensive justification for a political state of emergency (…)?' (2011: xvi; original emphasis).

In his latest book Felli (2016) suggests that rather than seeking to reduce GHGs, a significant fraction of the capitalist class (alongside state, policy and political elites) do not advocate mitigating climate change but rather adapting to inevitable and now unstoppable environmental degradation. This way of thinking is relayed by policy makers, as shows the absence of binding requirements concerning the reduction of GHGs. The political class, hand in hand with capitalist rulers, work more and more on the way to make the effects of global warming publicly acceptable. This is what the author calls 'the great adaptation' (instead of Polanyi's 'great transformation'). This theory recalls the basics of neoliberal creed: societies must operate within the market logic and through private actors. As President Reagan (in)famously said 'Government is not the solution to our problem. Government is the problem'. More cynically, as Felli shows, citing the example of New Orleans after Hurricane Katrina, natural catastrophes become a justification to de/re-organise politics according to private interests. This is also Naomi Klein's thesis in *The Shock Doctrine* (2008): neoliberal theorists advocate the use of crises to impose unpopular policies while people are distracted. For example, Friedman described in the *Wall Street* Journal the Hurricane Katrina in New Orleans as '*an opportunity* to radically reform the educational system' (2005: n.p.; emphasis added).

Governments and industries see green technologies as potential lucrative markets and ready-made solutions to solve the ecological crisis. This explains why ecomodernists such as Nordhaus, Shellenberger, Ellis (Breakthrough Institute), and

Arias-Maldonado[86] support those capital intensive technologies and market-based solutions as the best solutions humanity has on hand. Ecological modernisation scholars already brought many market and monetary instruments – such as eco-taxes, corporate environmental management, green consumption and production (eco-labelling), valuation of ecological goods and services, environmental insurances, green niche markets, and so on – to make sustainability an attractive object of profit. But among all their options, applied science seems to occupy a prominent place. Indeed, as Arias-Maldonado (2012) bluntly puts it: '[i]t is through technological development that our relationship with nature can become *healthier* and *cleaner*, as well as, of course, *sustainable*.…[i]t is plain to see that a refined dominion of nature is but another name for sustainability…*[S]ustainability is domination* (70-71; emphasis added).

This declaration has the merit of simplicity and clarity: it presents sustainability as intrinsically linked to the scientific project of dominating earth mechanisms, and to market-based innovations. In brief, the socio-ecological crisis is amenable to a technological and capitalist fix, more innovations meaning more economic growth. Ecomodernist core ideas could not be better expressed. Nothing is more alien to green republican theory than this economicist and scientific capture of the ecological crisis. As already mentioned (Section 2.3), it is most unlikely that the framework which has given birth to problems can be the one within which they can be solved. Western people will belatedly and painfully learn that more and better technology will not solve socio-economic and political issues. In other words, the environmental crisis is not fundamentally (but only collaterally) a technological crisis; it is the crisis of a value system almost exclusively focused on monetary and material dimensions of existence. Therefore, as green political economy (Chapter 5) and green

[86] Manuel Arias-Maldonado is not officially linked to the ecomodernist movement, but my contention is that at least two of his major books (2012, 2015) and other articles quoted in this thesis show positions that can be affiliated to ecopragmatism/ecomodernism/neo-environmentalism.

republicanism (Chapter 6) show it is through social, political and political-economy innovations that solutions will arise.

Apart from the significant uncertainties which surround climate technologies, the use of geoengineering will most probably also reinforce socio-environmental injustices. As Hamilton (2013) shows, it might, indeed, exacerbate the impacts of the global warming in some areas of the globe, giving the power to those who are in charge of the 'global thermostat' to use it in their interests (p. 182). If one adds to this fear of unilateral development due to logics of sovereignty and national security imperative, 'the creeping militarisation of geoengineering' (ibid.) that could give birth to 'weather wars', one understands that Promethean recklessness is more likely to imply disastrous ecological and socio-political consequences rather than to bring about humane solutions to the ecological crisis. The technical approach to environmental problems, which we find in 'Geoengineering', 'Earth Systems Engineering', 'securitisation policies' or 'Terraforming' is not neutral but politically and normatively disguised: it contributes to commodify further our environment; it offers myths of scientific panaceas based on further colonisation and centred on Global North security; it legitimises an unchanged neoliberal political economic approach, further militarisation and might entail many unforeseen and unpredictable catastrophic ecological consequences. The project of geoengineering is a particular embodiment of *geopower*, synonymous with the loss of agency of an *Anthropos* caught in its 'geodestiny'. 'And finally', as say Bonneuil and Fressoz, 'the subject of the Anthropocene is constructed as a passive public that leaves solutions to geocratic experts' (2016: 93). Chapters 4, 5 and 6 will analyse how to resist the perverse logic of eco-capitalist-technocratic governance that is the form of power that has precisely created the danger of which it offers to save us, by creating new normative narratives, new institutions and by developing green citizenship, and ecological virtue.

This thesis opposes the 'neoliberal Anthropocene' or 'the official philosophy of a new technocratic and market-oriented geopower' (Bonneuil and Fressoz, 2016:

49). Indeed, the collaboration of science-based innovative management approaches gives to neoliberals a new momentum. If *politically speaking* this narrative involves an 'Earth System governmentality', *ontologically speaking* it requires '"post-natural" ways of defining and legitimising its agenda' (Arias-Maldonado, 2013: 11). For the neo-liberal Anthropocene, nature *must* be 'dead' and green politics must be 'without nature'. As Arias-Maldonado clearly points out, '[a]dopting a post-natural stance with regard to sustainability is a key part of the much-needed renewal of environmentalism itself' (2013: 428). By declaring that everything is human-constructed or that nature is 'dead', post-environmentalists intend to neutralise green traditional discourses on environmental (material) limits and legitimise Earth's further artificialisation and anthropisation. As Ellis proclaims, '[w]e will be proud of *the planet we create* in the Anthropocene' (2012: n.p.; emphasis added). The next chapter scrutinises the 'post-nature grand narrative' that heralds the Anthropocene as 'the end of nature' or, in other words, the promise of a world without nature – and without politics – in a 'good Anthropocene'.

2.5. Conclusion

This chapter has sought to demonstrate that the need for a more critical Anthropocene research agenda (as opposed to calls for a depoliticised and techno-focused 'good Anthropocene') has become pressing. The Anthropocene is defined as a new geological period where human impacts on the planet have become so significant that humanity is now a 'force *of* and *on* nature'. This chapter has shown that this novel situation is an opportunity for some scientists and academics to revive Promethean modern dreams of technological mastery of nature and to present these within an apolitical 'naturalising' narrative which puts science and experts at the centre. Against this optimistic and technocratic way of considering the 'new age of humans', Section 2 has rather evidenced that the Anthropocene is an epoch of great danger and indeterminacy – and for scientists themselves, an age of 'impotent power'

– which calls, therefore, for prudence and humility, for human decentring (Chapter 4), and for shifting the attention from ecological modernisation to the building of a sustainable global civilisation (Chapter 5 & 6). Against the ecomodernist techno-optimistic 'neoliberal Anthropocene', the alternative is a humbler 'democratic Anthropocene', in which humans repair the world instead of trying to reproduce or replace it.

The chapter has challenged the unifying narrative proposed by the proponents of the 'Anthropocene' concept according to which the new geological era would be the result of a 'natural' evolutionary history of humanity (what has been called the 'naturalising' of the Anthropocene) (Section 2.3). So far, this work has tried to show that the Anthropocene, far from being a consequence of 'natural evolution', is linked to specific socio-historical events such as the development of growth-based economies, and the unequal ecological and economic exchanges which globally characterised the rise of carbon-fuelled, consumer capitalism. Therefore, the Anthropocene, renamed for our purpose 'Capitalocene', raises issues of global (environmental) justice, uneven distribution of wealth and responsibility. It thus calls for further socioeconomic analysis explaining the historical processes that led to the predicament. This task requires more interdisciplinary research and, especially, the involvement of social sciences and humanities to accompany (or sometimes offset) the dominant natural science narrative of the Anthropocene (cf. Section 7.3). Lastly, this chapter has highlighted the fact that the Anthropocene is an opportunity for neoliberals to offer further market-based 'solutions' and technological innovations incentivised by capitalism to 'geo-manage' the earth, deepening by doing so the post-democratic turn of our societies (Section 2.4). Far from being an apolitical and a-socio-historical event, the Anthropocene is the result, among others, of alienating economic and political institutions, global inequalities, unregulated capitalist and financial interests, and technoscientific and administrative apparatuses. It is also deeply linked to the consumer capitalist system which developed after WWII (the

'Great Acceleration') and entailed the support at any price (including from citizens) of the ecological 'modernisation' of production rather than the reduction of consumption (which would be perceived and presented, in the context of a growth-based economy, as 'austerity'[87]). It is of particular importance to combat the official dominant narrative of the Anthropocene (the tale of 'scientific shepherds', 'technological priests' and eco-modernisation) to avoid the development of hazardous technologies and revive democratic institutions. The next chapter will critically analyse the philosophical and ontological standpoint of these 'Anthropocene boosters'; that is of those who want to engineer and manage the earth, and the curious alliance they made with some deconstructivist post-modernists, all proponents of 'the end of nature' narrative. Indeed, the concept of Anthropocene does not only open concrete technological and economic opportunities to construct further the planet; it also provides the high-tech postmodern-thinkers and the capitalist ecomodernists with a new philosophical way of justifying the disappearance of nature in the market technosphere of contemporary capitalism.

[87] It is a constant motto of dominant media to present degrowth objectives as 'a path to austerity' since, as Monbiot says, '[t]hey know that nobody ever rioted for austerity' (2003: n.p.). See Chapter 5.

Chapter 3

The 'Return of Nature' in The Capitalocene: Against the Ecomodernist Version of the 'Good Anthropocene'

> Thank God, nature is going to die. Yes, the great Pan is dead. After the death of God and the death of man, nature, too, had to give up the ghost. It was time: we were about to be unable to engage in politics any more at all.
> — (Latour, 2004: 25-26)

> Let us not…flatter ourselves overmuch on account of our human victories over nature. For each such victory it takes its revenge on us. Each of them, it is true, has in the first place the consequences on which we counted, but in the second and third places it has quite different, unforeseen effects which only too often cancel the first.
> — Friedrich Engels (1950: 18-19)

3.1. Introduction

This chapter addresses the 'end of nature' thesis, that is the idea that the world has been so socially constructed that the very concept of 'nature' has become 'superfluous'. Indeed, the deconstructionist constructivist postmodern attempt to dissolve the nature/culture divide has mainly served to secure the technological axis of the equation and the hegemony of the narrative which puts at the forefront techno-scientific hybrids and socio-cultural arrangements. In the new techno-postmodern compound, nature has disappeared or 'ended'. The celebration of artefacts and technologised nature is symptomatic of the 'technological rationality' denounced by

Marcuse (1941); that is the material and symbolic subordination of culture and nature to technological apparatuses and forces of capitalist production. Defined as 'techno-nature', the environmental world finds itself metaphysically undetermined and, therefore, ontologically amenable to limitless human engineered transformations.

Because Prometheans neo-greens believe that nature is a source of inert matter infinitely transformable, always susceptible to be rearranged through techno-science, they can deny the concept of 'ecological limits' and argue for an ecology 'without nature'[88] which opens the door to a post-political era where ecological issues are decided by economic and scientific 'experts' and actors of the market. Here the ecological crisis is mostly spelled out in technological terms: when the last piece of coal will have been extracted, it will be substituted, thanks to human inventiveness and technological innovations, by new energy resources; when more material capital will be needed, technological innovations will allow for more decoupling and decrease the need for material input. 'Prometheans believe that with enough energy iron can be turned into copper… which indeed it can be, though the amount of energy required is massive. Similarly, deserts can be turned into cropland, outer space can be colonized' (Dryzek, 2005: 57). In this view, adaptation to ecological changes is just a question of scientific know-how, political will to adapt markets' needs, and capitalist investments. That is why wealthy countries, equipped with organised states and markets, are considered by ecomodernists as very well positioned to correct ecological dysfunctionalities[89]. This position briefly summarises the way ecomodernists address the ecological crisis in the 'good Anthropocene'.

For postmodern techno-thinkers such as Bruno Latour or Donna Haraway, things are even more straightforward since nature has never existed: we were *always*

[88] On the inability of postmodernism to articulate a political economy of global environment destruction, see Barry (2007: 255 sq.).

[89] This outlook is opposed in Section 5.3. Worth noticing, the 'overshoot' of the planet is a material 'hard' fact: for the last three decades, for instance, more oil has been consumed each year than has been found in new reserves, these last ones being either difficult to reach (deep-water wells) or offering much poorer quality (tar sands). See Hopkins (2008).

already enmeshed in the techno-hybridist compound. As Bruno Latour says, '[t]hings are everywhere mixed with people; they always have been' (2003: 37). The technosphere has always encapsulated the biosphere and what is named the ecological crisis is nothing else than the normal production of 'monsters' that we should love, live along with and accept for what they are, that is our own productions or 'children' (Latour, 2012). As already outlined in the previous chapter, the originality of neo-greens is to give ecological modernisation a new momentum through the postmodern 'end of nature' narrative. Indeed, the hybridist ontology resonates strongly with the proponents of the 'good Anthropocene' scenario who want to transform the earth into 'rambunctious gardens' (Marris, 2011) or anthropogenic biomes ('anthromes'). This chapter analyses the common implications of neo-green theory and techno-postmodernism. It particularly demonstrates that both are wrong to underestimate nature's agency and the idiosyncrasies of natural phenomena. The emancipation from nature which defined modernity's humanism could paradoxically become an obstacle to the furtherance of human civilisations.

Section 3.2 examines the assault on nature as coming from two different sources. On the one hand, it is carried out by the 'hypermodern' camp; that is by techno-optimists who are willing to (re)engineer the earth, and by neo-greens who wish to see the growth-based economy continue, even at the cost of nature, and to further colonise technologically the planet (as well as others) or genetically and technologically adapt humans to dire ecological times. On the other hand, the assault on nature stems from postmodern techno-theorists, renamed for our purpose '*most*-moderns', who contend a hybridist ontology which eventually justifies the de/re-construction of the planet under the rule of technoscience and capitalism. This narrative does not only acknowledge 'a la McKibben', that 'nature had ended as an independent force' (1989: ix), but it extrapolates, from nature's history of humanisation, that nature as an ontological reality was somehow *always already* 'dead'. For post-nature theorists, the opposition between nature and culture, that is the

antagonism central to modernity, is theoretically flawed. Modernity has compromised itself into false dualisms that postmodern theory has dissolved. We now exist within the 'mesh' (Morton, 2007) or in an assemblage of entwined hybrid socionatures. Old tactics of preservation and protection of nature are therefore obsolete ('nostalgic' and 'romantic'), and future-oriented environmentalism must develop an 'ecology without nature' (Purdy, 2015; Vogel, 2015; Morton, 2007).

Section 3.2 contends that both ecomodernists and techno-postmodernists are still trapped in modernity's failures in the sense that they share the same modernist belief in a boundless technological progress that draws upon inexhaustible techno-natural resources whose limits can always be pushed back through scientific innovations. Both aim at defending and legitimating the post-natural ontology of the Anthropocene. As Lövbrand et al. show, ecomodernists and postmodern techno-thinkers fail to take account of the transformative implications of their post-nature narrative. Indeed, they remain trapped in the language of modernity 'which stipulates that the knowing human subject, through knowledge and reason, can tame nature. As a result, the substantive division between the human and the non-human world remains unchanged' (Lövbrand et al., 2014: 6). Cox also criticises the Anthropocene dominant argument for being caught into the human/nature divide: the anthropogenic discourse and analysis that both hypermoderns and mostmoderns contend, accepts 'the view that humanity acts *upon* nature, rather than *within* and *through* it – as a "web of life" '(Cox, 2015: 60; original emphasis). By doing so, the Anthropocene narrative 'reaffirms much of the same binary thought patterns that have contributed to the record of ecological crisis' (ibid.). Indeed, it is this chapter's contention that both neo-greens and Promethean scientists, as well as techno-postmodernists are rather *most*-modern or hypermodern than genuinely postmodern.

Section 3.3 shows that the support ecomodernists provide to geoengineering and the task they assign to new technologies (such as cognitive science, nanotechnologies, technologies of information, etc.) to reshape socionatural relationships in a 'sustainable' way places them in the very continuity of the modern

dream of techno-scientific mastery of nature. This section delves, indeed, into the arrogant narrative of control offered by ecomodernists which is supported against the cautious warnings launched by the scientific community and the growing anxiety and self-doubt over the type of 'sustainability' that such an unbridled domination entails. This section critically addresses Arias-Maldonado's ecomodernist attempt to 'capture' postmodern positions to justify an unapologetic defence of the human artificialisation, commodification, and reification of the natural world, and the 'greening' of the status quo. Finally, Section 3.4 shows that nature is not the inert matter amenable to all sorts of transformations that 'hyper moderns' or 'most-moderns' have imagined, but rather an 'uncooperative beast' which can rebel against human manipulations and express its 'revolt' to human attempts of control in the form of eco-catastrophes[90]. Building on the dialectical concept of 'non-identity' borrowed from Adorno (1973), this section contends that nature is never entirely natural nor entirely social: it is 'identical' – a product of human action – as well as 'non-identical', namely a process which escapes human power. Natural processes and complex feedback loops are known through disasters and dysfunctionalities. In this way, the 'end of nature' in the Anthropocene can be rather spelt out as the 'return of nature' in its most negative dimension; that is in the form of uncontrollable hazards and risks that put human and non-human's future in severe jeopardy. To fail to accept the vulnerability of human species in the face of complex natural rebound effects is, indeed, to fail to hear the call of reality or to recognise what Spretnak (1997) calls 'the resurgence of the real'.

[90] It is a typical view from ESS, as expressed here by Hamilton (see also Zalasiewicz et al. 2011), to present nature as a 'malevolent' force which would destroy humanity if humans would relax their grip (Mitchell, 2014: n.p.). If this work agrees with the fact that nature can resist humans' project of terraformation by bringing negative consequences for human life, it must be noticed that other narratives are possible such as those that see nature as a benevolent and nourishing mother (ICs).

3.2. The 'end of nature'?

There are countless examples of writings, today, that bemoan, celebrate, or just try to adjust to the new regime of truth according to which nature is 'dead'. The recent proposal to rename our geological epoch, 'The Anthropocene', or 'Age of Humans', is for some theorists another attempt to claim the 'end of nature'. 'Nature is gone', says Erle Ellis in an article eloquently entitled 'Stop trying to save the Planet'…: '[w]e now live in the Anthropocene' (2009: n.p.). When Bill McKibben started to speak about 'the end of nature' in his eponymous 1989 book, he had a few concrete developments in mind (which he lamented), especially the global warming and the ozone layer depletion that rendered extinct the idea of nature as something absolute and separate from us (1989: 54). The 'end of nature', as he saw it, was the end of nature *as we used to know it*. That was the end of a representation – of an independent, autonomous nature, free from human influence and impact. But not the end of nature itself[91]. In the same vein, when Carolyn Merchant (1980), evoked 'the death of nature', she meant the change of paradigm from nature understood in an animist, vitalistic and organicist way to a mechanic and reductionist view. What was into question, was our epistemic representation of nature and not nature *itself*.

Epistemological constructivism leads inevitably to material *constructivism* insofar as societies reinvent their environment according to their conception of nature. In this regard, the modern epistemological construction of nature as an independent, inferior, and separate entity through the nature/culture divide has opened the path to centuries of active manipulation that culminate, today, in proposed planetary geoengineering projects. One can stress here the importance of how ideas and representations, no matter how relative, partial, reductive they are, mould perceptions of the world and can become self-fulfilling prophecies. As

[91] However, Vogel (2015: 241, n.33) and White (1995: 183) are right to argue that McKibben un-reflexively travels back and forth between epistemological and ontological insights of nature (the idea of nature and the reality of nature).

Vetlesen (2015) says, '[w]e could not have engaged in the activities that now threaten to spell the end of nature (nature as we used to know it) were it not the fact that for at least four centuries we have regarded and treated (non-human) nature as dead' (p. 129). In the new Anthropocene era, the modern faith in the human/nature separation and the power of technology to achieve 'progress' or further anthropisation and capitalisation of the planet, is taken up by those 'hyper-modernists' who either uncritically promote the 'Anthropocene' concept or more normatively call for a 'good Anthropocene' (especially ecomodernists and some Promethean earth scientists). The idea of the 'death of nature' becomes, through the continuation of a 'pre-reflexive' narrative of progress, the real biophilic deprivation, physical death and depredation of nature, and one whose passing we should not mourn. This first assault on nature is typically modernist and relates to the old 'domination of nature' thesis which describes an on-going process by which nature comes progressively and increasingly under modernity's rationalising. For instance, for Arias-Maldonado (2012), as already mentioned, sustainability means nothing else than the *technological domination* of nature (pp. 70-71).

In the hyper-modern view, nature is still seen as an external force standing in the way of industrial civilisational processes. As Arias-Maldonado says (2016), the story of civilisation (and modernity) lies in 'the transfer of wealth from non-human environments into human ones' (p. 2). This creation and transfer of wealth from nature to humanity under capitalism (which Arias-Maldonado sustains) means, in the Capitalocene era, the transfer of assets from humanity to a minority (wealthy elite) who shapes the conditions under which the initial transformation of nature takes place. This second transfer of wealth is systematically omitted by ecomodernists who preserve by doing so the 'fiction' of a non-political and non-economic basis of the Anthropocene. This anti-political stance moulds in return the way to respond to the ecological crisis, that is through the greening of capitalism and techno-optimist options according to which 'technological innovation incentivised by capitalism and

the free market (coupled with a willingness to leave the planet), means that we can continue with our energy-intensive, consumer-intensive, globalised ways of life and socio-economic orders indefinitely' (Barry, 2016b: 109). The *Ecomodernist Manifesto* (Asafu-Adjaye et al., 2015) is a typical anti-politics blueprint for a high-tech and technocratic 'weak sustainable' society achieved through market-driven innovations and state incentives. Ecomodernism in this sense, and to borrow the title of Ferguson's book (1990), is a profoundly *Anti-Politics Machine*.

The assault on nature also stems from another source: that of the 'post-nature narrative' of the Anthropocene which provides a hybridist ontology where nature is reduced to 'techno-' or 'produced nature'. Contrary to the 'hyper modern' version of the Anthropocene, the postmodern post-nature narrative no longer conceives nature as a separate entity but as a fluid techno-reality mixed with the products (and waste) of technology: pollution, nuclear waste, modified crops, climate change, etc. are all 'naturecultures' ('monsters') that we need to accept as part of our 'postmodern' story. The aim is not any more to destroy the otherness of nature but to contend that *there has never been otherness*. The hybridist trope implies that nature and societies are co-created and that our environments are made of complex hybrids or heterogeneous socio-material assemblages. Indeed, to overcome the false dichotomies of modernity, postmodern and posthumanist thinkers such as Bruno Latour, Donna Haraway, Isabelle Stengers or Peter Sloterdijk (among others and with different orientations, the closest to the position of this thesis being Stengers) have tried to show how much nature and culture are entangled and how much our world is made up of imbroglios, assemblages and hybrid entities. According to this conception, everything is interconnected; everything is linked and attached: 'the non-human world', says Haraway, is dialogic… a co-productive participant in human social relationships' (quoted in Soulé and Lease 1995: 3). The world is made up of 'naturecultures': Haraway likes to cite the OncoMouse™ as an apotheosis of this mixed reality.

By so doing, post-nature techno-thinkers have refashioned nature as a flexible hybrid, a relational reality without solid content which can be easily deconstructed

and re-constructed by market forces[92]. Interestingly, Kingsbury relates the term 'hybrid' to the Greek *hubris*, that is to an 'outrage against nature' (2009: 75). In effect, to regard nature as an arbitrary construct, that is as not at all sacrosanct, is the best way to deconstruct not only the idea of nature but also all the elements of materiality associated with it. With such a view, ecology is no longer about protecting nature but about offering a better technological (and capitalistic) management of already existing or 'in-the-making' hybrids (Arias-Maldonado 2012, 2015). As Latour says, we must love our 'monsters' (2012: n.p.). Culture and nature cohabit here in the form of a socioecological regime which gives precedence to technology, science, and human agency. As Pellizzoni playfully says: '[a]s happens in George Orwell's *Animal Farm*, some agents seem to be more agential than others' (2016: 122)[93]. The path is therefore open for the dissolution of nature in a techno-social recomposition and, in that context, for the 'Global Manhattan scenario' suggested by Wissenburg (1998: 7). The rejection of the nature/culture divide by eco-socio constructivists and postmodern techno-thinkers does not work in favour of nature but rather benefits technology and artificial arrangements. Nature is subsumed within artefacts, which is typical of a monist or 'affirmative thinking'. The hybridist ontology (which concurs with a global capitalist outlook), describes reality as made of ever-changing networks where everything can be remoulded or re-composed at any time by technology. In such a view, our world is nothing more than a techno-natural continuum made of mixed socio-material assemblages, and cyborgs.

In the face of a position which denies the embeddedness of humans in biochemical and natural realities, 'the return to materiality' or the new 'object-oriented' ontology, promoted by Braidotti (2006), Barad (2007), Delanda (2006), and

[92] There is, actually nothing more 'de/constructivist' than the market, an entity that aims at transforming everything into saleable commodities circulating in fluid networks.

[93] For Arias-Maldonado who grounds himself in the techno-postmodern turn to contend nature's disappearance, 'we are all', nature included, 'artefacts. Or hybrids' (2012: 58) but *among artefacts, the humans have the highest degree of agency (*2012: 60; emphasis added).

Bennett (2009) in order to overcome the failures of constructionism and deconstructionism that have lost track, somehow, with the material world, sounded as a salutary promise: that of returning to natural realities and building a critical post 'post-nature' ontology. However, as Pellizzoni shows (2015, 2016), this new account of human agency in the framework of non-dualist and hybridist ontologies does not really differ from the technological monism denounced above where nature is seen as 'technonature', that is as an internal differentiation of society and capital. Indeed, what new materialisms contend is the ontological fluidity of reality which is a *contingent* key to a further capitalistic commodification of life[94]. As Bonneuil (2015) says, this story of 'connections, networks and hybridity cuts across most of the modernity's boundaries' (p. 24) but remains in the modernist framework by considering that human's agency, through the hegemony of cultural artefacts, is the normative driving force of the new composed world.

Both techno-postmodernism and new materialisms can, therefore, be understood as forms of socio-constructivism (or postmodern eco-constructivism) which see reality from the angle of technology and culture. They constitute, in this way, a *cultural monism*, namely the exact opposite of the *natural monism* developed by deep ecology that sees nature as the primordial container of all cultural contents[95]. Ecomodernists and techno-postmoderns especially oppose the relational ontology of genuine postmodern worldviews such as those of Smith or Zimmerman for instance, which aim at 'counter[ing] the modern ideological flight from body, nature, and place' (Spretnak, 1997: 223). A genuine postmodern normative worldview would seek,

[94] New materialisms *can* but *do* not necessarily lead to further capitalistic exploitation of the planet. It means that, like in the case of Promethean Earth scientists, it is not because an idea is put at work by capital forces that it is inherently capitalist. Braun (2014) shows for instance that if 'new materialisms' have been captured by capitalist thinking, they also have the potential for more radical trajectories.

[95] In his *Ethics* (1677) Spinoza has denounced the illusion according to which humans would be separated from the realm of nature. For the link between Spinoza's naturalism and Deep Ecology, see Naess (1977).

indeed, to decentre humankind from its arrogant and pseudo self-sufficient position; it would acknowledge human dependence, embodiment and vulnerability (Barry, 2012) and argue for the reconnection of humans with nature without wishing to go back to pre-modern societies[96]. As Lövbrand et al. show (2014: 12), a real radical post-natural narrative implies that we understand humans are intertwined with nature, as locally inseparable from the material world in which they are embedded, that is a world of biophysical properties and material artefacts. It also implies a strong reflexivity through which an attitude of humility and maybe even the practice of wisdom can be cultivated and fostered. As suggested in Chapter 4, the republican postmodern ontology, understood as an ontology of imbrication, rejects the strong anthropocentric turn of modernity and the projection of the human rational subject as separated from its material condition of life (soil-less individual); it repositions, therefore, the human being as a bounded and highly embodied subject 'inextricably part of the flux and flow of the world that others would presume to master' (Alaimo: 2010: 17).

Although ecomodernists build their theory on traditional modern themes such as the linear conception of progress, the domination of nature thesis or techno-optimism, they have found in the postmodern narrative of hybridity and in the post-natural ontology of the Anthropocene a new energy and justificatory purpose. The novelty of the ecomodernist ideology is indeed, to use the post-nature narrative to justify a(n) (anti)politics 'without nature'. The regime of 'constructed nature' which is revivified through the hybridist ontology and the 'Anthropocene' concept is itself a continuation by other means of what Escobar calls 'capitalistic nature': that is, a particular construction of nature which emerged in post-Renaissance Europe and during which nature was progressively 'ordered as a resource for us to use as we wish'

[96] For an account of the Green Republican Postmodernity (GRP), see Appendix A.

(1999: 6)[97]. In effect, the social construction of nature as an ideology can be traced back to the advent of mercantile capitalism in the 15th and 16th centuries and its industrial development in the following centuries. Capitalist theory and practice are grounded in the need to commodify nature in order to replace it by sellable products and services (such as lands, resources, etc.). As Castree says, '[u]nder capitalism humans relate to nature in a specific way, through *commodification* of natural products, and in so doing actively *appropriate*, *transform*, and *creatively destroy it*' (1995: 20; emphasis added)[98]. Nothing, indeed, is more constructivist than capitalism with its intrinsic need to appropriate and transform everything into the 'commodity form'.

Hence the post-nature ideology is nothing new in essence but has been given a new lease of life through the idea that humans are now 'shaping' the whole earth system in the Anthropocene. The fact that nature is a socially constructed hybrid was also a recurrent trope in intellectual movements such as social constructivism and post-constructionism in the 1980s and 1990s[99]. For instance, we can read in Escobar (1999: 2): '[a]s much as identities, nature can be thought of as hybrid and multiform'. The concept of nature has already been replaced by those of 'produced nature', 'social nature', 'second nature', or 'hybrid nature'. 'As a result', says Pollini, 'nonsocial nature is increasingly absent from the scope of inquiry of the social sciences' (2013: 26)[100]. The topic of 'constructed nature' has been present for a long time in the field of social sciences. For example, Giddens already claimed, almost three decades ago, that one of the consequences of modernity is that we live in a 'created environment' (1991: 124). For Beck, nature could not be any longer understood outside society (1992: 80).

[97] This process of commodification and reification of non-human nature for the sake of capitalistic interests has not always been a 'civilisational process' contrary to what Arias-Maldonado suggests throughout his works. For a critique of the capitalist reification of nature and its implications for humans, see Adorno & Horkheimer (2002), Marcuse (1969), Merchant (1980) or Shiva (1997).

[98] To deepen this aspect (the capitalistic creation of nature), see the 'production of nature' thesis within Marxism.

[99] See Haraway (1991), Cronon (1995), Escobar (1999), Macnaghten and Urry (1998), Braun and Castree (1998), Latour, (1987) (1993) (2004).

[100] For an immanent critique of social constructivism, see Mariyani-Squire (1999). For a critique of 'the ontological dissolution of nature in the social science', see Pollini (2013).

For Latour (1993, 2004, 2005), nature is always, already a 'quasi-object'. Haraway (1991), for her part, provided the 'cyborg' metaphor for the technological hybridisation of the human species.

The constructivist and post-structuralist social sciences which have at length developed the theme of the de-naturalisation of our environments have played into the hands of capitalism's ontological necessity to reshape nature again and again. Today, ecomodernists seize the opportunity given by the ESS's concept of Anthropocene to resume an undertaking that has been temporarily shelved due to the percolation of ecological awareness and growing anxieties among the public about the rapid and irreversible loss of nature[101]. By doing so, they perpetuate 'the social siege of nature' (Soulé and Lease, 1995) initiated by constructivists/deconstructivists but in a new sophisticated manner and with new sophisticated tools, such as geoengineering, hybridist and post-nature narratives, claims of the substitutability and reproduction of nature, etc. This thesis' contention is that the Anthropocene concept comes at the perfect time for green capitalists to put again on the agenda further techno-monetary 'transformations' (read: destructions) of nature. It is no accident that social constructivists are bubbling up and that ambiguous techno-thinkers such as Bruno Latour and Donna Haraway are 'making the buzz', followed by ecomodernists and transgressive, exuberant and 'hype' theorists such as Timothy Morton who promise a clean technological world embellished with rambunctious gardens. After all, as Arias-Maldonado puts it, the protection of nature might no longer be a social demand and 'many citizens may be satisfied with a weaker protection, provided that the number of preserved natural forms and landscapes is enough to keep *the appearance of naturalness* that is associated with the post-industrial

[101] It is my contention that the strong version of social constructivism which confuses 'discourses' and 'reality', material 'influence' and material 'production' can only prosper thanks to the support of the neoliberal institutions it serves.

enjoyment of "nature" ' (2015: 46). Thus, techno-postmodernism, as well as ecocriticism[102] and ecomodernism embody a form of *neoliberal environmentalism*. The fact that those theories are key elements of 21st century capitalist political economy in the age of information shines through their unapologetic appraisal of new techno-natural objects (genetic engineering like the OncoMouse), NBIC convergence (nanotechnology, biotechnology, information technology, and cognitive science), geoengineering, etc. – that is all technical innovations supported by advanced capitalism. Someone like Tim Morton can even declare himself as a 'herald' of consumer pop culture[103]. Those post-nature thinkers urge the Westernised world to immerse itself in the techno-consumer culture and to produce the technological innovations necessary to adapt to the new situation all the while continuing with 'business-as-usual'. In the meanwhile, those who cannot take part in the race (such as developing countries, rural or marginalised areas) are condemned to see their environmental conditions of life deteriorate.

Contrary to the programme advocated in this thesis which consists mainly of a theorisation of the cultural, economic and political changes needed to achieve an 'ecological civilisation', post-environmentalists accept 'the socionaturality of the modern world' as it is[104]. That is, they 'get with the programme as it were' (Barry, 2007: 260), working *with* rather than *against* modern-based consumer society. After all, as Arias-Maldonado blatantly puts it, 'it is unlikely that citizens abandon their smartphones in order to embrace the charms of a more embedded rural life' (2012:

[102] Ecocriticism is a critical approach to environmentalism pioneered in the 1990s in the USA which studies literature and the environment from an interdisciplinary perspective. It is today particularly embodied by Timothy Morton (2007, 2013).

[103] One of the comments posted by Tim Morton on his website about his 2007 book says: 'Dark ecology has the potential to be the punk rock or experimental pop of ecological thinking'. [Online] http://ecologywithoutnature.blogspot.de/2016/01/what-it-says-on-back-of-dark-ecology.html

[104] As Arias-Maldonado (2013) says '[t]he traditional green approach, founded on a moral view of the socio-natural relationship and inclined to a radical transformation of the current social system, now seems misguided' (p. 428)

118). Therefore, rather than defending 'a programme for ruralisation', the new strategy for mitigation and adaptation 'should be oriented to make possible the *continuity*, not the dismantling, of our current society' (ibid. 116; emphasis; added). Of course, by supporting such a radical *lack of change* in the way societies are dealing with the ecological predicament (that they prefer to recast as a 'good anthropocene'[105]), they are more likely to receive support from dominant neoliberal institutions (the academic world included) than those supporting attempts for a cultural revision of modern societies.

By dissolving nature into artefacts, post-environmentalists put an end to the traditional protection of natural ecosystems. Indeed, if nature is all human, is there any need to protect it or to critically reflect upon what we make of it? Ecomodernism represents, like old wine in a new bottle, simply the most recent attempt of green capitalism to justify human domination of nature in the public sphere, helping, therefore, decision makers to pursue their adjustment policies. The 'originality' of ecomodernism compared to the former tenets of ecological modernisation is the explicit political/political economy alliance it promotes between green(ing) capitalism, the picture of a 'good Anthropocene', and hybridist postmodern ontologies. This 'baroque' alliance (or what I referred to earlier as 'intellect maelstrom') leads to doctrinal simplifications.

For instance, if ecomodernists draw on ESS for the Anthropocene world picture of a 'new age of humans' (and human global dominion over the planet), they omit to mention the non-reductionist conception of Earth systems also brought about by ESS and post-normal science (Ravetz, 2006); that is the emphasis on the unpredictability of the Earth's evolutionary trajectory and nature's agency in the

[105] Arias-Maldonado explicitly criticises the word 'crisis' for bringing about the idea that there is no way out (2012: 3). He presents, thus, a flawed understanding of this concept since a crisis, initially used to describe the turning point of a disease, can bring about two different outcomes: death or recovery. A crisis is also a time when an important decision or change must be made…

Anthropocene. Ecomodernists mostly give a very anthropocentric and reductive account of agency (limited to capitalists, policy and technological elites as opposed to humanity in general, citizens and non-experts in particular). By doing so, they forget to take into account the agency of 'non-human actants', such as plate tectonics, solar radiation, volcanic eruptions, seismic activities, meteorite showers, natural erosion, just to name a few natural processes which can take place independently of human power (and sometimes even independently of human awareness). For instance, for Arias-Maldonado, it would be difficult to make sense of the Anthropocene without putting humans 'at the top of the agency-rank' (2016: 42). This statement makes clear that for ecomodernists, the Anthropocene can only be synonymous with human mastery and not with the 'non-mastery of mastery' that this thesis contends (Chapter 2). As Crist and Rinker warn us: '[t]o rip into the planet's rhythms, cycles, and interconnections, as the civilisation we have created is doing, signals human folly, not mastery. For one, the Earth system is ultimately unpredictable and more powerful than humanity's actions' (2010: 13).

A second simplification, linked this time to the hybridist theory they integrate, lies in the ecomodernists' omission of the postmodern warnings about the 'intrusion of Gaia' (Stengers 2015a, 2015b; Latour 2013, 2014) which is synonymous with looming disasters characterised by 'many manners of dying' (Stengers, 2015b: 9) all of which are the result of 'the intrusion of Gaia' (ibid.: 41) or the impossibility of resolving contemporary environmental crises. For Stengers, the Anthropocene is not the new name given to humans' glories but a time of crisis for which there is no recovery (namely a 'catastrophic time'). We are indeed living on the ruins of the Holocene, a relative stable ecological and climatic era which allowed the development of human civilisations. For Latour (2017), Gaia is unmistakably active and dangerous: it is not a passive incubator for our technological fancies or an inert object that could be appropriated without consequences. Gaia, as says Hamilton, 'juts through into our world as an intruder, a trespasser, a gate crasher' who 'is crashing the party [of progress]' (2014: n.p.).

Lastly, ecomodernists preclude the deconstructive critiques of human exceptionalism in the post-nature connectionist narrative or 'the blurring of boundaries' between humans and non-humans, which should at least theoretically entail the decentring of human predominance (Latour, Haraway[106]). On the contrary, ecomodernists remain highly anthropocentric: they ignore the ethical and ontological value of non-humans. They also omit the interconnectedness and relational paradigm that gives precedence to the creative and lively qualities of matter (See particularly Braun, 2008 and Bennett, 2009) and are oblivious of postmodern references to chaos theory and the new physics (Barad, 2007).

While uncritically appropriating insights of the hypermodern narrative of control and of the postmodern narrative of hybridity ('nature is us'), the ecomodernist picture of a 'good Anthropocene' remains entirely situated within the prejudices of modernity by supporting a blind faith in technology, by holding the domination of nature narrative, by defending human exceptionalism (and thus the persistent dualism between nature and culture) and by ensuring the sustainability of Western capitalist imperialism (neocolonisation). Ecomodernism is therefore a new form of pre-reflexive modern theory which allocates little space to doubt, uncertainties, and caution. In short, it is an arrogant, flatly techno-optimist[107] and hubristic orientation of anthropocentrism that presents a super-powered humanity able to control and rearrange the natural world according to its desires. It also rehearses the very modern conception of progress and freedom as an escape from nature's determinations and limits (see Arias-Maldonado, 2016).

[106] For Latour who comes from the field of Science and Technologies Studies (STS) and Haraway, who comes from feminist science studies, this blurring of frontiers ends up to be in favour of machines.

[107] According to Nordhaus and Schellenberger (2011a), we should turn our back on this ecotheology which bombards us with apocalyptic fears of ecological collapse and turn, instead, toward a 'theology of ecological modernisation', which envisages technology as something 'natural and sacred' (2011c).

The close intertwinement between nature and culture and the fact that human actions influence, even on a large scale, natural processes is nothing that (even) 'classical' environmentalists would deny. But the idea that nature is 'dead' goes further. From the political economy point of view, it ignores the socio-historical fact that rather than being neutrally 'dead', nature has been/is being 'destroyed' and 'devastated' by historical and social identifiable processes such as class relations, technologies, growth logics, etc. - all processes encompassed by Moore (2015, 2016)'s concept of 'Capitalist nature', that is a second nature constructed according to the modern requirements of rationality, bureaucracy and capitalistic interests. In Foucauldian terms, nature has been 'governmentalised' (Escobar, 1999: 6). From a philosophical outlook, the absence of full characterisation of what 'nature' and 'society' are in the new hybridist ontology or in what Tim Luke calls 'Urbanatura' (1997) facilitates the absorption of nature into plastic capitalistic flux and flows (Pellizzoni 2016, Braun 2014) while leaving a remainder which manifests itself in the form of ecological crises (See Section 3.4). Indeed, postmodern eco-constructivism tends to forget that nature's agency still exists *in* and *outside* the socio-natural compound they describe as 'techno-nature'.

To find out to what extent nature is independent of human actions and conceptions is precisely the challenge of a 'critical' understanding of nature that overcomes essentialist and constructionist pitfalls[108]. In particular, any transformative political ecology, which aims at opposing the limitless economic expansion contained in the business-as-usual scenario, needs the external (relatively objective) concept of 'natural limits' – such as those given by science (Chapter 2) but also normative ones given, for instance, by those cultures which have always lived attuned to feedbacks from their ecosystems to effectively coexist with them. McLaughlin (2003) names

[108] Critical realists, for instance, recognise the epistemological impossibility to know the Kantian 'thing in itself' (Bhaskar, 1979: 1989). Critical constructionists acknowledge that there are natural limits ('nature out there') which constrain human actions and cognition. For instance, for Bloor, environmental constructionism 'is compatible with an underlying materialism' (1991: 175).

'ecosphere peoples' those communities who derive their forms of life from the ecosystems within which they exist, not so much in the name of rationality but rather because of culturally enforced and transmitted myths, stories, spiritual or religious beliefs – in short, traditional wisdom. If those people fail to coexist with their ecosystems, the sentence is almost immediate because of short feedback loops: they perish or migrate. McLaughlin opposes them to 'ecosystem peoples' who can avoid for a long time the consequences of their actions because they derive their livelihoods from distant ecosystems that they plunder or destroy (pp.106-107).

If one cannot avoid that humans appropriate and transform the world the question is to determine the extent to which humans can alter nature, appropriate or even destroy it. For that purpose, the concept of nature *as not identical with society* (that is contra the concepts of 'techno-nature' or 'naturecultures')[109] is necessary. It is no coincidence that ecomodernists such as Arias-Maldonado (2012, 2015) make so much effort to discredit the notion of 'natural limits'. This concept is reduced by the ecomodernist thinker to an outdated Malthusian[110] core idea that proves to be wrong and misleading (2012: 31). According to him, there are, indeed, no absolute natural limits but only social limits to human activity that can always be extended according to decisions made on behalf of social consensus (p.14) thanks to more and better technology (as proved the increase in farming productivity). Here again, ecomodernism proceeds by simplification, feigning to ignore notions of scale and qualitative leaps despite these being abundantly evidenced within Earth Systems Science (ESS). If in human life many things are negotiable, this is not the case for the ecological conditions which makes life possible – or not, as shows the concept of

[109] Washington is certainly right when she says that 'suggesting Nature "ended" just plays into the anthropocentric hands of those who claim everything is now "culture" ' (2013: 77).

[110] As far as I know, Malthus has never been a core reference of the democratic tradition of environmentalism in which this thesis arises. Once more Arias-Maldonado proceeds through the demonisation of his ideological enemy as a main mode of argumentation.

'ecological ceiling' (Appendix E). Social consensus or not, earth's atmosphere has been so modified that climate related disasters are already occurring all over the globe (droughts, cyclones, hurricanes, floods, etc.). The concept of earth systems' resilience, dear to ecomodernists and neo-conservationists[111], fails to acknowledge that it is not nature's resilience which is into question insofar as the earth – which does not need to be a 'home for humans' – will continue on its route, but the very survival of human and non-human life on the planet, or in other terms, the resilience of life mechanisms. If resilience means for ecomodernists that the natural world will always offer humans a welcoming home, then it is a tragic mistake. As Hamilton puts it, '[t]hroughout its geo-history the planet has never "bounced back" from one epoch to the previous one. The Earth has now crossed a point of no return; its great cycles have changed, the chemical compositions of air and ocean have been altered in ways that cannot be undone' (2015: 237). Hamilton (2015) compares the ecomodernist narrative of the 'Good Anthropocene' to a theodicy intended to make us believe, like in Voltaire's caustic tale on Enlightenment's optimism, that 'everything is for the best in the best of all possible worlds' (*Candide, ou l'optimisme*, 1759)[112]. Denying the adverse consequences of the Anthropocene, ecomodernists have 'instate[d] an "anthropodicy" in which human-directed progress takes the place of God' (Hamilton, 2015: 234). In such a view, Western technologically fitted humans, like gods, are capable of transcending natural limits: it is not nature that rules over man but man who rules over nature.

It is true that the issue of 'limits' can always be subject to discussion: we can accept to live on a hotter, more unpredictable and dangerous planet, but the tipping points put forward by ESS concern the possibility of the continuation of life itself on

[111] 'Nature is so resilient that it can recover rapidly from even the most powerful human disturbances' (Kareiva et al., 2011: n.p.).

[112] This blissful view is particularly expressed in the Ecomodernist Manifesto (2015) where ecomodernist spokesmen explain that thanks to human creativity and inventiveness, we will create a world – maybe a 'rambunctious garden' as Marris (2011) proposes – where 'nearly all of us will be prosperous enough to live healthy, free, and creative lives' (2015: n.p.).

earth, a life without which no discussion is further possible[113]. The pseudo 'realist constructivism' defended by ecomodernists, which puts them in position to evaluate 'how much nature we need' (Arias-Maldonado, 2012: 87) – while scientific measures are themselves only indicative and cautious, often below reality – is an adventurous wishful ideology and a dangerous human experiment, that only draws its success from its obvious collusion with the biophilic neoliberal agenda (which incidentally explains its academic and media success).

To prevent ecological catastrophes from becoming the 'norm' of human life, the acknowledgement of biochemical and geophysical borders that should not be exceeded is necessary. So too are the subsequent transformations of our societies. Indeed, only if nature's laws and limits are acknowledged, can some constraints be put on human metabolic developments, that is on human artificialisation, commodification, and reification of the natural world. The 'magic trick' that strong social constructivists and eco-constructivists propose is to dissolve the notion of nature and natural forces into social constructions (artefacts and discourses), ignoring, therefore, the material elements of Earth's life support systems. The 'ecological crisis' itself and all its dramatic material components (the disappearance of Arctic ice cap, rising temperatures and sea levels, resource depletion, the concentration of carbon dioxide and methane in the atmosphere, species extinction, pollutions, etc.), especially remind us that nature is neither entirely subsumed within the human power nor in control. As Adorno says, 'objects do not go into their concepts without leaving a remainder' (1973: 5). Contrary to the anthropocentric fallacy which regards humans in the Anthropocene as the masters and creators of nature, this thesis contends that the Anthropocene should rather be an opportunity to re-think our place on the planet,

[113] However, and faithful in that respect to their commitment to a 'good Anthropocene', ecomodernists relativise the effects of global warming. Arias-Maldonado, for instance, contends that 'an increase in the Earth's temperature could very well… produce an eruption of ecological diversity' (2012: 91).

and to accept the fragility and vulnerability of the human species in the face of complex and unpredictable natural phenomena. This gesture towards 'planetary modesty' – maybe less 'appealing'[114] than the hybridist post-nature narrative which promises us new high-tech growth-oriented innovations to go on 'bio-fuelling the hummer' (Barry 2016b) – is, however, the only ecological option which can bring more justice (inter-humans, inter-species and intra-generations justice), and an improvement of the socio-economic and environmental predicament. The great challenge that lies ahead us is not the further humanisation of the planet nor its mastery but rather the *further humanisation of humanity* and *the mastery of our mastery*.

3.3. EES, Ecomodernism and geoengineering: the (hyper)modern narrative of mastery and control

From the ESS perspective our planet is going through a huge change, leaving behind the thousands of years of exceptional stability of climate temperatures and sea levels that characterised the Holocene, to enter a new epoch of climate uncertainty and significant ecological transformations (Chapter 2). However, and in spite of the warnings contained in the very notion of Anthropocene, most key proponents of the concept welcome the Anthropocene as being 'the beginning of a new geological era ripe with human-directed opportunity' (Ellis, 2012). We can find here Ellis (2009, 2012), Crutzen (2002), Crutzen and Steffen (2003), Steffen, Crutzen, and McNeill (2007), Crutzen and Schwägerl (2011). All of them offer a 'science-driven' narrative which replays the modernist dream of mastery and control of nature. For instance, in a famous piece co-authored by Crutzen and the German environmentalist journalist Christian Schwägerl, we read: '[t]he long-held barriers between nature and culture are breaking down. It's no longer us against 'Nature'. Instead, *it's we who decide what nature*

[114] '[N]ature', says Morton 'is… the quintessence of kitsch' (2010: 169). Or, in another passage: '[e]cological culture is… soft and organic, old-fashioned and kitschy, while technoculture is hard, cool, and electronic' (ibid.: 26).

is and what it will be' (2011, n.p.; emphasis added). Astrophysicist Lowell Wood, likewise, embraces the prospect of geoengineering: 'we've engineered every other environment we live in – why not the planet?' (quoted in Hamilton and al., 2015: 9). For Mark Lynas, author of *The God Species*, '[n]ature no longer runs the Earth. We do. It's our choice what happens here' (2011:8). Stewart Brand's proclamation is probably the acme of this Promethean vision: *'[w]e are as gods, and we have to get good at it*' (1968: n.p.; emphasis added). It seems obvious that those eminent eco-constructivists, some of them being members of the Breakthrough Institute[115], make a confusion between 'human-induced planetary change' and 'human planetary control', thinking that the extent to which we alter the planet gives us control of it. In their defence, those statements could also mean that our largely unconscious global environmental destruction needs now that we, consciously this time (under the stewardship of global managers and experts), 'manage' the planet[116].

If Crutzen and Schwägerl deny that the Anthropocene, understood as a name which 'highlight[s] the immense power of our intellect and our creativity, and the opportunities they offer for shaping the future' is 'another sign of human hubris' (2011: n.p.), for Arias-Maldonado 'a bit of prometheanismus seems hard to avoid' (2012: 70). Those discourses reflect the old dream of mastery typical of pre-reflexive modernity. Indeed, by closely associating the progress of humanity to the developments in science and technology, they are still 'largely trapped inside the enlightenment tale of progress as human control over a passive and "dead" nature that justifies both colonial conquests and commodity economies' (Plumwood, 2007: 1). But because of the technological level now achieved, the modernist logic is pushed

[115] Mark Lynas and Steward Brand are co-authors of the Ecomodernist manifesto (2015). Steward Brand and Erle Ellis are senior fellows of the Breakthrough Institute. Steward Brand is also the cofounder and president of The Long Now Foundation. [Online] https://thebreakthrough.org/about/people

[116] I owe this point to Zev Trachtenberg. However, this interpretation misses the clear Promethean tone of the quotes listed above.

to its upper limits and becomes a hypermodern narrative where humans are not '*like* masters and possessors of nature' but rather like *real* demiurgic (geological) forces unable, however, to anticipate the implications of their actions. As Hamilton quipped: '[t]he Moderns are convinced it's a party with no end. The eco-Moderns go further. "Yes, yes", they agree, "we have entered the Anthropocene, but that is just another phase of the party, which can only get better". They have a name for the next phase of the party, uniting two words we thought would never be put together, the "good Anthropocene" ' (Hamilton, 2014: n.p.)[117].

For ecomodernists, the so-called 'natural world' has been little by little so shaped by human activities, through the progress of science and technology and the rise of capitalist economy, that the otherness and exteriority of nature have almost disappeared: we have entered a 'post-nature' era, which needs, in turn, 'post-environmentalist' thinkers as opposed to 'outdated', 'conservative'[118], 'romantic'[119] and 'politically radical' environmentalists. The post-environmental theory works like a self-fulfilling prophecy: it allows for more hybridisation (read: destruction) of nature by techno-capitalistic apparatuses, and therefore, forces humanity to engage in more rationally engineered substitutes designed as market 'equivalents' – namely technology and capitalist-driven investments – to survive. And the ecomodernist to warn us: '[r]eality will be much more mixed and hybrid than its current representations' (Arias-Maldonado 2012: 82). This preference for human-made capital vs natural capital, and for the thesis of 'strong substitutability' over the one of 'strong sustainability' (see Section 5.2) means that 'a part of the natural capital that is not critical may be replaced for human-made capital, but it may also be the case that

[117] For another metaphor of the 'party' in the Anthropocene, see Ferrando (2016 : 160), or the ' Prelude' of this thesis.

[118] Arias-Maldonado (2012) identifies ideas such as human duties towards nature or the necessity to 'radically transform the current economic social organisation' as '*some old green tenets* that should be questioned' (1-2; my emphasis).

[119] For a critique of 'romantic environmentalism', see Symons & Karlsson (2015).

we do not need to make this substitution, *so that such natural capital is simply exhausted and forgotten'* (2012: 83; emphasis added).

Given the complexity of natural phenomenon and the multiple interactions at stake in the production and continuation of life on earth, it is doubtful that natural capital and artificial capital are just interchangeable as (in)famously suggested Krieger in his 1973 article 'What's Wrong with Plastic trees?' Not only the efficiency of such a strong version of substitutability is absolutely not demonstrated but also, as Gorz puts it, '[t]he preference for natural, self-regulating systems over systems relying on experts and institutions (…) should be defended as a rational choice, in both political and ethical terms – *a preference for decentralised self-regulation over centralised other-regulation'* (1980: 19; my emphasis). Contrary to the services provided by techno-capitalistic industries and institutions, nature is free and the knowledge required to transform it productively is not limited to a small elite of experts. Taking the expression 'age of human' at face value, geo-constructivists, that is those who support technoscience and geoengineering as a necessary tool to solve human ecological problems, find in the Anthropocene a new energy to pursue the subjugation of nature by technological means, and with minimally disruptive normative or political commitment beyond the promise of continuing 'business as usual'. The conquest of nature can continue whether in the name of a techno-optimism that we thought socio-ecocatastrophes such as Chernobyl or Fukuyama had brought to closure, whether in the name of market economy and/or civilisational arguments. For instance, as mentioned earlier, the transfer of wealth from ecosystems to capitalistic institutions (and the subsequent too rarely elucidated transfer of wealth from the majority to an elite) is seen as a pillar of Western civilisation (Arias-Maldonado, 2016).

In this very modern narrative, (techno)nature is constitutively and by definition deprived of autonomy and agency and supposed to comply with all the transformations, arrangements and manipulations planned by the new Dr. Strangeloves. Despite their attempts to adopt a postmodern hybridist narrative,

ecomodernists still see nature as an amenable external matter waiting for its anthropisation. The colonisation of the earth can go on: the geo-power will now regulate the globe's thermostat and reconfigure the living beings on the planet[120]. Geo-constructivists, in this regard, just ask us to redouble our faith in modernist rationalism and technological solutions. However, as Hamilton asks: 'how can we think our way out of a problem when the problem is the way we think?' (2013: 182). Promethean ecomodernists seem to have lost sight of the fact that Anthropocenic scientific studies are not only concerned with dreams of mastery but also with nonlinearity, the existence of critical thresholds, of bifurcations and stochasticity, or in other words, with doubt, uncertainty, irreversibility, and unpredictability; that is, conditions and states which are the opposite of mastery or at least of confident and arrogant assumptions of mastery (Chapter 2). Brown et al. very rightly note that 'complexity may lead us to a position of humility as we realize how little we understand of Earth's systems or the effects of our actions on them' (2010: 243). The Anthropocene will be an era of considerable instability for the Earth system, which might turn out to be threatening to human life (even though temporarily profitable for a minority of stock-holders, experts, politics, businessmen, and academics who build their careers on producing capitalist compatible theories).

As Hamilton recalls, warning us and geoengineers, the planet is a 'complex and uncooperative beast' that might not react as planned to the manipulations of the atmosphere (2013: 37). Nature, indeed, is not only *natura naturata (*passive matter) but also *natura naturans*, a self-causing and self-productive reality, an active process power that ceaselessly and inventively generates new forms of existence. In spite of its entangled relationships with culture, 'nature retains its exteriority, otherness, and agency' (Baskin, 2014: 10). The consequences of the denial of a natural agency – which reappears in techno-postmodernism under the unclarified concept of 'Gaia' – are enormous for ecology. If everything is produced and reproduced, if natural

[120] Some techno-ideologues even think of creating a human species able to adapt to climate change. On human genetic engineering, see Liao et al. (2012).

products are nothing more than an internal differentiation of society and production processes ('commodities in the making'), then no normative limits to the social and capitalistic appropriation (and therefore spoliation) of the natural world can be set up. As Cafaro says, preserving nature 'involves setting limits to human demand on nature, not endlessly accommodating them. It involves setting limits to the degree of human influence that is acceptable … This, in turn, limits the extent to which real conservationists can accept the dominant trends of the Anthropocene' (2014: 138).

Without deeper recognition of natural limits – not for the sake of nature itself which, as already mentioned, does not need to be a 'home for humans' and which will continue its path with or without humans but for the very survival of human and non-human life on earth – and without the recognition of our dependency on healthy ecological systems, no ecology worthy of the name, can exist. To forsake 'the bounds of the ecological possible', an expression which officially defines the concept of sustainability (Brundtland Commission 1987: n.p.), means nothing less than to lose any *normative* means of resistance against the destruction of the living world entailed by globalised neoliberal capitalism. While philosophical debates over the existence or non-existence, life or death of nature are going full blast in the backrooms of the academic world, the material reality outside is also doing its way. One of the central paradoxes related to the concept of Anthropocene is probably that just as the impact of humans on ecosystems has become so significant that it prompts some to celebrate the 'age of humans', the survival of humanity has never been so much challenged and under global threat. Can the party (of progress) really go on without being interrupted by the concept of 'nature'? The next section shows that although denied, mocked, and despised, nature, this 'uncooperative beast' ('Gaia'?) is intruding, trespassing and gate-crashing the party of the Anthropocene, which reveals itself for what it really is: the great age of humans' impotent power, fragility, and vulnerability. Indeed, nature is never merely a social product, neither a pure raw material that passively awaits the

human inventiveness. It is a complex system that can wake up at any time. As Callicott says, 'nature is dead. Long live nature!' (1992).

3.4. The return of nature (nature as 'non-identity') in the Anthropocene

The ecomodernist dream of mastery of a (techno)nature amenable for manipulation and for substitution, and the 'postmodern' conception of eco-social assemblages under the hegemony of the technosphere are two anthropocentric theoretical frameworks which contest nature and lead to anti-naturalist and anti-ecological consequences. In this way, rather than being called 'post-environmentalists', ecomodernists, ecopragmatists or neo-greens should be better requalified as 'anti-environmentalists'. They typify a form of techno-capitalocentric hubris that fails to recognise the value of nature's agency and therefore the existence of human vulnerability and fallibility. Indeed, as Macgregor says, '[c]ontemporary efforts to "combat" climate change through techno-science and to foster "resilience" through environmental management can be seen as symptomatic of *delusional* human exceptionalism' (2016: 621; emphasis added). Ecomodernists and techno postmodern thinkers are both affected by the 'superhuman' syndrome and the belief that the future of humanity will be technological or will not be at all. By so doing, they fit perfectly in the post/transhumanist logic which wishes to see the 'obsolete' biological humanity disappear in favour of cyborgs and machines[121]. By uncritically praising techno-science and erasing ontological natural limits under the pretext of 'constructed natures', they open the door to further human-caused degradation of the world. Notably, the complacency of ecomodernism towards the intensifying capitalistic organisation of the world concerning how human societies should be shaped and how non-human nature should be treated, means its views are very attractive to the

[121] Cf. the concept of 'technological singularity' that Ray Kurzweil (2010) uses to depict the creation of superintelligence that might dethrone biological humans.

advocates of the status quo, those who want to go on maintaining the same patterns of development and (unsustainable and distributionally unjust) ways of living, including attendant injustices, power and wealth inequalities.

In such a view, the Anthropocene means nothing less than that the phenomenon of anthropisation has become so extended that policies of environmental conservation are now outmoded. Our impact on the world, it is argued, is so pervasive that the traditional environmental goals of protecting, restoring, and valuing natural environments are just romantic pipe-dreams, like the human virtues of humility, prudence, and restraint which accompany green radical political projects like degrowth or post-growth. If nature does not exist and has, maybe, never existed, why bother protecting it?[122]. An article in *The New York Times* written by environmental professionals (including the chief scientist for Nature Conservancy), 'Hope in the Age of Man', illustrates this worrisome moral and metaphysical perspective. It argues that viewing our time as 'the age of man' is 'well-deserved, given humanity's enormous alteration of earth' and concludes that because 'this is the Earth we have created', we should, therefore, 'manage it with love and intelligence … We can design ecosystems…*to new glories'* (Marris et al., 2011: n.p.; emphasis added). Maybe it is here necessary to add that we shall also 'love our monsters', that is, positively embrace all the undesired outcomes following ecosystems' destructions reconsidered as '*new glories'*...

The condemnation of archaic and old-fashioned romantic positions that naively aimed at 'protecting' and 'preserving' nature (while Western people show legitimate unwillingness to abandon their I-phones and modify their styles of life…), the optimistic utterances about the 'good Anthropocene' as well as the denial of planetary boundaries, give the ecomodernist Anthropocene supporters a surprising

[122] As Hamilton shows, those views are factually contested by the Wildlife Conservation Society who estimates that 26% of the Earth's land may be classed as 'last of the wild' (Hamilton, 2013: 188).

air of *déjà-vu*. Indeed, the picture looks like a reappearance of the glorious years of the 17th century, except for the fact that the new Prometheus knows that 'our powers may yet exceed our ability to manage them' (Ellis, 2012: n.p.). In other words, we know that we will produce monsters (which are called 'hybrids' for more convenience). Ecological catastrophes are indeed the material and unequivocal signs of nature-as-other's resistance, of the non-identity of nature, or what Adorno calls the 'non-mediated' because it is not reducible to concepts. As O'Connor explains, there is 'an irreducible, nonidentical moment' in our experience of reality (quoted in Cook, 2011: 37). There is a 'surplus' in nature that can never be summarised in a final synthesis. This surplus is displayed in our experience in the form of ecological tragedies and risks.

The lesson to be learned is that nature can never be totally subsumed under social practices and that its own logics and meaning must be respected to avoid tragic feedbacks loops or negative consequences. What is needed, therefore, is a reflexive form of 'societal relationships with nature' that would respect its 'non-identity'. That is, to focus on reconceptualising our relationship to nature as opposed to dominating nature per se; or, in other words, to control our relationship with nature and not to aim at controlling nature. The notion of 'non-identity' borrowed from Adorno (1973) defines what, in nature, is ungraspable and unknowable by concepts and therefore what escapes the process of domination, as well as socio-constructivist discourses. Adorno, as Hailwood explains, criticises the fact that instrumental reason has attempted [and still attempts] to override non-identity, that is to 'reduce everything to the graspable' (2015: 132) – what St Augustine called the 'lust of the eyes'. Hypermodernity is unable to respect nature's non-identity while postmodern eco-constructivist thinkers mostly deny its existence. To ignore nature's non-identity or, in other words, to pursue the domination and appropriation project, entails the 'return of nature' on the scene of human history in the form of biological dysfunctionalities and eco-catastrophes.

On the one hand, nature is a social construction: nature is constructed discursively through language and, empirically, metabolically, in and through human transformative practices. But, on the other hand, through the dialectic interdependence of nature and society, nature produces society and also remains a principle of production on its own, displaying processes that societies cannot control[123]. The dialectic perspective criticises the subsumption of nature under the purposes of society, namely, the technical and symbolic project of natural capital substitution by built capital. Indeed, such a project dismisses the natural rootedness of societies, exposing them to the threats entailed by the 'omission' of the natural processes that *also* inform them (the 'return of nature' under the form of risks and catastrophes). Moreover, it locks up societies in the logics of 'identity thinking' according to which things exist only to the extent they fit into human' concepts and serve human interests. For that reason, societies ignore the non-conceptual content of nature – its Otherness – and are unable to accept and respect nature's agency.

The concept of Anthropocene, which embodies those two pitfalls is, in this regard, 'tautological': it substitutes *unity* for *diversity* (for instance the *Anthropos* as a homogeneous actor; cultural artefacts for natural diversity), *simplicity* for *complexity* (the complexity of feedback loops and Earth's singularity being sacrificed on behalf of reductive causal laws), *identity* for *difference* (nature being declared identical to society while it is also non-identical). An adequate concept of society would acknowledge the extent to which we are part of, not only apart from nature, and would cease to oppose humanity destructively and self-destructively to nature. The failure to acknowledge the autonomous, complex and vibrant agency of nature might otherwise lead to more tragic 'ecological hazards'. As Brand et al. say, 'certainly, the process of modernity is based on an increasing *control of nature*, but this domination does not lead to an

[123] Spretnak already denounced the 'anthropocentric orientation of humanism' when she declared that '[i]t is hubris to declare that humans are the central figures of life on Earth and that we are in control. In the long run, Nature is in control' (1985: 234).

increasing *control over nature'* (2008: 12; emphasis added). Rather, the relentless project of commodification and objectification of the world rebounds in the destruction of natural processes on which humans and non-humans depend to survive. This is the paradoxical lesson of the Anthropocene, the 'age of humans' being also the era in which humans discover their existential fragility within the mesh of biological and ecological dependencies. Indeed, the embodiment and embeddedness of social processes is not just technological but also biological. The more this crucial fact is ignored (wilfully or other), the more societies will have to face uncontrollable reactions from nature that translate in forms of destructive ecological risks like climate change, the acidification of oceans, the appearance of dangerous viral microorganisms, radioactivity, atmospheric pollution, etc.

At the very time when nature is declared 'dead', natural processes are making their comeback in the form of uncontrolled phenomena. The world is, indeed, more and more confronted with the unintended consequences of attempts to dominate nature. The uncontrolled hybrids (or 'monsters') we create and the risks for living beings they entail show that we are less and less able to control the impacts of our actions. This experience proves that a reality foreign to human constructions blows up in our faces. Shall we call it 'non-identity' 'Otherness' or 'Gaia'? Environmental hazards are, indeed, a consequence of the remaining natural agency in the socio-ecological compound. There is a widening gap between our capacity to influence nature and our inability to control the consequences of our deeds. It is very likely that the Promethean attempts offered by Anthropocenologists to resolve this contradiction (that is geoengineering and more economic management) will only dramatically expand the gap.

We thought that the increasing reflexivity (that is increased reflexive knowledge) concerning the ecological crisis would have favoured other types of relationships with nature than the capitalistic forms of dominance, appraisal, and appropriation of nature. 'Traditional' ecologists have tried to put at the forefront some forms of knowledge and practices that cultivate different, more respectful,

treatments of nature, for example, non anthropocentric approaches, the ecofeminist 'ethics of care' or ecological humanism (weak anthropocentrism). However, they did not count on the infinite capacity of capitalism to invent new ways of bouncing back to pursue the planned and deliberate destruction of the Earth for the sake of short-term economic profits and interests of a small elite. The failure to reinvent our societies leads to the growing fracture between environmental awareness and actions: everywhere, 'global-scale indicators show that humanity is moving away from sustainability rather than towards it' (Fischer et al. 2007: 621). Despite the evidence and deepening consensus among scientists, the situation is worsening. As Barry said, we might be the first species '*to accurately document our own demise*' (2012: 1; emphasis added). 'The Anthropocene concept should, therefore, be seen as a warning sign rather than an appeal to new times of glory. Otherwise, the perspective stretching in front of us (and future generations) is the one of a humankind left without a world to inhabit or, supreme irony, an anthropised planet without an *Anthropos*.

3.5. Conclusion

As argued in this chapter, anthropocentric social constructivists and ecopragmatists do not acknowledge the reality of nature outside of it being essentially a human artefact. According to them, nature is, ontologically speaking, reduced to a techno-nature amenable to social and scientific arrangements desired by policy-makers, Promethean scientists, and market actors. The denial of nature's otherness, which dismisses the concept of 'natural limits', leads to a 'cultural resourcism' where non-human nature is considered as an *always-already* technologically mediated imbroglio that (some) human beings can manipulate at their discretion. Contrary to that position, this chapter has argued that nature has a meaning in addition to its material production and symbolic construction by human practices. That is, something (*etwas*) exists outside us, which is not given directly to us but appears

through 'nature's non-identity' phenomena (such as ecological catastrophes). This position could be named 'critical realism' (Bhaskar 1975, 1989) or 'subtle realism' (Hammersley, 1992)[124], that is a position which assumes that there are real world objects apart from the human knower (objective reality), that our ability to know this reality is imperfect, and that our claims about these objects must be, therefore, subject to wide scientific critical examination and caution. This conception has allowed us to overcome what Biro calls the 'original dilemma' between the claim that 'appeals to nature are always, in fact, appeals to culturally-specific ideas of nature' and the necessity yet to 'still maintain [a metabolic[125]] ecologically grounded defence of nature' (Biro, 2005: 6). In other words, such an outlook is a way to contend that nature is a social product while also defending that natural limits exist and 'might act as a brake on economic expansion' (ibid: 3). In effect, nature has an autonomous agency outside of human and societal appropriation, as shows 'the resistance that the material world offers to human practice' (Biro, 2011: 236). We need, therefore, to overcome the way nature has been symbolically constructed as a pure product and materially exploited as a pure object (resource). This means the need to overcome the pitfalls of the strong anthropocentric outlook which reduces every natural entity to a means for humans' ends. The next chapter provides a critique of anthropocentrism on the account that the exclusive defence of human (even non-material) interests might not be extensive enough to secure nature's preservation in the context of the Anthropocene and the 'new planetary' outlook offered by its cheerleaders. Indeed, in the face of high natural complexity and the limitations of our knowledge, the safeguarding of what looks like, prima facie, 'human interests' might not be sufficient to protect the future of humanity. This is why the shift to a post-anthropocentrism which takes into account the macroscopic conditions of human life, can be seen as desirable also from the

[124] For an account of those positions in the context of interpretative research methods, see Maxwell & Mittapalli (2010).

[125] 'Metabolism' is understood here as a self-sustaining, complex, highly organised activity made of multiple interactions and exchanges.

humanist standpoint. Contrary to what the proponents of the 'good Anthropocene' claim, humanity is not an autonomous species separated from the destiny of planet Earth. Like the ecocentric argument, post-anthropocentrism 'is grounded in the belief that compared to the undoubted importance of the human part, the whole Ecosphere is even more significant and consequential' (Curry, 2011: 57).

That is not to say that humans are not entitled to fulfil their basic needs. Rather, post-anthropocentrism posits that it is only through the preservation of the constituents of life that human life itself will be able to endure. Therefore, another way of inhabiting the earth than the one promoted in most-modernity and in the 'good Anthropocene' narrative is necessary to avoid that the Anthropocene becomes also the *end* of the Anthropocene, that is an era when humanity cannot control anymore its destiny. Humans do not need to control more the planet to survive on it (as defended in modernist creed); they need on the contrary to let go their dreams of mastery and control and see nature as an ally rather than an enemy. That involves seeing a meaning *also* in nature and considering our lives as set in a larger context than the one exclusively given by human societies. The overcoming of the current (arrogant) anthropocentrism which is in great part responsible for the ecological predicament will be discussed in the next chapter.

Chapter 4

For a Post-Anthropocentric Socio-Nature Relationship in the Anthropocene

4.1. Introduction: Anthropocene's anthropocentrism

The recent introduction of the concept of Anthropocene in the field of ESS but also in human sciences has put the notion of anthropocentrism on centre stage. Indeed, according to the optimist view contained in this idea (Chapters 2 & 3), we now live in an epoch that entirely revolves around the *Anthropos*. Humans are said to be a geological force on the planet, their power competing with that of volcanic eruptions, sedimentation, erosion processes, earthquakes and tectonic plates, etc. Indeed, as Steffen et al. say, the 'human imprint on the global environment has become so large and active that it rivals some of the great forces of Nature in its impact on the functioning of the Earth system' (2011b: 842). As demonstrated in former chapters, the Anthropocene has been seized as an opportunity by 'Anthropocene boosters', whether they come from the field of ESS or contemporary post-environmentalism (ecomodernists, neo-greens, eco-pragmatists), to declare the supremacy of humanity on the planet: humans have now the possibility to create a 'good' or even 'great' Anthropocene (*The Ecomodernist Manifesto*, 2015). Let us recall how Ellis describes the new geological era: '[n]ature is gone… We now live in the

Anthropocene – a geological era in which Earth's atmosphere, lithosphere, and biosphere are shaped primarily by human forces' (2009: n.p.).

According to this conquering narrative, human technological power and the continuation of carbon-based societies are supposed to lead us on the path of a steady, linear, and universal progress. This march towards betterment excludes the non-human world whose destiny is to be hybridised, destroyed and offset by artificial capital[126] or protected in some degree according to the social demand and consensus for natural embellishment. In substance, as explains Arias-Maldonado (2012), some social concern for nature might increase the chance that humans give importance to its protection, although they could just as well follow another (less conservationist) path (p. 54). It is the privilege of the winner to have rights upon his victims and dispose freely of them. The triumphant *Anthropos* in the good Anthropocene picture chooses alone who can live and die according to 'how much nature… [he] need[s]' (ibid.: 87), that is according to the level of ecosystemic *functionality* or natural ornament that he wants to preserve for human welfare and pleasure.

We find here the source of anger of wilderness conservationist David Foreman toward 'Anthropoceniacs' when evoking 'the ghastly, grisly slaughter of so many wild things'. Where is the grief? Where is the shame? Where is the passion to save what's left? Where is the outrage? Where is the sadness for the loss of so many of our neighbours…? The mass extinction of other Earthlings seems not to bring them a tear' (2015: n.p.). And, indeed, we find some neo-conservationists explaining that the loss of formerly abundant species, such as the passenger pigeon are 'natural' (rather than anthropogenic) extinctions, and that the eradication of such species is of no great importance as it 'can be inconsequential to ecosystem function' (Kareiva et

[126] See Arias-Maldonado (2012: 83-92).

al., 2012: n.p.)[127]. Arias-Maldonado does not conceal the brutality of humanity towards animals but legitimates this violence in the name of human's 'singularity': '[a]n evolutionary explanation of human behaviour [toward animals] and culture is compatible with the recognition of humanity's *exception*' (2012: 49; original emphasis).[128] Indeed, the thesis of 'Human exceptionalism', that is the idea that humankind is radically different and apart from the rest of nature and other animals, leads quickly to that of 'human Supremacy', which has allowed humanity to exploit nature and people living in wilderness in the most ruthlessly (some would say 'efficiently') way. The self-congratulatory idea that humans are entitled to control the earth, which entails destructive forms of relationship with the non-human world, is often argued on religious grounds (theology) on behalf of theories which reject the animal/human continuity. Although it has no scientific grounding, many seem to believe that it is a core-component of Darwin's theory of evolution, like if the human species was preordained to become the dominant species because of its adaptive qualities (teleology). Here lies the foundation of a cosmic (or metaphysical) anthropocentrism directly inspired from the Christian 'Great Chain of Being' iconography according to which humans are the centre and the purported end of the creation[129].

Anthropocenologists behave as if human takeover on the planet was foreordained by the law of evolution, or in other words as if our species was the necessary endpoint of hundreds of millions (or 3.7 billion if we start with the first fossils) years of life on the planet. Stephen Gould (1994) unsparingly critiques this

[127] Actually, the passenger pigeon (like many other species), did not 'go extinct': it was murdered by unbridled hunting and widespread deforestation end of 19th/beginning of 20th century, and constitutes, therefore, a notable case of *anthropogenic destruction*.

[128] Worth noting, although ecomodernists such as Arias-Maldonado adopt the 'end of nature' hybridist narrative, which is a core idea of 'post-environmentalism', they preserve the nature/culture dualism, to defend human's exceptionalism.

[129] This trope is quite common in evolutionary humanism (embodied by Huxley, Vernadsky, de Chardin and by the new Anthropocene boosters). As Julian Huxley puts it, '[m]an's place in nature, as we have seen, is at the present summit of the evolutionary process on this planet; and his role is to conduct that process to still further heights' (1957: 51).

delusional view by noting that 'the worst and most harmful of all our conventional mistakes about the history of our planet [is] the arrogant notion that evolution has a predictable direction leading toward human life (p.10). The misleading concept of 'human exceptionalism', which provides background conditions for mistreating and exploiting non-human nature is knowing a new momentum in the Anthropocene. Indeed, this concept although initially invented by Crutzen and Stoermer (2000) to critique human dominance, has contributed to valorising radical anthropocentrism, magnifying human agency, and enhancing the desire to control even more nature (through, for instance, geoengineering). This new impulse and legitimacy given to arrogant anthropocentrism also have axiological consequences as it involves the idea – already a creed of modernity – that human interests outweigh all others and that nature should only be instrumentally treated. This thesis opposes these claims insofar as they deny the radical dependence of humankind on nonhuman nature and the continuity between non-human and human nature. Not only does speciesism[130] legitimate an imperialist form of dualism (which contends that difference means inferiority), but it also consecrates 'ruling' and 'conquering' forms of instrumentalisation which assume that nature has no ends or value of its own but is just at humans' disposal. This model of anthropocentrism which is typical of modernity is put back on the agenda thanks to the Anthropocene narrative, which makes Peterson says that '[a]nthropocenians are no more environmentalist than Francis Bacon or René Descartes' (2016: n.p.).

[130] 'Speciesism' refers to 'the practice of treating members of one species as morally more important than members of other species' (Source: Encyclopaedia Britannica). It refers here to human supremacism, and the exclusion of all nonhuman animals from the rights, freedoms, and protections afforded to humans. The term was introduced by the English philosopher Richard Ryder in the 1970s as an equivalent in the natural world of racism or sexism (that is a concept based upon morally irrelevant physical differences). It was subsequently popularized by the Australian philosopher Peter Singer. See for instance Singer (1975).

Against that view, this chapter exhibits a long-established green idea[131] according to which arrogant anthropocentrism such as the one evidenced in the dominant Anthropocene narrative cannot guarantee any sustainable development in that it puts human and non-human life at risk. Common anthropocentric environmental approaches have so far proved inadequate for conserving biodiversity and fighting against arrogant claims which see the earth as either a 'private property' or a 'playground' intended to fulfil excessive humans needs and desires. The on-going destruction of life on Earth is, indeed, mostly brought about by a 'resourcist' mind-set which regards mainly and merely the Earth as 'a storehouse' or a 'standing reserve' (Heidegger [1953]1977: 17). According to this Promethean paradigm, human beings are entitled, on behalf of their privileged place in the chain of life, to having their interests (including wants as opposed to basic needs) met prior everything else, even at the expense of the continuation of many other forms of life on the planet. This mind-set finds its source in the anthropocentric and human-exceptionalism belief-system which has acquired today the status of a 'common sense' (Crist, 2014: 17). Indeed, as seen in previous chapters (2 and 3), the Anthropocene, is mostly seen by Anthropoceniacs or 'Anthropocene boosters' as an(other) validation of human dominion and (ontological) supremacy on Earth. For them, the new geological era is a sign that human conquest of nature can intimately continue, rather than an opportunity to develop forms of humility or prudence in the face of non-mastery and non-knowledge (Chapter 2)[132]. According to this arrogant humanism/anthropocentrism (Ehrenfeld, 1978), the non-human world is an instrumental object *per se* amenable to human (ab)use and exploitation. Such a view precludes, therefore, any non-instrumental and non-material valuation of the non-human world and deprives us of a normative system that could put limits to the

[131] See for instance Ehrenfeld (1978).

[132] As Lövbrand et al. say, for critical environmental scholars, the Anthropocene 'is a concept that emphasises humanity's material dependence, embodiment and fragility, and hereby invites us to rethink long-held assumptions about the autonomous, self-sufficient human subject that begins and ends with itself (Wakefield: 2014)' (2014: 4).

human reification of natural entities. This exclusively 'resourcist' outlook is a paramount feature of capitalist worldviews and the main reason why the ecological situation has so immensely deteriorated in the biophobic Capitalocene.

But more specifically, this chapter also addresses the dominant green theorising that considers a weak form of anthropocentrism as being sufficient for addressing environmental issues[133]. Weak anthropocentrism differs from strong anthropocentrism in that it enlarges the value of nature to non-instrumental uses. In the strong (or arrogant) anthropocentric version, the relationship to nature is exclusively thought in instrumental and material (typically economic) terms: the moral justification for using nature does not need to go beyond human interests. On the contrary, the weak anthropocentric version admits that nature can also be valued for non-material reasons in order to fulfil spiritual, religious or aesthetic purposes. It supports a critically appraised and checked use of nature or a theory of the 'good use' of nature (Barry: 1999). Green environmentalism is, therefore, mostly anthropocentric, aiming to improve the state of the environment to ensure the quality of life of people while ecocentrism, as will be evidenced here, is nature-centred at its core but often humanitarian in its effects.

This thesis does not disqualify weak anthropocentrism but maintains that if this approach is necessary, it is, however, insufficient to achieve sustainability in a world that has become ecologically sick from not taking enough nature's interests into account. What needs to be further acknowledged is the fact that nature must be valued independently of human (first sight) interests. Section 4.2 will examine the post-anthropocentric position in comparison with the strong and weak versions of anthropocentrism showing the differences but also the common points it shares with

[133] See Barry (1999), Hayward (1997), Norton (1991), Hargrove (1992), etc. although there are many differences between those thinkers. I consider, for instance, Barry as a 'radical weak anthropocentrist' insofar as he acknowledges that human interests (be they survivalist, spiritual, religious or aesthetic) cannot justify alone the way we interact with nature (1999: 59). He, therefore, defends non-human interests for their own sake, which is a typical non-anthropocentric position.

the moderate version of anthropocentrism. Section 4.3 will argue for the ethical and political defence of the intrinsic value of nature considered as a 'regulative horizon' necessary to challenge the destructiveness of anthropocentric capitalism. Section 4.4 evaluates the legal relevance of the intrinsic value of nature and shows the 'workability' of such a radical concept by looking at examples provided by current jurisprudence (in indigenous but also in Western Constitutions/rules of law). Moreover, it argues that such a legal constitutionalising of the intrinsic value of nature is necessary (along with the fostering of weak-anthropocentric values) to bring the shift of focus needed to address the forms of destructive capitalist managerial environmentalism which have resulted in the ecological devastation of the planet.

4.2. Arrogant Anthropocentrism, Weak Anthropocentrism, and Post-Anthropocentrism: Prometheanism, Pragmatism, and Regulative horizon

In her 2016 article 'The Party of the Anthropocene: Post-humanism, Environmentalism and the Post-Anthropocentric Shift', Francesca Ferrando emphasises a point that she qualifies as being of 'crucial importance': 'there is no Anthropocene without anthropocentrism' (165)[134]. Indeed, as we saw in previous chapters, the recent attempt to rename our geological epoch after our own name 'Anthropos' constitutes for neo-greens in particular and 'Anthropocene boosters' in general, a new opportunity to affirm human dominion on earth and shape humanity's resourcist agenda anew. We find here the same type of hubris that David Ehrenfeld already examined in his 1978 book, *The Arrogance of Humanism*, that is an uncaring, economic narrow-minded, and imperialistic humanism. This simplistic and short-sighted outlook puts prices on every natural entity which can deliver 'ecosystem

[134] In the same vein, Thomas Berry says: '[t]he deepest cause of the present devastation is found in a mode of consciousness that has established a radical discontinuity between the human and other modes of being' (Berry 1999: 4). He labels this discontinuity 'anthropocentrism'.

services': trees, lakes, rainforests, grasslands or watersheds, all of which can be bought and sold on capitalist markets. It pretends to make the takeover of the planet 'sustainable', and to technically solve any consequence of technology that might backfire (like in the myth of Achilles' lance[135]). But in fact, the only sustainability such a delusional mercantilist ideology promotes is the sustainability of the very system and power relationships which have caused/are causing the ecological predicament. Indeed, what can the defence of economic management and technological approaches of a human species elevated to the godlike status of a new 'planetary steward' bring to environmental protection? In the eyes of the new eco-managers, the planet could become a beautiful garden, 'that is, a world thoughtfully manipulated, perhaps even "sustainable", for human ends' (Butler, 2014: xi). This post-mostmodern conception of stewardship will bring about 'a wealth of *novel ecosystems* catalysed by human activities' (Kareiva et al., 2012: n.p.; emphasis added), 'anthromes' or 'anthropogenic biomes' (Ellis & Ramankutty, 2008)[136] or 'an ecologically vibrant planet' (Asafu-Adjaye et al 2015, 31). These are all Orwellian neologisms and concepts describing the new human-altered ecosystems promoted by the neo-green agenda. Crist's work is particularly useful here to help us uncover the ideology behind the concept of the Anthropocene. As she notes, the vocabulary of the Anthropocene is 'a surreptitious purveyor (inadvertent or not) of the human supremacy complex' (2013: 133). Most of the neo-green literature try for instance to naturalise the human alteration of the planet. The Anthropocene or 'human enterprise' (that is, the 'natural' human development from the hunter-gather phase to the present) is portrayed as the destiny of the planet. The 'age of humans' or the 'global production of nature' is the latest conceptual tool imagined by Prometheans to justify a long run of socio-devastation of the natural world (Crist, 2014). And indeed, when a 'destruction' becomes a simple 'transformation', when the 'climate degradation' is understood as

[135] Barry (2012: 34; 2016b).
[136] [Online] http://ecotope.org/anthromes/v1/guide/

'climate change', when the 'hybrid narrative' is supposed to summarise the whole history of humanity (without issues of scales and degrees), and when 'human capital' and 'natural capital' become interchangeable, it is the sign that a programme of derealisation is at work, as well as the disqualification of politics and democratic choices in the making of our possible socio-ecological future[137].

Indeed, the principal claim of ecomodernism is not that environmental policy and ethics should secure ecosystems integrity and collective agency; it is not about political mobilisation, resistance, and critique of the status quo. The neo-green agenda is mostly about 'intelligently' domesticating and managing[138] landscapes, which equates to a call for the abandoning of politics and switch, instead, to management and engineering. For instance, the world's oldest scientific society, the Royal Society of London, pushes for a 'sustainable intensification' (Royal Society, 2009). As Shellenberger and Nordhaus say, '[w]hat we call "saving the Earth" will, in practice, require creating and re-creating it again and again for as long as humans inhabit it' (2011: 61). This strongly arrogant standpoint is an exacerbation of the un-reflexive anthropocentrism which has led humanity to the present ecological predicament; one of the leading causes being 'our expansionism, arrogance, and dominion within the biosphere' (Crist, 2010: 330). Anthropocentrism has, without doubt, 'shaped the dominant culture and has both orchestrated and legitimated a plundering human behaviour toward the natural world' (Crist, 2014: 24). This is the reason why the strong anthropocentric tradition which has pervaded our culture through classical antiquity, Judeo-Christianism, the Renaissance movement and the modernist

[137] As will be analysed further in this chapter (Section 4.4), nature is characterised by 'self-maintaining' characteristics (autopoiesis). The Anthropocene and its adverse effects (global climate change, species extinction, deforestation, etc.) are another name for the destabilisation of these self-regulative characteristics. Therefore, responsibility is placed on humans to act in a way that maintains dynamic ecosystems as far as possible in balance (equilibrium). See Filgueira and Mason (2011: 196; 202, n.12).

[138] As Rolston recalls, '[t]he roots of "manage" is the Latin "manus", "hand". "Humans will handle the place" but '[s]o far the "managers" seem mostly to have produced an environmental crisis managing for escalating consumption, managing to make the rich richer, managing maximally to exploit natural resources' (2017: 55,56).

Cartesian dreams of technological emancipation from nature, must now be declared bankrupt. This is not an easy task, but some elements destined to fuel the counter-cultural struggle for a sustainable world are given in the further development of the thesis (Chapters 5 & 6).

Today, the capitalist system, through the pursuit of profit, has pushed to the upper limit the instrumental domination/destruction of the planet. As Neil Smith says, '[i]f all societies "produce" nature at one scale or another, capitalist society has for the first time achieved this feat on a global scale' (1996: 50). For Joel Kovel (2008) capitalism is 'the enemy of nature', and we must choose between 'the end of capitalism or the end of the world' (as we know it). Indeed, industrial capitalism rests on highly anthropocentric and instrumentalist standpoints, in its organised and institutionalised form[139], but also in its widespread cultural manifestations. The capitalist-consumer culture gives the right and licence, by the styles of life and values it promotes, to use, and if needs be, to abuse and destroy nature with impunity. This ecocidical instrumentalism is achieved on behalf of a delusionary consumer freedom which is addressed later in Chapter 5. In the economic, legal and political framework, the idea that humans have the right to exploit their environment without restraint remains mostly unchallenged. More recently, financial capitalism has turned the natural world into a fictional commodity which provides 'services' quantified in monetary values as 'things' to be traded and exchanged (Sullivan, 2010). Capitalism embodies an extreme form of anthropocentrism which makes 'its centrality in modern ecocide… unmistakable' (Curry, 2011: 238). Indeed, the Capitalocene is a 'Thanatocene'[140], that is a period of technological and economic unbridled power which has brutalised and destroyed nature on behalf of human exceptionalism.

[139] 'Industrial capitalism', says Curry, 'is the most widespread, powerful and probably virulent form of anthropocentrism' (2011: 233).

[140] For this term, see Bonneuil and Fressoz (2016: 122 sq.).

As evidenced earlier in Section 2.3, the *Anthropos* of the Anthropocene is mostly the Western capitalist and individualistic consuming subject. Capitalocentrism is a narrowing of focus inside anthropocentrism itself: it holds that capital is central and that money holders enjoy the right to exploit, as much as they want/need, nature as well as other humans (which makes this form of anthropocentrism paradoxically anti-humanist). We are very close here to Marcuse, Horkheimer and Adorno's analysis of the turnaround of instrumental rationality against humans themselves: by generating values based on instrumental and economic reason, humanity ends up being itself caught in the trap of a reductionist means-to-ends rationality. It is, therefore, wrong to say that anthropocentrism is necessarily humanist and that anti-anthropocentrism is necessarily anti-humanist. For instance, ecocentrism is nature-centred at its core but often humanitarian in its effects[141]. Humanity is part of the natural world on which it depends to survive. To deny this point, as strong anthropocentrists do, has led us on a fatal trajectory.

A renewed ecological humanism such as the one embodied, for instance, by the French environmental activist and author, Pierre Rabhi[142] takes more seriously the interlinkages that connect us to the web of life and the fundamental dependence of humans on natural processes that exceed our knowledge and power (See Chapter 2). Such a renewed humanism condemns the myopic (or lazy) vision of progress which still associates technological innovations with control and improvement of life quality, and shifts toward a post-anthropocentric sustainable humanism regarded as 'an urgent matter of self-preservation' (Moser, 2016: 62). Indeed, in a time of looming unprecedented ecological disaster, a humanism only concerned with human affairs does not have a lot to offer. This is why '[w]e must urgently place *human beings* and

[141] As Curry (2011) shows, 'evidence of "ecocentric" misanthropy on significant scale is extremely thin…[and] It is more reasonable to see compassion for human beings and compassion for nonhuman animals and nature as integrally related' (p.58).

[142] See also Lévi-Strauss (1992: 23) and his critique of Western humanism for the separation it implements between human and nature as well as the domination on the latter by technological means.

nature at the forefront of our concerns and construct our economy accordingly [see Chapter 5]. Obstinately clinging to unlimited profit and constant growth as the basis of the world order is completely suicidal' (Rabhi, quoted in Moser, 2016: n.23; original emphasis). For the 'ecocentric humanism' presented by Rabhi as much as for the post-humanism claimed by Ferrando, the arrogant anthropocentrism of Western societies is oblivious to the fact that the survival of the human species is dependent on the well-being of the natural environment. The protection of the whole entails the survival of the part. Or, in other words, most fundamental human interests are fundamentally linked to the preservation of natural ecosystems. When they are understood in such a way, these ecocentric theories cannot be said misanthropic or anti-humanist. Rather, they are more 'a warning against a complacent and potentially arrogant anthropocentrism' (Barry, 1999: 3).

However, such ecocentric metaphysical claims, when not associated with an applied legal or political programme run the risk to be seen as 'monistic' and dismissive of humanity's particularities and needs. For Ferrando, the extent to which nature can still be used by humans remains unspecified, opening, therefore, the theory to some of the critiques already addressed to deep ecology and ecocentric ethics[143]. Moreover, because of its strong emphasis on the intrinsic value of nature, ecocentrism is regarded as politically counterproductive. This is against those pitfalls that some environmentalists, pragmatists, and neo-Green-Marxists (such as John Barry), have cast their theories in terms of 'enlightened human interests', that prioritise the fulfilment of basic needs over non-necessary and ecologically destructive wants. Acutely aware that 'life predates on life', and that humanity's survival is always linked to the consumption of nature, most green theorists have chosen to defend an 'ecological ethics of use' (Barry: 1999: 57sq.) 'understood as a reflexive mode of interaction with the non-human world' (Barry, 1996: ii). The complete reconciliation

[143] This critique also applies to my 2011 book.

with our natural environment being impossible, the line of ethical behaviour chosen by 'weak anthropocentrists' is, therefore, to distinguish 'use' from 'abuse' of nature that is to privilege the least harmful ways of using nature in fulfilling human needs. Such a theory is rooted in human interests and seeks to defend a reasonable and reflexive form of anthropocentrism. From an enlightened anthropocentrist outlook, nature's interests and humans' interests mostly coincide, and a sufficiently reformed and enlightened anthropocentrism is capable of motivating strong policies of sustainability. For neo-Marxist environmentalists as much as for critical theorists the reification of the world through the development of instrumental reason has ended up transforming humans themselves into objects of exploitation, linking the destiny of nature with that of humanity. The emancipation of nature also means, therefore, the emancipation of human beings. Early critical theorists such as Marcuse (1972), Horkheimer and Adorno (1947) already held this view, advocating a reduction of human impact on the natural world and instrumental appropriation as a pre-condition for a non-alienated relationship within the human world itself. In Critical Theorists' terms, the 'non-abuse' of nature means that the arrogant anthropocentric imperative must leave the room, when possible, to non-exploitive forms of social life. This line of thought meets the requirements of cautious anthropocentric thinkers, such as Norton (1984), Hayward (1997) or Barry (1999) who argue for a 'weak' or 'reflexive' version of anthropocentrism that acknowledges the importance of non-human nature for the sake of humans, as far as material but also non material interests (such as aesthetic, spiritual, recreational or moderately instrumental interests) are concerned. This is referred to as the theory of 'the good use' of nature. Like Marcuse, they call for emancipating practices that resist the sway of instrumental reason: nature, in this sense, has to be seen as 'an ally in the struggle against … exploitive societies' (Marcuse, 1972: 59). This form of anthropocentrism neither assumes some objectively superior place for humanity nor asserts that nature is valueless, although it remains a useful provider of resources and services. As Hannis puts it, '[o]ne important source of anthropogenic value is *human flourishing as facilitated and constituted by human relationships*

with the non-human world' (2015: 27; original emphasis). In such a weak version of anthropocentrism, environmental ethics involves a 'stewardship ethics' (Barry, 1999: 7), that is a conception inherited from the Judaeo-Christian narrative, where humans are seen as 'caretakers' of the earth and as those who have to take responsibility for it. This position, in Barry's opinion (1999), proves to be politically advantageous since it remains rooted in human interests. Indeed, according to him, '[t]he advantage of the stewardship position is that it is politically… superior to ecocentrism, since it holds that care for the environment cannot be independent of human interests' (1999: 7). This is also Andrew Light's opinion for whom environmental philosophers who spend most of their time 'debating non-human-centred forms of value-theory' do not contribute to the resolution of the ecological crisis (2002: 428). For Aaron Simmons, non-anthropocentric approaches to environmental ethics are just 'political nonstarters' insofar as environmental policy is fundamentally hierarchical and non-egalitarian. Other theorists such as Bryan Norton (1995), Anthony Weston (1996) or Bruce Morito (2003) have also called, sometimes for different reasons[144], to relinquish the concept of 'intrinsic value' of nature, that is the idea *that nature has value in its own right, independently of human interests*. As McShane summarises, 'If the concept of intrinsic value is both unnecessary and making life hard for philosophers, then one might think that it is time for this concept to go the way of the mastodon' (2007: 46).

However, this pragmatic political view might, first, stumble over some specific issues. One of them deals with Wilderness conservation. Indeed, alongside the line drawn by weak anthropocentrism between 'legitimate use' and 'illegitimate abuse' of nature[145], traditional conservationists make a strong case for the 'non-use'

[144] Weston and Morito claim that value cannot exist independently of humans. For Norton, values cannot exist before human conceptualisation, as an objective fact (for a summary and a critique of these positions, see McShane, 2007a, 2007b). Others contends, in a pragmatic way, that intrinsic value claims are unnecessary and counterproductive.

[145] It is a distinction that post-nature environmentalists could correlate with their own distinction between 'good' and 'bad' construction of nature, although most weak anthropocentrists

of nature, that is for the need to withdraw from nature as much as possible. As Marcuse says: 'surrender, 'letting be', acceptance' (1972: 69). If it can as well be the claim of some weak anthropocentrists such as John Barry who holds that sometimes 'nature must win', this position cannot be *necessarily* (but only contingently) generalised on behalf of anthropocentrism, even in its 'weak' or 'reflexive' version. The conservation of the wild could also be defended by 'weak anthropocentrists' for recreational, aesthetic or spiritual reasons but anthropocentrism, per definition, always takes humanity – and not nature – as the first recipient of value[146]. This anthropocentric 'good use' approach is also the one contended by neo-conservationists and ecomodernists. We can read, for instance, in the *Ecomodernist Manifesto* that '[t]here must still be a conservation politics and a wilderness movement to demand more wild nature *for aesthetic and spiritual reasons'* (Asafu-Adjaye, 2015: 27; emphasis added). Indeed, Humans' contact with original nature can be 'important for their psychological and spiritual well-being' (*ibid*.: 25). These are statements that neither weak anthropocentrists nor post-anthropocentrists would challenge although the concrete embodiment of this idea might be very different when envisioned by ecomodernists or by ecologists. Indeed, as examined in previous chapters, the ecomodernist position toward the ecological crisis includes more artificialisation, more (economic) management, more high-tech decoupling, more technological fixes (including geoengineering) and the business-as-usual scenario (economic growth, technical innovations, nuclear power, etc.). No reform in the current institutions, ways of living, consumer societies is on their agenda as well as no established firm

would probably reject this comparison. For instance, Latour's compositionist theory directs us 'toward the crucial difference between what is *well* or *badly* constructed' (Latour 2010, 474; my emphasis).

[146] There is a terminological difficulty in saying that anthropocentrism allows that nature can be both instrumentally and *intrinsically* valued by weak anthropocentrism (Barry, personal discussion). If the position is (even weakly) anthropocentric, it means that it turns around human interests, those latter being more or less defined in ecological terms according to the form of anthropocentrism defended. In brief, anthropocentrism cannot, without contradiction, claims to defend the intrinsic value of nature (that is a valuation that does not take human interests into account).

intention to preserve, protect, restore or re-wild nature. As Butler explains, neo-conservation's primary goals are primarily to serve economic human aspirations by maintaining ecosystems which are *useful* for humans, to better 'manage' the existing domesticated ones, and to partner with capitalist corporations in order to achieve better results (2014: x). For traditional conservationists or 'lovers of the wild'[147], this neo-conservationist and ecomodernist approach represents a danger for the natural world and the ecological balance of ecosystems. And yet, it could be implemented in the name of a reflexive anthropocentrism which aims at transforming the planet Earth in a 'garden' satisfying the aesthetic and recreational needs of its human inhabitants. 'Nature could be a garden… a tangle of species and wildness amidst lands used for food production, mineral extraction, and urban life' say for instance Kareiva et al. (2012; n.p.). The anthropogenic changes to the biosphere 'through logging, agriculture, mining, damming, and urbanisation' that ecologists experience as devastation, deterioration, loss, and depredation, equate, in ecomodernists' terms, to the creation of a 'wealth of novel ecosystems catalysed by human activities' (ibid.; emphasis added)[148]. According to this view, the shrinking remnants of wild nature should be transformed into playgrounds, 'rambunctious garden[s]' (Marris, 2011), or engineered ecosystems (anthromes) enhanced by the introduction of non-native (exotic) species, as chosen by human gardeners-cum-mangers of nature. 'This, of course, would mean the end of *inconvenient* and difficult-to-conserve species such as grizzly bears, tigers, lions, and elephants' (Locke, 2014: 369; emphasis added). For instance, an ecomodernist like Arias-Maldonado does not lament the loss of a species if it is not 'useful' to humans, or in other words, if '*we* can get along without it' (2012: 83; original emphasis). Worth noting, all the advocates of neo-conservationism are

[147] See particularly Wuerthner, Crist and Butler (ed.) *Keeping the Wild* (2014).

[148] Worth noticing, Peter Kareiva, member of The breakthrough Institute (TBI), is also the Chief Scientist for The Nature Conservancy (TNC), an organisation whose president and CEO Mark Tercek is partnering with Dow, one of the most powerful chemical companies in the world. [Online] http://www.newyorker.com/magazine/2014/05/12/green-is-good

not captured by capitalist interests (which can also manifest in career interests), some of them being probably sincerely committed to ensuring the protection of nature. As Butler says, some of them might be 'acting in good faith with genuine desire to see conservation succeed' (2014:x). And it is true that the human desire for certain natural experiences can be an excellent auxiliary in the project of preserving the wild but this also subjects environmental ethics 'to a kind of subjective relativism: those agents who do not feel the "awe" and "respect" and "wonder" of nature will have no good reason – no reason at all?! – to protect it' (Katz: 1997: 73). What do we do, indeed, with those people who consider their personal and unsustainable desires as the only valuable ones? As Katz says, '[t]he pragmatic value of nature – as with all pragmatic value – is irrevocably tied to human experience and cannot be, therefore, the basis for a stable environmental ethics' (ibid.). Human preferences, especially in the context of consumer-based capitalism, cannot be the source of moral obligations to protect the environment.

In addition to the need to follow human preferences, some neo-greens and neo-conservationists substantiate their commitment to the ecomodernist management of the planet with strategic arguments. The choice of embracing new conservationist goals is then being performed on behalf of environmental realpolitik and pragmatic reasons. According to this outlook, wilderness and biodiversity goals should be curtailed and explicitly linked to human interests in order to be *achievable* (see Johns, 2014: 32 sq.). Goals for protecting biodiversity should be 'grounded in the real interests that people have in benefits provided by biodiversity' (Perrings et al. 2010a: 323). Nature protection frameworks should include 'consumptive (e.g., food and fuel) and nonconsumptive (e.g., health and aesthetics) services provided by ecosystems' (ibid.). In response to the criticism that this view might fail to consider future unanticipated benefits and services of biodiversity and, therefore, leave much biodiversity aside, Perrings et al. (2010 b) answer that in the wake of the failure of intrinsic value to ground political action (a view that will be opposed in Section 4.4),

new arguments must be developed which are exclusively based on human-interests[149]. The neo-conservationist line of arguments meets here the pragmatist one of weak anthropocentrists mentioned above. Green environmentalists seem indeed ready to backtrack on goals identified as relevant by scientific findings (for instance the need for more natural restoration, protection, and preservation) only because such results fail to persuade democratic publics.

Concerning the pragmatic line of defence of anthropocentric views, Section 4.4 will demonstrate that the defence of intrinsic value can also become a legal weapon that forces decision-makers to act in nature's interests against, sometimes, first-sighted human interests. The utilitarian and pragmatic conception of 'wise use' or the human-centred non-instrumental use of nature contended by weak anthropocentrists might be insufficient to secure the protection of wilderness in particular and nature in general. Indeed, the appeal to 'enlightened' self-interests, as Curry says, 'is highly vulnerable to people's selfishness, short-sense of time-scale and narrow interpretations of "self", e.g., myself and my family, now and maybe for the next few years – all of which invites more ecological destruction' (2011: 164). Moreover, as evidenced earlier, weak anthropocentrism might be particularly inadequate to oppose the new preservationist perspective according to which the wild should be converted into a turbulent garden beautified by non-native species (Marris, 2011). A garden that would be rid of 'inconvenient' species (and after all, a park without tigers or other dangerous species might probably be more 'recreational' for its visitors although it might also contain less ecological /biological diversity). But more generally, reflexive anthropocentrists might find themselves caught in the subtle and sophisticated anthropocentric trap created by neogreens in the narrative and project of the 'good Anthropocene'.

[149] Such an argument in favour of a 'service paradigm' is also made in Kareiva and Marvier (2007: 50-57).

Against the ecomodernist and neo-conservationist line of argument, traditional conservationists argue that the intrinsic value has not failed conservation: it is instead 'conservationists' failure to organise enough people willing to act on behalf of biodiversity that has limited the realisation of conservation goals… 'The future does not organise and bring political pressure' (Johns, ibid.). We need therefore to develop a strong popular support for the defence of the intrinsic value of nature. Philip Cafaro, a conservationist advocate and green civic Republican at the same time, argues for 'expanding parks, reducing human numbers, and preserving all the wild nature we can' as being 'a superior alternative to the Anthropocene era' (2014: 137 sq.). To those who might criticise his 'misanthropy', he answers: 'People are great! Human culture, with all its achievements, is great. Cities can be great. But all of this is great only *within limits*' (2014: 142; original emphasis).

Weak anthropocentric genuine green intentions are not sufficient to defend nature's protection in a context where pragmatic arguments in favour of a reorganisation of nature for the sake of humans has been captured by green capitalist environmentalists. As Berry says regarding the anthropocentric orientation of human institutions: '[a]ll rights have been bestowed on human beings. The other than human modes of being are seen as having no rights. They have reality and value only through their use by the human. In this context, the other than human becomes completely vulnerable to exploitation by the human (1999: 72). This is why this thesis argues that a 'missile ethical theory' (such as the 'missile concept' of degrowth in political economy) is necessary to avoid that capitalism constantly bounces off onto the soil of environmental theories. Moreover, if the weak anthropocentric theory is based on the difference between legitimate and illegitimate use of nature (or the difference between legitimate 'needs' and illegitimate 'wants') as Barry (1999) argues, we have no choice but to note the difficulty of accurately differentiating the needs and wants in our modern, sophisticated Western societies. For instance, is having a car a 'need' or a 'want'? For most of our fellow citizens who need to commute to go to their job because of current urban settings, or the impossibility to live in city-centres, owing a

car is probably seen as a need. While for others it might be considered as a polluting luxury. Considering the society as it is now (and not as we wish it to be with another urban structure and abundant public transportation), a social good such as a car can be considered as a 'basic social need'. What about having a computer or a smartphone in a society built upon constant innovation and requiring from people to adapting continually to new social requirements? In light of the limitations mentioned above, it might be necessary for weak anthropocentrists to tighten their philosophical argument in order to differentiate themselves from the (so-called) 'sustainable' and 'managerial' approach held by ecomodernists, as well as to elaborate a relevant and detailed theory of needs on whose behalf they could limit the resourcist destruction of nature implied by industrial capitalism. The post-anthropocentric view defended in this thesis assesses, like weak anthropocentrists, the necessity of implementing a moderate material and non-material use of nature but goes one step forward by promoting as well the ethical and political defence of the intrinsic value of nature. Indeed, while weak anthropocentrists find the building a case for systematic and large-scale political, economic and cultural change for sustainability based on the intrinsic value of nature politically and democratically counterproductive and useless to achieve environmental goals, post-anthropocentrists consider, on the contrary, the intrinsic value of nature as a necessary normative claim to limit the extent to which nature can be anthropised (Section 4.3). Post-anthropocentrism does not deny the validity and efficiency of a 'legitimate use' theory of nature, acknowledging, by doing so, the practical importance of weak anthropocentrism, but it also makes a strong case for the integration of the intrinsic value of nature in political and legal governance, that is the introduction of earth jurisprudence in the judicial system. Section 4.4 will focus on the legal and political defence of the intrinsic value, that is the independent rights and the judicial status that could be ascribed to natural objects in order to withstand attacks on juridical and constitutional grounds. It will focus on

the way natural entities (individuals, species, systems, communities) can be defended in legal and political institutions and procedures.

4.3. Post-anthropocentrism and the defence of the intrinsic value of nature

The post-anthropocentric standpoint relies, like anthropocentrism, on the fact that a human valuer finds moral value in other entities (meta-ethical anthropocentrism)[150]. However, this anthropogenic source of value does not entail that humans are the only valuable entity on earth (in the same way as we would also like to be morally valued if a superior rational species appeared on the planet). Indeed, from the philosophical point of view, it cannot be denied that all rational and moral values (that we know) are generated by human experience. Maybe other species value as well their peers or other living beings on moral grounds but in the absence of verbalisation we are unable to know if behaviours that we can qualify as 'empathetic'[151] in the animal world are linked to a form of rational theorising rather than instinctive evolutionary laws (assuming that morality presupposes rationality). In fact, this subject is so complex and our knowledge of the animal world so limited that the assumption according to which only humans can attribute moral value to other beings might be once overturned. However, this statement will be accepted as a relative truth in this thesis.

Where post-anthropocentrists and anthropocentrists differ is that the former do no not consider that humans' interests can always be a good compass for the preservation of the world (and, incidentally, of humans themselves). In other terms,

[150] The fact that all moral values, including the intrinsic value ascribed to nature, originate, as far as we know, from human valuers is a truism accepted by both anthropocentric and nonanthropocentric approaches. The *epistemological anthropogenic source of valuation* (the fact that values find their source in human judgement) should not be confused with *ethical anthropocentrism* (the fact that humans are the only valuable beings in themselves) or even less with *metaphysical anthropocentrism* (humanity considered as the centre of the 'creation').

[151] On the subject of empathy in the natural world, see Frans de Waal (2010).

because of humanity's blindness to nonhuman interests (and to what constitutes humans' real interest eventually), post-anthropocentrism contends that the focus on human interests alone – as the word itself suggests: 'human-centrism' – fails practically to bring about sustainable practices. Indeed, as Plumwood asks: 'can we *always* demonstrate that the human species' interest will suffer if earth others are not spared and that humans will lose more than they may gain?' (2002: 125; original emphasis). Given, again, the limitation of our knowledge (See Chapters 2 & 3), the answer might probably be 'no'. Contrary to ecomodernist and neo-conservationist theories that pretend to be able to measure and push the boundaries of the 'critical natural capital', that is the part of nature which is irreplaceable in terms of its 'contribution to human existence and welfare' (Arias-Maldonado, 2012: 83), a post-anthropocentric position argues on behalf of the complexity of earth system mechanisms for a precautionary approach and urgent programmes of preservation, protection, restoration, and rewilding wherever it is possible. The impossibility to always demonstrate the convergence between nature's and humans' interests, does not mean that in those cases nature must necessarily lose. In the post-anthropocentric view, the needs of the Earth or of its non-human inhabitants would sometimes take precedence over narrow human interests, and not only from the viewpoint of blind human interests but also because life itself has value[152]. This is what the concept of 'biophilia' suggests: 'the passionate love of life and of all that is alive' (Fromm, 1973: 365). As Curry says, '[e]cological problems are not solely defined by reference to human beings (although they can be so defined), other natural entities deserve protection *regardless of their use or value to humans'* (2011: 93; emphasis added).

Some weak anthropocentrists argue that their theory can go along with the defence of the intrinsic value of nature (see Hargrove, 1992). Following their logic, it can be in human interest to protect the non-human world *in its own right*. Post-

[152] Ecocentrism values nature in itself for its inclusivity, complexity, creativity, beauty, mystery, etc. (see Curry, 2011: 58).

anthropocentric theorists would of course not oppose such a statement (the health of ecosystems being, in their opinion, the *conditio sine qua non*e of a human decent life) although they might take it as a derivative consequence rather than a premise of the argument they make in favour of the intrinsic value of nature. In other words, humans will *also* benefit from the protection of nature in its own right. However, this theoretical association between anthropocentrism and the defence of the intrinsic value of nature seems philosophically flawed, insofar as weak anthropocentrism considers that 'the care of nature *can never be independent of human acknowledged interests'* (Barry, 1999: 57; emphasis added). Can this assumption be logically compatible with the recognition of the intrinsic value of nature: that is a humanly-disengaged value?[153] It is here argued that these two assertions cannot be articulated together in the same argument. Simply put, they cannot logically work together. Indeed, if the 'intrinsic value' is defined as the fact that something is valued for itself, independently of any other entity, it then opposes the 'instrumental value', that is the fact that something is valued *for* something else[154]. Consequently, the 'human-centred defence of the intrinsic value of nature' is a self-contradictory claim. The defining feature of anthropocentrism (weak anthropocentrism included) is that the non-human nature is primarily valued for the satisfaction of human preferences or for its contribution to broader human values and interests (which can *also* be non-material and non-productive in the case of weak anthropocentrism). Against the subjectivist and relativist form of valuation which links the protection of nature to the ever-changing flux of human preferences, this thesis contends that a more secure source of obligations towards nature can be found in the anthropogenic defence of nature's rights and intrinsic value. As Katz rightly puts it, the intrinsic value might not play the

[153] This is a 'terminological' point of disagreement between John Barry and myself although our environmental ethical theorising have the same practical implications. It shows that anthropocentrism and ecocentrism can meet when they are both at the extreme of the spectrum (radical weak anthropocentrism and humanist ecocentrism).

[154] Hargrove (1992) or Hailwood (2015) have opposed this definition.

main role in the formation of an environmental ethics, but it can certainly contribute to the radical transformation of our normative vision, a change which is urgently needed to cope with the environmental crisis. Post-anthropocentrism might only remain a 'horizon' or in Kantian terms a regulative idea[155] but it is a necessary outlook if we wish to address 'the deepest root of our destructiveness and self-destructiveness, which dictates that success or failure lie solely in meeting human needs' (Curry, 2011: 239)[156]. To be implemented, such a transformative cultural programme and the constitutional amendments which can be associated with it require a democratic 'critical mass', that is a sufficient amount of citizens ready to support non-anthropocentric views. The law is indeed commonly understood as enforcing the common sense of a community as well as its sense of morality and decency. As Allot noted, 'law cannot be better than society's idea of itself' (1990: 298). This is particularly evident in countries where ecocentric political innovations are supported by indigenous and aboriginal cultures or 'traditional ecological knowledge' (Rowe, 1993). To switch Western culture from its present consumerist ecocidal track to a sustainable ecopolitical route means changing our belief-system and redirecting our ways of living in an ecological direction.

Notwithstanding the fact that public opinion can sometimes be more progressive than its legal and political representatives, this can be achieved by developing an ecological awareness about the internal relations living beings (including humans) have with their ecosystems, that is a scientific-based education taking into account the

[155] As Curry says, 'the ecocrisis requires an ecocentric ethic as a *regulative horizon*, an ethical context and ideal which may never be fully attained but which nonetheless indicate the right direction an help move things that way' (2011: 164; original emphasis).

[156] Human exceptionalism or the idea that only human needs deserve to be met constitutes the main ideological context which led to ecological disasters. Capitalism has exacerbated this conception by reducing rationality to instrumental reason but as Curry notes, an anthropocentric egalitarian ecosocialism could also foster the exploitation of nonhumans and, therefore, pass sentence on humanity too (2011: 239).

ecological model of internal relatedness[157]. That is, indeed, through a renewed 'education for sustainable living' (Capra & Luisi, 2014: 356 sq.) or 'ecological education' (Curry, 2011: 167 sq.) that the transformation of society could occur. Moreover, the change in society's basic belief system can especially be produced through the development of a Green Virtue Ethic (GVE), and 'green citizenship' (or green civil society), which are the central pillars of the Green Republicanism (Curry, 2011; Barry, 2012) analysed in Chapter 6. Virtue ethics (or virtue theory) is an approach of normative Ethics that emphasizes the formation of the character and the lasting habits as key elements of ethical doctrine rather than the rules and moral duties that conduct actions (Deontology) or their consequences (Consequentialism). This means that it is more concerned by the question 'What kind of person should I be?" rather than by the question 'what kinds of actions should I do?'. And indeed, between the discussions about rights and duties, between deontological principles and consequentialist arguments, or in other words, in the interstices of traditional moral discourses, virtue language has proliferated in the moral field and especially in 'the writings of those who seek to respond to the environmental crisis' (Wensveen, 2000: 3). Virtues like care, respect, compassion, courage, or frugality opposed to vices such as arrogance, greed, gluttony or expediency have become more and more widespread in ecological literature[158]. For Hulme (2014), the fate of the planet is in the hands of such intangible human qualities as love, humility, hope, and wisdom politicians, diplomats, economists, scientists, and negotiators are not accustomed to but which are familiar to virtue ethicists. The cultivation of virtue or the practising of (good) habits of life is indeed a significant

[157] In this regard, Eckersley already noted that 'the philosophical premises of ecocentrism (i.e., the model of internal relations) are actually more consistent with modern science than the premises of anthropocentrism, which posit humans as either separate from and above the rest of nature (or if not separate from the rest of nature then nonetheless the acme of nature)' (1992: 50-52). For Burdon, 'anthropocentrism no longer has any credibility in modern science' (2011c: 59-60). For a link between ecocentric views and pictures of reality emerging from scientific discoveries in biology or physics, see Capra (1983, 1996), Sheldrake (1990, 2005).

[158] See the works of Wensveen (2000), Sandler & Cafaro (2005), Sandler (2007), Curry (2011), Barry (2012), Hulme (2014), Treanor (2014). Hill Jr. is sometimes claimed to be the first one to have developed a virtue approach to deal with environmental problems in his 1983 famous article, 'Ideals of Human Excellence and Preserving Natural Environment'.

part of the republican response to the ecological challenges. Ecological virtue ethics is a transformative cultural factor of great importance to consider before addressing the legal, economic, and political institutional shifts that the crisis calls for (See next section and Chapters 5 & 6). As Sandler puts it, 'we legislate regarding behaviour, not character' (2007:1). In stressing the importance of the character of the individual human agent, virtue ethics has something positive to bring to green politics. Indeed, it is in connection with the (real) world – and not in the abstract world of the 'pure practical reason' – that characters are shaped, including in their relation to natural entities which have value in themselves (Sandler, 2007: 112-113)[159]. By linking morality to questions of 'affects' and 'sensibility', a virtue ethics gives concreteness and embodiment (or earthliness) to a moral experience which otherwise remains only theoretical (rational) and at the level of external duties and rights (as it is the case with deontological Kantianism). Environmental ethics must, therefore, encourage as much as possible policies, lifestyles, and practices that are ecocentrically oriented even though we are well aware that the ethical arguments will need to synergise with other ground-breaking forces to be effective, such as economic, political, and constitutional transformations (See Chapters 5 & 6).

The defence of intrinsic value or the care about nonhuman nature and beings *for their own sakes* might be only one among other ways to protect nature (besides protecting it for its beauty, diversity, stability and all that it provides to the flourishing of human lives) and one way among others to ground environmental obligations. But 'it serves to limit the exclusive reliance on anthropocentric instrumental values'. Therefore, 'the existence of intrinsic value needs to be acknowledged, to serve as the limit to anthropocentric instrumentalism' (Katz: 1997: 75). It must not only be acknowledged but also developed as much as possible as a moral and legal tool to

[159] Virtue ethics is primarily concerned with cultivating good characters in moral agents. Beyond that, there is nothing that prevents the good character from valuing the integrity, stability, beauty of the natural world for its own sake. Environmental virtue ethics does not oppose anthropogenic ascription of intrinsic value to nature (See Shaw, 2005: n.24).

resist the capitalistic destruction of the earth and the anthropocentric mindset that does not recognise enough (especially strong anthropocentrism) the moral value of non-human interests. As curry notes, the extent of our ignorance concerning the complexity of the natural world and the magnitude of our greed make reflexive and enlightened anthropocentrism insufficient to escape the ecological predicament (2011: 60). The next section will analyse to which extent principles of respect and integrity of the non-human world can be incorporated in innovative approaches of the rule of law which take account of both intrinsic and (soft) instrumental value of nature.

'Wild law' (Cullinan, 2002; Burdon, 2011a) has three main characteristics: it centres the governance on the Earth; enhances mutual relationships to promote the well-being of the whole Earth Community; and is based on community ecological governance. The fundamental issue it raises can be articulated as follows: 'for the vast majority of Western history, our law has reflected an anthropocentric human-earth relationship. How can law, as an evolving social institution, shift to reflect the modern understanding that human beings are interconnected and dependent upon a comprehensive Earth Community?' (Burdon: 2011b: 158)[160]. Against the deep anthropocentric core of Western law (well epitomised in legal positivism) which defines nature as a human property associated with the rights people possess to use natural goods and resources, the next section's contention is that the legislative framework and governance systems need to be re-oriented, *as much as possible* toward an 'Earth jurisprudence' or 'Earth-centred law'[161].

[160] Importantly, Burdon adds, 'this does not mean that human beings are not important or considered' (ibid.)

[161] The term 'Earth Jurisprudence' was first coined by Thomas Berry (1999) but the underlying idea, according to which non-human entities might be given legal personality and legal rights was already raised in Stone (1972).

4.4. 'Wild law' and the legal standing for nature

To acknowledge the intrinsic value of nature or the fact that nature must be protected not only on behalf of humans' interests but also because it has a value on its own can stem from different non-anthropocentric philosophical perspectives: naturalist holism, biocentrism or ecocentrism. Naturalist holism is a monistic ontology. It is the idea that reality is an undifferentiated whole, that the world is one natural subject with one single interest in which all natural entities participate. This naturalist holism declares 'nature is everything' and constitutes the exact opposite of the artificial holism or radical social/cultural constructivism that declares 'nature is dead' (Chapter 3). It is another form of affirmative or undifferentiated thinking[162] that opposes the relational ontology and its stress on relations and pluralism defended in this thesis. The world, indeed, is composed of discrete, compact, separate 'things' that are dissolved in the oneness vision offered by this form of naturalistic holism. This ontological undifferentiated holism differs from the relation-based holistic view contended in this work and according to which things are related one to the other (ontological and epistemological interdependency)[163]. Indeed, the genuine postmodernist theory—to which green republicanism belongs (See Appendix A) — brings to the forefront human dependency on natural processes, reclaiming, by doing so, a sense of organic connectedness with nature[164] but does not deny the anthropological evidence that humans are both natural and cultural beings capable of

[162] Such a conception of totality dissolves the rich differentiation and determination of empirical content into what Hegel described, talking of Hölderlin's and Schelling's conception of absolute, as a 'night in which all cows are black' (2005: 94).

[163] We can oppose the 'undifferentiated', 'radical' and 'drastic' version of holism to a more 'differentiated' and 'moderate' one (such as the one defended in this thesis). Both share the ideas, against mechanism, that: 'everything is connected', 'the whole is greater than the sum of the parts', 'knowledge is limited and relative' but the latter does not hold the undifferentiated unity between humans and non-human nature.

[164] Radical postmodernists such as M. Smith (2001, 2011), Alaimo (1994, 2010), Mathews (1996, 2003), Gibson et al. (2015) seek to develop ontologies/ethics that decentre the figure of the autonomous and self-sufficient human in favour of a humbler positioning in the world.

transforming nature and interpreting experience though their own symbolic systems. Therefore, humans are *a part* (of) but also *apart* (from) nature. As Curry warns, mentioning some of deep ecology's pitfalls, '[t]o deny difference as such in favour of 'oneness' is dangerous, because that is to deny relations and therefore ethics. It is also to invite a misanthropic ecocentrism which either demands the sacrifice of human distinctiveness as the price of entry to an abstract and collectivized nature, or tries to exclude a demonized humanity from nature' (2011: 107). Even if the critique of misanthropy certainly does not apply to Aldo Leopold's Land ethics holistic views nor to deep ecology (with the exception, maybe, of 'Earth First!' movement and the claims of some ecologists associated with this group[165]), holism could be used as a theoretical argument for the circumvention of individual interests in 'the interest of (someone's particular version of) the collective whole' (Curry, 2011: 95). This is why this form of undifferentiated holism is not an ethical option for the green republicanism contended in this work.

Biocentrism in its egalitarian form (or biological-egalitarianism) incurs the same critique of misanthropy addressed above, to which must be added the critique of impracticability. This version of biocentrism (literally, life-centeredness) does not only consider that all living planets on the planet —understood as teleological centres of life— have inherent worth but also that they have *equal value*. Paul Taylor (2011[1986]), for instance, contends that all organisms, human or otherwise, are equal in terms of moral considerability. For this reason, they should be respected alike and see their flourishing promoted (theoretically *without exception*). Such reasoning is of course untenable insofar as per definition 'life eats life' and impracticable as a guide to action. It creates endless and unsolvable conflicts of interests. For instance, if we take the problem of parasitic micro-organisms and viruses that are living things: does bio-egalitarianism mean that in the name of their moral duty to care about any living

[165] Edward Abbey claims in *Desert Solitaire* (1990[1968]) that he would rather shoot a human than a snake (P.17) and Dave Foreman (1986) suggested that we should not help starving Ethiopians and should allow them to die.

being, humans should host them and sacrifice themselves in order to allow parasites and infective agents to thrive? What about the mosquito that transmits malaria? This theory is neither possible nor desirable nor needed for defending nature's rights. Hierarchical biocentrism would be a better option but still exposes itself to insuperable conflicts of interests (which form of life should be favoured on others?). Moreover, this theory —as well as biocentrism in general— fails by offering an exclusively individualistic account of morality and rights. As Curry notes, biocentrism only denotes respect for individual beings, leaving aside the concern for species and ecosystems (2011: 76). It can therefore not address our current ecological crisis which urgently requires the defence/protection/restauration of ecological communities. This is why '[w]hat is needed is a coherent and defensible ecocentrism' (ibid.: 105).

Ecocentrism provides, indeed a relevant rationale for defending nature's rights: it goes beyond biocentrism by including environmental systems as wholes, with both their biotic and abiotic components and offers the most inclusive model for defending nature's value. In ethical terms, it expands the moral community beyond our species, to all life, that is to ecosystems themselves. In political and legal terms, it acknowledges the close interdependence of ecological and social systems and the related necessity to respect the rights of nature to exist and thrive. Ecocentrism is a moderate form of holism: it reminds us that all life is interdependent while being also differentiated (recognizing humans as being also cultural beings) and that humanity depends on ecosystem processes fort her evolution. The main purpose of ecocentric principles is indeed to restore and develop a harmonious relationship between humans and nature. The ecocentric paradigm is founded on the concepts of interdependency, communion, differentiation and *autopoiesis* (creative and regenerative capacities of nature). Emerging Earth jurisprudence and wild law could provide philosophical but also practical foundations for the recognition of such principles and the rights of nature in our legal system.

The reorientation of legal systems toward an ecocentric ideal implies, as Bugge (2013) notes, that nature's intrinsic value acquires legal relevance and is 'taken into consideration in the development of policy and the implementation of laws' (p. 12). The point is to be able to defend nature's rights before the courts even if no human interest is apparently attached to them, or even against (apparent) human interests. In other terms, nature's defence could 'trump', in certain cases, human interests. Let us explore further this crucial matter. According to Filgueira and Mason (2011), modern jurisprudence is fundamentally anthropocentric, 'the assumption being that all laws are made entirely for the benefit of human beings' (p. 196): concepts such as 'human right', 'public benefit', 'private ownership' which are central to current Western institutions do not take into account the more-than-humans' interests. On the contrary, 'laws that centre their governance on the Earth would derive their respect for the Earth from the Earth's own value, not for what the Earth can do for humans' (ibid.)[166].

There are different reasons why Earth jurisprudence supports granting rights to natural entities, the first one being to protect nature efficiently. As Laitos (2013) mentions, the environmental law framework which clings to anthropocentrism as a precondition to adoption, has not prevented the inexorable exhaustion of stock and renewable resources, natural systems destruction, the rise of the global change, species extinctions, and biomass depletion 'which could compromise the integrity and survival of the Earth's biosphere' (p. 214). By bestowing rights only on human beings, our legal frameworks have made non-human modes of being totally vulnerable to exploitation, commodification, and the needs of industrial economy: the present legal system, indeed, 'is supporting exploitation rather than protecting the natural world from destruction by a relentless industrial economy' (Berry, 2006: 107). Nature and

[166] This attempt can also be found, in some extent, in the 'stewardship ethics' which aims at reversing the dominant arrogant anthropocentric thinking of the earth being made for humanity, and at replacing it with the idea that perhaps we/humanity were made for the earth as its stewards and carers (I owe this point to John Barry). For a deepening of the earth stewardship position, see Rozzi et al. (2015).

non-human entities are 'things' or 'objects' which exist only for human benefit. One consequence of ignoring the intrinsic value and legal rights of nature is that environmental damages are mostly treated as 'property offences' relying on the good will of property owners. The common law rests on the view that nature exists only to be possessed and used by humans to their unlimited advantage. This assumption, which implies a narrow speciesism or arrogant anthropocentrism typical of Western culture, is ethically biased and scientifically invalid as shows the imminence of ecological imbalances and catastrophes (Chapters 2 & 3). In the acosmic and biophobic vision of Western culture, Human Law has become self-referential and self-validating. Legal positivism, the theory that has become dominant in the legal field, asserts that the legislation can be free from moral evaluation but also from external influences. As far as the non-human world is concerned, its influence is considered as 'remote, inappropriate and unnecessary to the operation of law' (Graham, 2010: 15). Rules are therefore enacted in ignorance or even in contradiction with ecological principles. Hence, as a consequence, 'it enables sophisticated governance bodies such as the European Union to allocate greater fishing quotas than the fish stocks can sustain' (Burdon, 2011c: 62). This is the reason why the proponents of Earth Jurisprudence contend that Human jurisprudence must be embedded within, and be an extension of the 'Great Jurisprudence'. The Great Jurisprudence is 'like the mountains. *It is what is* and our descriptions of it are abstract approximations… [I]ts existence and how it operates can be observed in the phenomena of the natural world' (Cullinan, 2002: 69; emphasis added). The great Jurisprudence can be understood as the natural parameters and limits within which human beings can operate (see figure 2.2). Any human legal framework must indeed be reintegrated into the principles that rule the wider Earth Community. This means that human laws must be aligned with the scientifically acknowledged biophysical limits of the planet (biochemical cycles, energy transfer, carrying capacity, biotic diversity, etc.) and that the respect of those limits is ontologically prior to human

laws[167]. As Berry puts it, 'the universe is the primary lawgiver' (1999: 81). Humans must become aware of the *a priori* laws of nature and, following in this matter the Stoic philosophy, comply with them. Francis Bacon himself, not known for his ecological sympathies, put it in this way in his *Novum Organon* (1620): '[o]ne does not have empire over nature except by obeying her' (2000:100). This is what indigenous cultures have always understood: they find themselves accountable not only to the past, present, and future generations but also to the higher laws of nature that surpass human interests. To follow such a path constitutes an efficient way to contain the excesses of human over-inflated ego.

The conflicts of interests that can arise between human interests and those of nature appear as the main hurdle of the theory. The Indian Case *K.M Chinnappa v. Union of India* (2002)[168] is an example of a legal situation in which the interests of nature have overcome those of humans. The case dealt with a dispute over the extension of an iron mining lease in a national park, which was a hotspot for biodiversity. The extension of the contract was not granted by the Supreme Court for anthropocentric but also ecocentric reasons. Indeed, the Court acknowledged 'the right to a healthy environment' without which 'it would be impossible to live with human dignity' following, by doing so, the Art. 21 of the Indian Constitution. But it went so far as to state that '[b]y destroying nature, environment, man is committing *matricide*, having in a way killed *Mother Earth*' (ibid.; emphasis added). By doing so, it thus declared that nature has an *intrinsic worth*, that humans are only a part of it and have a duty to protect the comprehensive Earth community. Other examples of earth-based jurisprudence can be found in other parts of the world. For instance, the *New Zealand's' National Parks Act* is also earth-centred. As Filgueira and Mason (2011)

[167] For a further analysis of the constitutional protection of nature derived from Earth Jurisprudence principles, see Chapter 6. Interestingly, we can already notice that the infringement of the Great Law implies the possibility, according to Earth Jurisprudence advocates, to disobey and protest (Burdon, 2011c: 71). The right to civil disobedience will be further examined in Chapter 6.

[168] The Proceedings of the Judgement are available [Online] : https://www.legalcrystal.com/case/667754/k-m-chinnappa-t-n-godavarman-thirumalpad-vs-union-india

explain, 'it is founded upon the principle that National Parks will be protected in perpetuity for their "intrinsic worth" in the national interest' (p. 197).

A more efficient philosophical basis for ensuring ecological protection is, indeed, to defend that nature is not *only* a resource but also has value in itself. This value is drawn from 'existence itself' (Berry, 2006: 126) and from the fact that each natural element plays a part in the community of life. Like humans are granted rights in recognition of their existence – for instance in the United Nations Declaration of Human Rights (UDHR) – natural entities must be recognised as components/participants of the great community of existence. The fundamental ecological principle being *interconnectedness*, we must acknowledge that each aspect of the functioning ecosystems contributes to the health and integrity of the whole or, in other words, that ecological systems have 'whole maintaining' characteristics (Cullinan, 2002: 74), that is they sustain, in an interrelated way, the conditions of life on earth.

Insofar as only humans can make judgements concerning the rights of nature, it will require that we expand the way we apprehend the world, basing ourselves on the holistic and relational models for instance offered in postmodern science[169]. However, the rational, detached view offered by science might not be enough to cope with the great crisis we are facing. As Goldsmith says, '*A moral and emotional commitment is required*' (1993: 77; emphasis added). The Psychological and emotional connexion to nature can surely support a healthy environmental virtue ethic. A direct contact with nature, as Curry says, 'tends to develop in healthier physical, emotional, psychological and social development, starting with a stronger sense of wonder and of being alive, and extending to create creativity, learning ability, self-esteem

[169] For instance, the scientific acceptance of Gaia's hypothesis constitutes a drift away from the mechanistic understanding of nature toward a systemic and holistic understanding of the universe. According to this theory, the Earth is an auto-regulative system produced and maintained by the sum of life (Margulis, 1995: 139).

flexibility, curiosity, social cooperation and appreciation of boundaries' (2011: 170). People who feel positive and full of gratitude consume less, have other values than those of exchange and use, profit, time-management, or efficiency. They develop alternative values linked to the pleasure of reciprocity, of aesthetics and emotional openness to others. Indeed, the development of an ecological culture is necessary to see the emergence of an expanded psyche and ecological maturity. Paradoxically maybe, it is by forming closer ties with the whole of nature that humans will recover and rediscover their humanity, that is by restoring relational ties of compassion and community with the more than human world. What is needed most is a more expansive and generous consciousness which would embrace the whole of nature and feel a sense of connectivity with other species.

In addition to protecting life in general (biophilia), another reason for granting rights to nature is to ensure the continuation of decent and humane conditions of existence on the planet. Indeed, it follows from the concept of interconnectedness that humanity depends on nature to survive and flourish. For Cullinan, '[c]limate change is an obvious and dramatic symptom of the failure of human government to regulate human behaviour in a manner that takes account of the fact that *human welfare is directly dependent on the health of our planet* and cannot be achieved at its expense' (2011: 232-234; emphasis added). A cynic view could hold that the 'homeostasis' of the whole system will be restored through human extinction or the drastic reduction of human population due to the destruction of ecosystems. Contrary to that view, proponents of Earth Jurisprudence are not misanthropic. In effect, as I argued in another work (Fremaux, 2011: part 3), *ecocentrism supports humanism* ('humanist ecocentrism'). Seeing the planet Earth as 'a single community bound together with interdependent relationships' (Berry, 2006: 150) and the humanity as a part of that comprehensive community, Earth jurisprudence advocates consider that human life widely depends, for its 'civilised continuation', on the health, integrity, and life support functions of ecosystems. Moreover, the natural world is not only necessary for the biological survival of humanity. It is also, as Berry shows, necessary to fulfil

other fundamental needs, such as 'the wonder needed by human intelligence, the beauty needed by human imagination, and the intimacy needed by human emotions for personal fulfilment' (Berry, ibid.). We find here an assumption also shared by weak anthropocentrists (See Barry, 1999).

Past and present environmental laws have not been able to protect the Earth's resources, which continue to be depleted and polluted at an unprecedented rate. This failure calls for a new approach where the benefits would not be exclusively anthropocentric, where the environmental rights would not be only held by humans but also by nature. 'In other words, *a rule of law for nature* should be considered' (Laitos, 2013; 215; original emphasis). Insofar as threatened nature cannot represent itself in courts, it would be incumbent upon legal spokespersons, such as non-governmental organisations or eligible delegates to deputise for it[170]. In such a revolutionary context, natural entities could be represented in courts and lawyers would have the capacity to sue on behalf of injured nonhuman legal subjects[171]. Their goal would be to raise the rights and interests of the natural resource, to exhibit the harms made to it, such as pollution or contamination, or denounce human interferences that lead the resource to extinction. The introduction of the intrinsic value of natural objects in legal law requires, according to Bugge (2013: 12), the fulfilment of three conditions:

- First, 'the intrinsic value of nature must be accepted as an interest that has legal standing in the sense that it can be defended in courts';
- Second, 'there must be persons or organisations with resources, competence, and independence willing to represent nature';

[170] Concerning this condition of representation, weak anthropocentrists could argue that the defence of nature still relies on humans' preferences, that is on what parts, species, entities of nature, humans are ready to stand for in courts. The specificity of post-anthropocentrism lies in the fact that representatives could choose to defend interests that are foreign (even opposed) to humans.

[171] Worth noticing here is the fact that in medieval Europe, we find formal legal proceedings in which animals, either as individuals or groups, were put on trial. They were often provided with all the same rights as people, including the right to have a lawyer and a fair trial. I owe this point to John Barry.

- Third, 'the judiciary system must accept legal standing for both the natural object and the representative.'

To grant intrinsic value to natural entities amounts to a radical shift in legal theory: 'the world becomes a place no longer composed exclusively of resources, but one which is imbued with living legal subjects' (Fosci & West, 2016: 73).

As previously seen (Section 4.2), the attribution of intrinsic value to non-human natural entities is considered, as politically irrelevant and inapplicable by most environmentalists. However, many institutional approaches have already encompassed the intrinsic value of nature, the legal standing of non-human entities being an issue in environmental regulatory legislation since a few decades. For instance, the United Nations World Charter for Nature 1982), the first international declaration of human responsibilities concerning nature, was underpinned by strong ecocentric principles. The underlying premise, accepted by most developing nations, was to provide the environment with substantive and procedural protection from the adverse impacts of social and economic development (Wood, 1985: 977). Intended to exert political and moral, but not a legal force on member states, this aspirational charter was comparable to the Universal Declaration of Human Rights (UDHR), in that it presented a set of principles for which individuals and nations should strive. It proclaimed the intrinsic value of nature in this way: '[e]very form of life is unique, warranting respect *regardless of its worth to man*, and, to accord other organisms such recognition, man must be guided by a moral code of action' (Preamble; emphasis added).

A non-governmental Universal Declaration of Animal Rights was proclaimed in 1978 by UNESCO. The World Commission on Environment and Development (WCED), in 'Our Common Future', although almost unnoticeably, thus expressed the view that nature has intrinsic value: 'the case for the conservation of nature *should not rest only with development goals*. It is part of our moral obligation to other living beings and future generations' (WCED, 1987: 57; emphasis added). The legal recognition of nature or some parts of the natural environment as having legal personality is

emerging everywhere around the world. In November 2016, a captive chimpanzee named Cecilia at the Mendoza Zoo in Argentina was declared a 'non-human legal person' with 'inherent rights' by the Mendoza Court of Guarantees. The establishment of legal rights for non-human entities has already breached the boundaries of the animal world: in 2014, the government of New Zealand surrendered a national park and granted it with the status of a legal entity 'with all the rights, powers, duties and liabilities, of a legal person'. The minister of Maori affairs at that time, Pita Sharples, described the arrangement as 'a profound alternative to the human presumption of sovereignty over the natural world' (quoted in Zimmer, 2017:1). In 2012, the Whanganui River, again in New Zealand, received the legal status of a person with all the rights and duties attached to that status, including the right to be represented by legal guardians. Indeed, many inanimate objects have been endowed with legal personhood (corporations, joint ventures, trusts, ships, etc.). Therefore, why valleys, forests, oceans, meadows, rivers, lakes, estuaries, beaches, or even air could not be entitled with legal rights?

Even more notably, nature as a whole also developed into a legal subject in some constitutions. In 2008, Ecuador became the first country in the world to give constitutional protection to natural ecosystems and legally enforceable rights to nature. Indeed, as Shelton (2015) summarises 'Articles 10 and 71-74 of the Constitution recognise the inalienable rights of ecosystems, give individuals the authority to petition on the behalf of ecosystems, and require the government to remedy violations of nature's rights, including "the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution"' (n.p.). Bolivia followed Ecuador in 2009 to protect natural ecosystems from the owners' immediate interests or capitalistic attempts to appropriate the lands. The constitutional amendment giving equal rights to nature and humans was first implemented by the 2010 Law of mother Earth (*Pachamama*). The Universal Declaration of the Rights of Mother Earth (UDRME) was inspired by the Universal

Declaration of Human Rights (UDHR), which aimed at protecting humans' rights from potentially harmful bodies of government. The supreme value of the person was then originated 'in the fact of existing'. In the same vein, the UDRME, should 'protect our partners on Earth from the excesses of humans and human governance systems. Like our own value, the value of nature does not arise from our decisions on its worth but from its existence on this planet' (Sheehan, 2013: 227). This is also what affirms the first principle of Thomas Berry's Earth jurisprudence: '[r]ights originate where existence originates. That which determines existence determines rights' (Berry, 2006: 149). This is from this principle that derives the second proposal: '[t]he universe is composed of subjects to be communed with, not of objects to be exploited. As subjects, each component of the universe is capable of having rights' (ibid.)[172]. The goal of such a broadening of value is that nature ceases to be merely a human property, which constitutes a necessary step to induce a great betterment of the environmental situation. The UDRME was approved by a delegation of over 35,000 people, representing 140 countries which assembled in Cochabamba, Bolivia in 2010 (that is by a world citizen's assembly). Making a clear comparison with the UDHR, the article 1(4) states that '[t]he inherent rights of Mother Earth are inalienable in that they arise from the same source as existence'. Among these rights we find the recognition that 'Mother Earth and all beings of which she is composed have … the right to life and to exist' (Article 2, Section 1), and that '[e]ach being has the right to a place and to play its role in Mother Earth for her harmonious functioning' (Article 2, Section 2)[173]. Defending the rights to life, liberty and security of the natural world, this new legal considerability of nature was secured against arguments of costs or benefits held by the very economic systems which drive the

[172] For a discussion about the relevance of the notion of rights for nature, see Nash (1989), Rolston (1993), Livingstone (1994: 161), Plumwood (2002: 152).

[173] The orientation of the UDRME is clearly biocentric while the Ecuadorian constitution follows ecocentric principles. Biocentrism, as explained at the beginning of this section, is not the path followed in this thesis. The intention here is to raise awareness about the fact that legal principles based on non-anthropocentric views already exist in current juridical systems.

ecological degradation. As concludes Sheenan (2013), the '[r]ecognition of the rights of nature to exist, thrive and evolve will advance protection of the natural world from the excesses of human governance and private actions, which in turn will protect our own inherent, human rights to life, liberty and security of person' (p. 229).

In 2012, a new expanded version of the 2010 law was enacted, recognising Mother Earth as a 'living dynamic system'. In 2010, Pittsburgh, Pennsylvania was the first city in the United States to declare nature as a legal person and to ban 'fracking' within the city boundaries. Those examples, just a few among many, show that the recognition of legal personality to non-human entities has already reached the domain of policy decision and can also be compatible with the Western legal framework. Concerning the rights of *Pachamama*, the practical results are not yet flagrant insofar far as, to be successful, the constitutional text has to be supported by the executive power in the face of industrial, economic and social pressure but a first theoretical step has been taken which allows the shift of individual and collective perceptions of nature from a passive exploitable object to something with integrity and value.

In any case, the attempt to translate intrinsic value into legal environmental protection or to enshrine the rights of nature in Constitutions represents a direct opposition to the spread of instrumental and economic reason among legal and governance structures. It might not yet be successful but constitutes a step forward in comparison with the contingent and subjective defence of nature according to human non-instrumental interests and preferences advocated by weak anthropocentrists. Although the fight must be taken further on all possible fronts, the supporters of weak anthropocentrism might have to tighten their arguments to avoid their absorption in the pragmatic views expressed by neo-greens (among which some appear very Promethean while others proceed with their face masked under cover of

a 'safe and sustainable stewardship')[174]. The provision of objective intrinsic value to the natural non-human world, as Dobson argues, 'amounts to a substantive and subversive act of resistance' (1993: 208).

This 'great refusal' is particularly valuable in the Capitalocene era, where capital accumulation which entails nature's exploitation and destruction seems relentless. Indeed, events unfold as if the prospect of the destruction of the earth was easier to envision than the possibility of a moral, political and economic alternative. As Fredric Jameson and Slavoj Zizek put it: 'it's easier to imagine the end of the world than the end of capitalism'. Against the neoliberal consensus, considered as 'common sense', even in the face of considerable evidence of its life-destructive effects, the recognition of nature's inherent value can be seen as a potent challenge to the capitalistic instrumentalisation of the world. 'For centuries' as Laitos points out, 'humanity prospered by controlling, depleting and polluting natural's resources. Welfare was served when forests were turned into farms, wetlands into cities, mountains into means' (2013: 209). Undoubtedly, we must somehow be grateful for these processes which allowed civilisations to develop. However, under the rule of capitalism, humanity's impact on the natural earth has become more than unsustainable. The degradation of ecosystems is so fast that it can be assessed even from the standpoint of half a human life. Who among us could have ever believed that we might be the generation attending the extinction of elephants, giraffes, Siberian tigers, polar bears, rhinos, green turtles, etc.[175] all animals with which we have always been familiar. The world as we knew it, is just collapsing before our very eyes. The reduction of living beings to things and exploitable resources is not the only perspective possible. Indigenous cultures have, for long, considered nature as neither

[174] As Curry points out, the anthropocentric position paradoxically prevents those who are on the side of nature, from contesting the dominant cause of ecological destruction, that is instrumentalism. The frame of anthropocentrism to which they are tied restricts them to fighting the effects rather than the causes of the ecological crisis (2011: 56).

[175] For a list of 'endangered' and 'critically endangered' species, see [Online] https://www.worldwildlife.org/species/directory?direction=desc&sort=extinction_status

an enemy nor a simple means-ends or a commodity to be exploited. Nature was for them essential for life and was regarded as having an intrinsic value of its own.

As developed further in Section 6.4 (dealing with constitutional green Republicanism), the rights of nature should be constitutionally defended to provide a secure framework for the protection of nature. From the political standpoint, such a defence of natural entities could be associated with what Eckersley calls a 'democracy for the affected… tied by the potential to be affected' (2004: 112-113). Such a view entails the re-conceptualisation of democracy and the demos, the latter being henceforth understood as the 'affected community', regardless or social class, geographical boundary[176], nationality, generation or species. To do so, the opportunity to participate *or otherwise to be represented* in the making of the laws and environmental policies 'should literally be extended to *all* those potentially affected' (ibid.; original emphasis). In such a post-Kantian and postliberal ideal, non-human, as well as most vulnerable people's interests, should be given *representation* in the democratic process. This anthropogenic but post-anthropocentric outlook would enable 'human agents to consider the well-being of non-human interests in ways that go beyond their service to humans' (ibid.). This view is 'post-Kantian' insofar as it opposes Habermas' procedural discursive account of moral validity (according to which only rational, free and informed persons able to participate in the construction of norms are moral agents); it is 'postliberal' insofar as it avoids a purely instrumental posture towards others (humans or non-humans).

The ambit of the 'ecological democracy' conceptualised by Eckersley is very large. It extends the concept of the moral and political subject to indeterminate communities 'whose members are not all capable of reciprocal recognition' (ibid: 113)

[176] The difficulty here rises from the fact that the boundaries of the nation-state do not necessarily coincide with those of the ecological moral community. This suggests the need for more flexible democratic procedures but also for the development of international environmental laws and organisations.

and recognises the dignity and value of non-humans as well as the natural communities upon which the life of both humans and non-humans depends. Such an ambit claim is challenging and requires legal and political innovations such as the representation of those who cannot represent themselves (future generations, and non-humans) but also the representation of interests which are not entirely knowable (non-human interests). It would entail political progress as it would force risk generators (whether corporations, public authorities or private individuals) to face the claims of an enlarged number of potential victims, making their activities harder to justify or to carry out. Indeed, as Eckersley (2004) says, '[t]he failure to provide an acceptable justification to victims and/or their representatives should mean that the ecological risk-generating activity ought not to be undertaken as a matter of environmental justice. This *reversal of the burden of proof* would have profound consequences on the conduct of both business and government' (114; emphasis added). Such legal tools could undoubtedly foster attitudes of respect and care for the natural world. In this direction, the fight to create environmental crimes and specifically the movement led by Polly Higgins to introduce the crime of ecocide, a proposal which, in Higgins' terms, 'has at its heart a fundamental intrinsic value – the sacredness of all life' (2012: 9), would implement a decisive shift in our outlook, from the predominance of profit and ownership values to care, responsibility, and life-affirming values. Such a law would again inverse the burden of proof and 'create a pre-emptive duty on corporate, governmental and financial activity to prohibit the mass damage and destruction to eco-systems… By doing so, the protection of interests shifts from those few who have ownership to the protection of all beings' (*ibid:* 10). Institutionalising the crime of ecocide would help avert the commodification and destruction of the world by a market capitalism that can be considered today as the main ecocide perpetrator.

4.5. Conclusion

This chapter has sought to make a case for a post-anthropocentric ethical and legal framework, which encompasses both the defence of humans' enlightened interests and nature's intrinsic value. It has highlighted the relevance of nonanthropocentric worldviews showing that, in the Capitalocene context, a radical and scientifically-based interconnected conception of life, with its ethical, political and legal consequences, might better be able to challenge the anthropocentric planetary stewardship offered by Anthropocene boosters and neogreens than traditional green anthropocentric positions. It has also aimed at showing that the defence of the intrinsic value of nature has already some grounding in existing legal systems which might serve as an example for further developments in jurisprudence (a work currently being done by the 'wild law' advocates). As indicated above, the theoretical legitimacy of the enlightened anthropocentric position was not questioned. It is rather the concrete (lack of) results of the emphasis put on human interests in a time particularly marked by individualism, greed, and selfishness, that has been challenged. As Evernden (1985) says, '[b]y basing all arguments on enlightened self-interest the environmentalists have ensured their own failure whenever self-interest can be perceived as lying elsewhere' (p.10). Indeed, being anthropocentrist means to remain within the framework which has created the crisis. However, and because of the provisional absence of an 'ecological culture', ecocentrism will not manage alone to save the earth: as Curry (2011) says, 'a strategic appeal to anthropocentric value (human self-interest) may be an unavoidable part of the argument for an ecocentric outcome' (p.59). This is why this chapter has tried to show the necessity to bring together enlightened anthropocentric and humanist nonanthropocentric views to oppose the capitalist instrumentalist conception of nature and the new ecocidal assault planned by Anthropocene cheerleaders. As Sylvan and Bennett (1994) say, the emergency now is 'to set anthropocentric concerns within

ecocentric concerns' (quoted in Curry, 2011: 60). The post-anthropocentric stance defended in this thesis is on the side of traditional preservationist worldviews. It argues against strong anthropocentrism, that is against what Cafaro names the 'bold call to selfishness and human racism' (2014: 138), which is currently fuelled by capitalist and resourcist practices. As show the history of environmental law and governance and the failure of liberal governmental systems to successfully address the environmental crisis within the existing growth-based institutional framework, this thesis takes the claim that capitalism cannot be internally reformed in an ecological direction and needs to be overcome by alternative post-growth, post-liberal and post-capitalist forms of organisation. The move toward these new institutions, respectful of nature and humans, is a necessary step toward an 'ecological civilisation'. The economic components of this transition will be analysed in the next chapter. The institutional and political elements will be examined in Chapter 6.

Chapter 5

A new Green Political Economy for the Anthropocene

> I would ask our friends in the world of economics to weigh our arguments that over the long haul of life on this planet it is the ecologists – and not the bookkeepers of business – who are the ultimate accountants.
> — Stewart Udall (1971: 176)

5.1. Introduction

Our planet needs a new economics. It needs a new economic model, built on ethical arguments rather than on abstract mathematical formalism; a new economic model that does not only value what is priced or what consumers desire against civic and ecological duties; a new economic model, which breaks free from the dominant myths of the rational-actor theory *(homo oeconomicus)* and the market efficiency hypothesis; last but not least, it needs a new economy grounded within the biophysical

realities of a finite and fragile world and which acknowledges its secondary role in the web of life. In ecological economics, as Capra and Jakobsen note, 'the economy becomes the servant of nature, not the master of nature. The economic system must [indeed] be integrated into the organic network of reality – the web of life' (2017: 836) (see Figure 5.1). The field of ecological economics is characterised by the fact that, contrary to orthodox economy, it treats the economy as a subsystem of Earth's larger ecosystem, and emphasises the preservation and irreplaceability of natural capital.

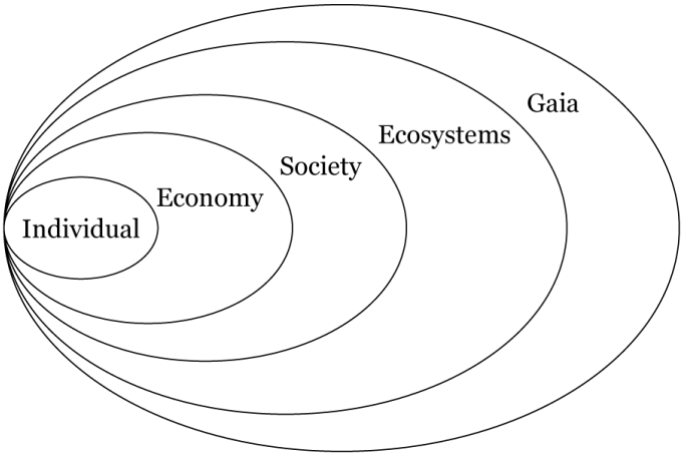

Figure 5.1: Economy as a nested system (Capra & Jakobsen, 2017: 836).

It opposes the rhetoric of many of those in positions of power (economists, politics, etc.) who ground their model on the unrealistic premise that physical reality and the laws of thermodynamics are subservient to ephemeral and contingent economic paradigms. Contrary to that, the science of ecological economics is 'a vision of economic development that embraces ethics, affirms life, and argues for well defined-limits to human economies' (Erickson, 2015: xi). However, the journey of ecological economics remains, in his words, 'unfinished' (ibid: title). The central commitment of the ecological economics academic field, which appeared in the late 1990s[177], was to construct an economy embedded within the biophysical realities of a finite world and to lay down the moral obligations of a just society by granting a fair

[177] It was inspired by Herman Daly's 1968 essay.

share of resources. However, these conditions were not met, and ecological economics became 'a subdiscipline of economics applied to environmental problems' (ibid, 2015: x). In other words, it fell into the pitfalls of what David Korten (2010) has named the 'global suicide economy' as oppose to the 'living economy'. Our systems of production still operate on the old assumption that nature is and will always be abundant or that it can be replaced by efficient artificial capital (strong substitutability). 'This assumption', as says Sachs, 'is a legacy from the early nineteenth century, when economic activity was minuscule with respect to the annually renewed wealth of nature' (2015: 198). This type of reasoning, as showed Chapters 1 & 2, is still very vivid among ecomodernists who think that human inventiveness can always push back the limits of nature or replace functioning ecosystems by adequate technologies (See Section 5.3). However, the assumption about nature's boundlessness has already collapsed, the Anthropocene being itself the symptom of a biosphere which is reaching its boundaries (See figure 2.1). The so-called 'ecological crisis' reveals in many aspects the vulnerability of nature – and the vulnerabilities of societies – and calls, therefore, for a new ecological economics as well as for a new way of inhabiting the world.

The purpose of this chapter is to offer a critical account of the failures of mainstream environmental economics, to explore how the initially promising concept of sustainability has been unsuccessful in providing alternatives to the continuing expansion of economic and technological systems, and to propose a constructive agenda for an ecological economics in the Anthropocene. It presents an argument against the core features of 'ecomodernism' (already analysed in Chapters 1 and 2), that is the new Trojan Horse of neoclassical economics. It suggests that the ecomodernist theoretical corpus which presents itself as a form of sustainable/green theory praising economic and cultural changes is only a new version of the well-known neoclassical agenda, that is an economic model which is dangerously ecologically and socially flawed in several aspects. The first shortcoming lies in the

ecomodernists' denial of ecological boundaries which makes them support a robust conception of substitutability (substitution of human capital for natural capital) and a consequent weak version of sustainability (Section 5.2). Secondly, ecomodernism is flawed in its conception of unlimited economic growth as a sustainable pattern for human societies as well as in its conception of human nature understood under the reductionist concept of *Homo Oeconomicus* (Section 5.3). The last section will present the reconstructive components of a sound ecological economics (strong sustainability, post-growth and post-capitalism) considered as a sustainable alternative to the neoclassical economics agenda in general and ecomodernism in particular.

5.2. Strong substitutability versus strong sustainability

The mainstream environmental economics agenda (loosely called 'green economy'[178]), which was formalised in the late 1980s and early 1990s, has failed to bring about, not only in economics but also in social sciences and humanities, the much-needed paradigm shift necessary to address the ecological predicament. Indeed, environmental economics has today largely become a sub-discipline of mainstream economics, borrowing its main foundational elements from the standard growth-based economic model, no matter how wrong and destructive this model has already proved to be[179]. The predominant (shallow) version of environmental economics has pursued the mainstream economics goals and orthodox GDP growth agenda based on fossil fuels, reinforcing, by doing so, the power of market institutions and the

[178] See for instance the work of Pearce (1992, 2013; Pearce et al.,1989). David Pearce is a pioneer in environmental economics. According to him the greening of economy can be achieved through market signals such as environmental taxes and tradable pollutions certificates in order to 'decouple' the economic growth from its environmental impact and avoid constraints on individuals ('business-as-usual' scenario).

[179] We consider, for instance, sustainable approaches such as those that dominated recent Paris climate summit and the post-2015 sustainable development goals (SDGs) as belonging to the shallow trend of this green economics. For a short analysis of sustainable development failures and the need for more (radical) political economy, see Khotari, Demaria, Acosta (2015). See also the work of John Barry (2012, 2016a, 2017).

capitalist organisation of the world economy. As Thomas Friedman uncritically puts it, the green economy represents 'the mother of all markets' (2008: 172). Environmental economics is today dominated by a reformist agenda according to which regulations, market corrections (incentives, subsidies to energy transition, eco-labelling, product certifications, etc.), and governmental actions (such as conventions and protocols, greening and social, institutional responsibility), are supposed to offer a 'sustainable' growth. This view believes in the efficacy of economic tools and in the greening of capitalism to solve environmental issues. In other terms, it contends that ecological problems can be 'managed' within the system which has created them. As Lövbrand et al. state, '[t]he fundamental challenges to societal organisations posed by the Anthropocene are, paradoxically, to be countered by many of the same institutions that have allowed the recent conquest of the natural world. Among the recurring suggestions for Earth System stewardship and governance we find environmental treaty-making, carbon pricing mechanisms, public private partnerships and geoengineering technologies' (2014: 8-9), including the unflagging rhetoric about the necessity of GDP measured economic growth. Green capitalism maintains a negative spin and offers an illusionary response to the ecological crisis: thanks to it, increased economic rates of activity are regarded as the solution to problems caused by rising levels of production and consumption. The sustainability crisis is being exacerbated by the very patterns that are promoted as its solution. Instead of deconstructing the logic of capital accumulation – based on energy-intensive, materialist and consumer system – environmental economics has led, through the mechanisms of pricing, valuation, monetisation and financialisation of nature, to a 'fictitious Conservation' (Büscher, 2012: 20), an 'on-going commodification of natural things' (Heynen and Robbins, 2005: 6) and a dramatically worsening of the environmental situation. 'Selling nature to save it' (MacAfee, 1999) has indeed served the neoliberalism's purpose, that is the expansion and intensification of global capitalism (Harvey, 2005) while deepening the ecological crisis and putting the

survival of humanity at risk. To consider natural systems as a potential source of lucrative 'markets', does not only entail the death of forests, rivers, and ecosystems in general but also threatens the human species itself (see Chapter 4). The gamble of eco-capitalists is the idea that the 'hidden hand' of free market forces and profit-incentivised technological innovation will resolve social, economic and environmental problems, and that, for example, Megatechnologies such as solar radiation management will 'fix' the climate and reduce the impacts of human activity on the planet.

Green capitalism is an approach that permeated our culture in the wake of 'sustainable development' theory: it is (in)famous for its eco-friendly products (hybrid cars, energy-saving lamps, biofuel, etc.), its lobbying efforts toward political institutions, its supports of carbon markets, and its advertising through greenwashing. Dennis Meadows, the leader of the group of researchers who wrote the ground-breaking report *The Limits to Growth* (1972), today confesses that 'it is too late for sustainable development' (2013: 195, title; my translation). In 1972, as he points out, we had reached 85% of the global Earth carrying possibility. Today, we are at 150%. Therefore, there is no other reasonable option than to de-grow and to rebuild a new regenerative economic model which takes into account the blind ecological and social spots of our societies.

What is needed is, indeed, an urgent paradigm shift. When Adam Smith wrote *The Wealth of Nations* in 1776, and built his theory about the 'invisible hand' of the market, there were no more than one billion people on Earth and the size of the global economy was three hundred times smaller than today (Raworth, 2017a: 65). This was the era of an 'Empty World' compared to the 'Full World' (Daly, 2005: 100) in which we are now living, with an economy that exceeds Earth's regenerative and absorptive capacity. As ecological economist Herman Daly points out, the global economy is so large 'that society can no longer safely pretend it operates within a limitless ecosystem. Developing an economy that can be sustained within the finite biosphere requires *new ways of thinking*' (ibid.; emphasis added). However, new

paradigm shifts, which are necessary to adapt to changing situations, always meet a high level of cognitive resistance as long as they have not converted enough followers (Kuhn, 1962). Today, the lack of ecological education, the evident media bias of media in favour of capitalist actors, the hegemony of consumer culture in capitalist societies and the decrease of ecological consciousness due to biophobic and disconnected ways of living make the reaching of a critical mass more difficult to achieve. Moreover, the general decline of rationality leaves room to the faith that things will get solved anyway by *technological innovation* and/or by *growth* itself (market expansion), namely the two pillars of green capitalism. This lazy and quasi-religious mode of thinking is itself encouraged by media industries which behave like watchdogs of oligarchies. As Murphy says, '[m]odern society is assumed resilient, adaptable, and will find timely solutions no matter what it does to its natural environment' (2015: 323).

The sustainability discourse initiated by the Brundtland commission in order to meet 'the needs of the present generation without compromising the ability of future generations to meet [theirs] (WCED, 1987: 8) has today been appropriated by neoliberal capitalism in order to transform nature and social relations into economic entities subordinated to the imperative of profits and the law of markets. Green capitalism and the visions it implies are, therefore, nothing less than 'a renewed strategy for profiting from planetary destruction' (Foster et al., 2009:1). If the fraud involved in this concept has been largely uncovered (see, for instance, Tanuro 2013, Smith R. 2011), it is today taken up by a revival of ecological modernisation theory, dressed up in the new clothes of 'ecomomanagerialism', 'ecopragmatism' or 'post-natural environmentalism' (Ellis, 2009). This new approach, loosely known as 'ecomodernism' and embodied by the Long Now Foundation, the Copenhagen Consensus or the Breakthrough Institute embraces the new Anthropocene narrative as the opportunity for humanity to claim its legitimate power over the planet and pursue what Luke (2006) calls its 'sustainable degradation'; that is a system which

measures, monitors and manipulates ecological degradation and offers new opportunities and justification for the capitalist institutions to prolong the ecocide (as outlined in Chapters 2 & 3). Indeed, as the Marxist theorist suggests, this system claims to solve ecological issues in managerial, commercial and judicial terms (ecomanagerialism, ecojudicialisation and ecocommercialism) but it especially permits those in power to maintain the appearance that 'something is being done' while going on extracting value from nature (ibid.:112).

The ecomodernist standpoint is characterised by 'utopian presumptions, including technological mastery of nature [and the use of] key concepts such as post-carbon society, decarbonisation, low-carbon transition' (Murphy, 2015: 317). These latter are all green political economy core ideas that Orwellian ecomodernists use as a 'newspeak' to hide the real intentions behind their programme. They seek to defend an optimistic and wishful thinking for societies 'that have locked themselves into carbon-based infrastructures where default options are fossil fuels leading to an emerging path-dependent hypercarbon world' (ibid.)[180]. Although their conclusions are very close to those of traditional sustainable development (that is a call for high-tech 'clean' products, economic growth, technological fixes, etc.), they differentiate themselves by the shift from fearful predictions to a 'dreams and opportunities' discourse: offsetting the 'dark side' of climate change they have captured the word 'Anthropocene', or rather the expression 'good Anthropocene' to show that we now live on a domesticated, humanised planet that calls for more human managerial action, rationalised domination and active technological stewardship. Indeed, their rationale goes well beyond the fact that humanity's stratigraphic imprint in the ground of the planet would be now discernible. It relies on several uncovered utopian premises, one of them being the *technological utopia* or the on-going refrain that even if resources become scarce and if economic growth causes environmental problems,

[180] See also Mitchell's analysis of 'carbon democracy' (2013) that shows the coevolution of modern democratic governance and the increasing exploitation of fossil fuel, the democratic politics of the Western world involving the processes of producing and using carbon energy.

technology steered by market incentives will timely find solutions. As Murphy notes: '[a]lthough planet Earth is finite, human reason is not, and its market and technological manifestations will make the cornucopia last forever' (2015: 323). According to ecomodernists, recent market-driven technological innovations to extract oil and natural gas from shale and bituminous sands, as well as deep-water drilling, seemingly corroborate 'the renewability or substitutability of even non-renewable resources and validate the utopian premise of eternal energy abundance' (ibid.). As Redclift says, 'the availability of cheap oil fosters myths of unlimited material abundance' (2009: 374). According to ecomodernists, carbon-free technologies such as nuclear power[181] or other 'sustainable' energy supply (solar, wind power, etc.) must be pushed forwards to provide cheap, clean and abundant energy and go on 'bio-fuelling the hummer' in Western societies (Barry, 2016). The ecomodernist vision seeks to 'enlarge' planetary boundaries…thanks to the 'acceptance of the role that science and technology have to play' in the rearrangement of socio-natural relationships (Arias-Maldonado, 2014: 9). For the ecomodernist thinker, the programme is enunciated as follows: 'hybridisation, fungible capital, ecological restoration, technological interventions, even climate engineering: these are the instruments that the control of socio-natural relations in the Anthropocene seem to call for' (ibid.: 10). As we can assess here it varies very little from the former green capitalist agenda.

The Degrowth movement has provided a critique of the *Ecomodernist Manifesto* (2015), which can be summarised in seven statements:

1. The *Manifesto* assumes that growth is a given.

[181] Nuclear power is regarded by ecomodernists as being a 'climate-friendly' source of energy because it does not entail the burning of fossil fuels. However, the other problems it causes – long-term radioactive waste, centralisation, uncertain safety and links to weapons proliferation – render this source of energy incompatible with a resilient and sustainable future.

2. Ecomodernists believe in the myth of decoupling growth from impacts[182].

3. The ecomodernists cannot decide if technologies are the problem or the solution.

4. Ecomodernism is not very 'eco'.

5. The *Manifesto* has a narrow, inaccurate, and whitewashed view of both 'modernity' and 'development'.

6. Ecomodernism is condescending toward pre-industrial, agrarian, non-industrialised societies, and the Global South.

7. The *Manifesto* suffers from factual errors and misleading statements

(Source: Caradonna et al., 2015).

One of the main misleading ecomodernist core idea that we need to address – an idea also shared by orthodox economists – is the belief in the substitutability of natural capital. As Costanza et al. note '[a] standard assumption of neoclassical economics has been that factors of production are highly substitutable' (2015: 95). Such a paradigm is usually called 'weak sustainability': '[w]eak sustainability assumes that human-made capital is a substitute for natural capital' (ibid.: 78). The 'large substitutability' assumption has, so far, dominated orthodox economics which has admitted all kinds of trade-offs between human-made and natural capital to facilitate markets expansion. On the other side of the spectrum, the strong sustainability advocated in this thesis entails a limited substitutability with a view to preserving nature for humans and nonhumans' sake (See chapter 4). This outlook is grounded on what has been previously called the post-anthropocentric ethics.

In the debate between substitutability and sustainability, ecomodernists adopt a consensual and orthodox position in favour of the former one that they justify 'ecologically' by presenting the principle of sustainability as a 'dynamic' and 'open'

[182] Ecomodernists do not only praise the decoupling of economic activity; they also defend the idea that human beings should be decoupled from the land, through massive and rapid urbanisation, and intensifying agriculture, urbanisation and agricultural intensification going hand in hand. The myth of decoupling will be addressed in the next section.

concept whose content and forms are not fixed in advance (Arias-Maldonado, 2012: 79). Sustainability after the end of nature (or the 'post-natural sustainability') is said to overcome the conflict between strong and weak sustainability, between the advocacy of fixed natural limits and the belief in the (infinite?) substitutability of natural capital. For Arias-Maldonado, 'what is to be decided upon is the degree in which nature is going to be protected. In other words: the degree in which it is going to be substituted by human-made capital' (2012: 81). Thanks to the innovative ecomodernist theorist, the concept of 'sustainability' mostly rejected by environmentalists after its failure, finds here a new momentum. According to him, a difference should be made between *irreversibility* and *criticality*: it is not because natural capital can be irreversible, that humans could not do without it. For instance, the disappearance of species is not a 'bad' in itself: it is a bad only if it compromises or negatively impacts on human interests. 'In short', says Arias-Maldonado, 'irreversibility does not guarantee criticality' (ibid.: 83). Sustainability is therefore only about preserving 'the environmental functions that are irreversible *and* irreplaceable [or critical] in terms of their contribution to human existence and welfare' (ibid.; original emphasis). In other words, it is only about protecting the environmental functions that 'cannot *arguably* be substituted by human-made capital' (ibid.; emphasis added)[183]. The problem of our lack of knowledge in the face of Earth system complexity (see Chapter 2) is evoked but does not constitute a serious impediment to the theory. On the contrary, the ecomodernist wishful mode of thinking uses the limitation of scientific knowledge in favour of its Promethean and Cornucopian argument: '[t]he (…) lack of certainty leaves room for different propositions about the amount of natural capital that deserves to be labelled critical to be advanced' (ibid.: 86). For instance, 'it is conceivable that further technological innovations may turn irreversible natural capital into fungible or even disposable natural capital in the

[183] As already evidenced in Chapter 3, nature's autonomy and agency (the 'non-identity' of nature) is absent from the ecomodernist thinker's discourse.

future: cloning animals is a case in point' (ibid.: 90). This means that even what is critically irreversible at the moment when we speak might become reversible in the future. The circle comes back around, and the door opens to all technoscientific and capitalist transformations of the planet on the account that one day, humans might be scientifically able to replace what they have destroyed[184]. However, scientific evidence shows more and more that natural capital might not be substitutable. Even White et al. who cannot be accused of indulging in traditional environmentalism admit that:

> in terms of global economic concerns, the simple and overwhelming body of scientific evidence documenting anthropogenic climate change, mass biodiversity loss, profound air and water pollution problems has unsettled many who have previously argued…*that all resources are infinitely substitutable.* Indeed, the idea that transformations of natural capital (…) are perhaps best seen as irreversible and possibly non-substitutable has become much more common (e.g., loss of biodiversity, climate change) (2016: 65-66; emphasis added).

As we have already seen (Chapters 2 & 3), technological optimism and wishful thinking are never far from ecomodernist assumptions (although they claim to embody the realistic and pragmatic turn in sustainability). Sustainability is generally defined as the capacity for continuance more or less indefinitely into the future or 'the capacity for continuance into the long-term future' (Porritt, 2005: 21). But the question raised by ecomodernist theory is: 'to continue *what*?' As we shall see further, what needs to go on, is the myth of 'endless, undifferentiated material economic growth… as opposed to contingent and historically limited feature of a normal and healthy human economy and a flourishing life' (Barry et al., 2015: 18). Calling to the rescue the notion of hybridisation, the ecomodernist thinker can conclude that the very concept of sustainability is anyway flawed as nature and society are

[184] This view is consistent with the ecomodernist relativist conception of natural boundaries as a constructed concept. Indeed '(transitory) natural limits' can always be socially reshaped thanks to technological and scientific innovations (decoupling).

fundamentally entangled: naturalness is not an absolute category (Arias-Maldonado, 2012: 92). Critical natural capital is *always already* social (ibid.; emphasis added). Consequently, the so-called 'critical' natural capital does not exist as such: it is *always-already* altered, *always-already* amended and manipulated and is *always-already* amenable to further manipulations. The 'critical' in critical natural capital is always qualified, and always potentially replaceable by technological innovation. The conclusion comes, therefore, naturally: 'a viable post-natural sustainability should also openly accept the role of science and technology as major facilitators of environmental adaptation' (ibid.: 93). It is through technological innovations that ecological impacts on human societies can be diminished and further hybridisation accomplished (which means the correlative decrease of natural capital according to the self-fulfilling prophecy of Ecomodernism[185]). Concerning the side effects of technology, the circle is also closed: future technology will solve the problems created by previous technologies. As Smaje notes, the *Ecomodernist Manifesto* 'consistently muddies the water between the certain, available technologies of today, and the uncertain, possible technologies of the future' (2015: n.p.)[186]. For instance, ecomodernists pretend that '[h]uman civilisation can flourish for centuries and millennia on energy delivered from a closed uranium or thorium fuel cycle, or from hydrogen-deuterium fusion' (Asafu-Adjaye et al., 2015:10). By saying so, they omit to acknowledge that there are currently no operating full-scale power plants using these technologies. Ecomodernists in particular and ecological modernisers in general 'rest their case…on the seemingly endless capacity of human beings to solve problems they have created' (Dobson, 2016: 292).

For ecomodernists, innovative technologies will allow humanity to replace natural capital with human-made capital. This is already happening with renewable

[185] The 'end of nature' narrative, as seen in Chapter 3, constitutes a useful theoretical justification for the further destruction of nature in its material aspects.

[186] It is worth pointing out that such assumptions about future technological developments are not confined to the Ecomodernist Manifesto authors and The Breakthrough Institute. They are also, for instance, at the heart of the 2015 Paris Climate Agreement. See Anderson (2015).

energies: wind, solar, or geothermic sources of energy will probably little by little replace coal and fuel. But here we are in the case of the replacement of one natural object for another. What about the substitution of natural objects for human made objects? What about, for instance, the substitution for trees? Insofar as ecomodernists reduce natural-hybrid-processes to their *functions* (Arias-Maldonado, 2012: 83), the replacement of 'natural' trees by plastic trees[187] – assuming that they would provide the same eco-services – would arguably not be an issue: even more, plastic trees would fit perfectly into smart cities and the notion of naturalness understood as a relative category. As Dobson says, in such a view 'plastic trees can be designed to perform the same ecological functions as real ones, and the loss of real ones represents no decline in the "overall capital base"' (2016: 294). In the same vein, the green liberal Wissenburg declares that a sustainable society could very well looked like 'a world-wide version of Holland stuffed with cows, grain, and greenhouses, or even a global Manhattan *without the Park*' (1998: 81; emphasis added).

Those who argue from the 'weak' sustainability and 'strong' substitutability point of view, assume 'that the world can, in effect, get along without natural resources' (Solow, 1974: 11). Or that the disappearance of natural capital at a place can be offset by economic compensation or by restoring nature somewhere else. Concerning the first argument, which is prevalent in governance policies, it means that the loss of critical irreversible (that is invaluable) natural capital could be compensated by financial assets, which is, of course, a fool's bargain and an ethical scam. Concerning the second argument, it assumes that unique habitats are commensurable with each other and can be turned into uniform measurable units, something that can only happen in the world of abstract mathematic economics which transforms all entities into measurable units, exchangeable on the market (fungibility).

[187] Cf. the debate around Krieger's article 'What's wrong with plastic trees?' (1973).

However, as Costanza et al. argue (2015: 95), the productivity of human-made capital is more and more limited by the decreasing availability of natural resources. Natural capital is becoming more and more a limiting factor. For instance, high-tech technologies heavily depend on little quantities of 'mineral resources', notably rare earth metals which are extremely scarce. Human-created capital and natural capital are indeed rather complements as the concept of strong sustainability supports than perfect substitutes (weak sustainability) insofar as human capital itself needs natural resources to become valuable (Daly, 1995). For example, labour and capital complement natural resources to transform them into products. What is for instance the value of fishing boats if there are too few fishes in the oceans? What is the value of a refinery if there is no more petroleum in the soil? The argument for strong substitutability can only take place in 'the "empty world" economy'. Therefore, '[t]he neoclassical assumption of near perfect substitutability between natural resources and human-made capital is a severe distortion of reality, the excuse of "*analytical convenience*" notwithstanding' (Costanza et al., 2015: 115; emphasis added). There is little chance that plastic trees replace biological trees as far as the whole cycle of life is concerned. The 'strong sustainability' theorists, for instance, Beckerman (1995), Daly (1995) or Holland (1997) argue for the protection of natural capital in its own right because it cannot be substituted for human-made capital. On the contrary to that, the post-natural sustainability defended by ecomodernists offers, in the wake of ecological modernisation, a framework preferably open to substitution, hybridisation and nature financialisation that supports the neoliberalisation of nature; that is its segmentation and transformation in market value[188]. This fact is confirmed by their position about economic growth, a political and economic dogma that has pervaded

[188] This ecomodernist view of nature as sellable commodities and transferable or substitutable parts that can be exchanged on markets opposes the one defended in this thesis, that is a complex and holistic perspective on nature seen as an organic whole and a land community that can neither be bought nor sold.

all facets of society and that must not by no means be questioned. The issue of economic growth is examined in the next section.

5.3. Why decoupled growth? Because 'It's development, stupid!'[189]

As evidenced in the previous section, ecomodernists, like orthodox economists, deny the idea of 'natural boundaries' and 'limits to growth', arguing that technological innovations, resource efficiency improvements, pricing mechanisms and conservation efforts will 'decouple' growth from environmental damages. This theoretical model assumes that 'GDP growth can be separated from generating further ecological damage and can actually help regenerate ecosystems' (Alexander et al., 2017: 1). The two pillars of this strategy are the concept of 'substitutability' or the fact that human capital will substitute for natural resources (see previous section) and 'decoupling', which will allow us to produce (and consume) more with fewer resources. Decoupling is also associated with the 'dematerialisation' thesis, the idea according to which increases in technical efficiency allow to reduce the amount of ecological resources necessary to serve the same economic functions (i.e. doing more with less). As far as these strategies (decoupling and dematerialisation) are considered plausible, the growth paradigm is not questioned and can remain the core principle of a green or sustainable economics.

As already indicated (Section 5.2), 'ecological boundaries' for ecomodernists are always transitory and provisional: science and technology will be able to push the limits of what is possible. The denial of natural limits is a very common neoliberal justification for claiming that economic growth is not a problem but rather a solution… to the very ecological and socioeconomic issues created by economic growth itself. As Barry (2012, 2016b) shows through the 'Achilles Lance' metaphor,

[189] The expression 'it's development stupid', is the title of a Latour's article (2007). [Online] http://www.bruno-latour.fr/sites/default/files/107-NORDHAUS&SHELLENBERGER.pdf

economic growth is seen as a mythic recuperative power that can heal the wounds it inflicts. Arias-Maldonado's writings are no exception to the 'pouring oil on fire' ecomodernisation rule: contesting the work of Jackson (2009) or Victor (2008), he notes that '[i]t is dubious that we can "manage without growth" (…) because tackling climate change and adapting to it is *costly* (…) we can only be green while being rich' (2012: 119; original emphasis). And in effect, the vision of 'post-natural sustainability' offered by ecomodernists, namely a prospect which requires expensive technological innovations such as geoengineering and nuclear power, science and markets tools, will involve flows of capital only available in wealthy countries but, to say it roughly, is it that to be 'green'? The solutions offered by ecomodernists are not new. The decoupling strategy, for instance, underpins the 'green growth' paradigm and shapes, since very long, both national and international political and economic policies. It remains the dominant model within governments, academia, most environmental agencies and international institutions such as the United Nations, the OECD, the IMF, and the World Bank (Alexander et al., 2017: 1). Ecomodernists are paradoxically very conventional (even 'old-fashioned', according to Monbiot 2015[190]) and constitute an *arrière-garde* (rearguard) of the capitalist neo-liberal paradigm. Ecomodernism is the new neoclassical environmental economics according to which unlimited economic growth is both possible and necessary. 'Possible', thanks to the politically necessary myths of substitutability and decoupling required by neoliberalism and ecomodernism. And 'necessary' in their words, to eradicate poverty, hunger, but also to comply with the greedy and self-interested nature of *homo oeconomicus*. As analysed previously (Section 5.2), the neoclassical justification is that human capital can substitute for natural capital (natural resources) and that decoupling will allow an endless growth. By promoting increasing economic growth and the role of new technologies (cf. 'decoupling myth') in the mitigation of the crisis, they associate

[190] 'Meet the ecomodernists: ignorant of history and paradoxically old-fashioned' (Monbiot, 2015).

themselves with the doom and gloom scenario of 'business as usual' supported by sustainable development proponents. Can we create a sustainable society via deregulated financial institutions, new innovative green markets or the creation of speculative negative emission technologies? A study drawn up by Raskin and his colleagues (1998) showed that the 'business-as-usual' scenario would entail by 2050 an increase in world population by more than 50 percent, a doubling of food requirements, a continuing inequality in the sharing of resources, a rapid growth of carbon dioxide emissions which could entail serious ecological, economic and human health impacts, the loss of forests because of the expansion of agriculture, bio-energy-crops[191] and human settlements, and the chemical pollution of rivers and aquifers as a consequence of unsustainable agro-industrial farming practices. The danger of reaching critical crossing thresholds would probably trigger events that could tremendously affect and transform the planet's climate and ecosystems (See Chapter 3). The increasing pressure on natural resources and the persistence of poverty, inequality among and within nations will most likely cause conflicts and upheavals on the world scene[192]. Such a scenario constitutes a very precarious basis for a transition to a sustainable environmental future and offers rather a grim prospect to our descendants, including the barbarisation scenario in which the moral underpinnings of our civilisation would erode and eventually collapse. The 'business-as-usual scenario' might also be self-contradictory and inconsistent from the economic point of view since the social dislocation and the environmental degradation it entails could undermine its fundamental premise: that is perpetual economic growth. Those grim prospects are associated, in the ecomodernist optimistic vision, with the catastrophist scenario promoted by grumpy out-moded environmentalists. Ecomodernists would

[191] As Anderson (2015) explains, criticising BECCS (biomass energy carbon capture and storage) assumption underpinning the Paris Agreement 'the aviation industry anticipates fuelling its planes with bio-fuel, the shipping industry is seriously considering biomass to power its ships and the chemical sector sees biomass as a potential feedstock. And then there are 9 billion or so human mouths to feed. Surely this critical assumption deserved serious attention' (n.p.).

[192] For an interconnected view of world problems, see Appendix D.

probably urge the latter not to bother too much and, borrowing a Latour's article title, answer them that '[t]his is development, stupid!' (2007). Not only the ecomodernist theory (exemplified by the *Ecomodernist Manifesto*) rests on the modern myth that more growth and more technology will save us … from growth-based and technological impacts but it presents further humanisation of the planet as a positive path that we should optimistically embrace. One of the central arguments of their techno-optimist rhetoric is that human-induced environmental impacts will be, 'one day' (completely?) decoupled from economic growth.

As will be discussed below, the mythic economy defended by neoclassical economists and ecomodernists abuts against realities and hard facts. Let us first address the myth of decoupling. Simply said, 'decoupling' means that with the help of science and technology, people will be able to increase their standard of living while less damaging the environment. Decoupling means physically separating the economy from the rest of nature thanks to the intensification of technology. It should allow increasing consumption and production without the reverse effects on the environment. As defined in the *Ecomodernist Manifesto*, '[d]ecoupling occurs in both relative and absolute terms':

- 'Relative decoupling' means that human environmental impacts rise at a slower rate than overall economic growth. Thus for each unit of economic output, less environmental impact (e.g., deforestation, defaunation, pollution) results. Overall impacts may still increase, just at a slower rate than would otherwise be the case.

- 'Absolute decoupling' occurs when total environmental impacts – impacts in the aggregate – peak and begin to decline, even as the economy continues to grow (2015: 11).

The difference between 'relative' and 'absolute' decoupling constitutes the sensitive issue of the debate. Because the Western overuse of fossil fuels and non-renewable resources is one of the main factors of the global ecological crisis, the utilisation of technical innovations that induce more sparing of resource inputs for a given output, makes of course sense. This defines 'relative decoupling'. Although, as

Smaje puts it: 'relative decoupling is only useful if it enables societies to use less total resources or emit less total pollution, in other words, to achieve *absolute decoupling*' (2015: n.p.; original emphasis). The 'myth of decoupling' has already been challenged by alternative 'Limits to Growth' (LtG) theorists such as Meadow et al. (1972), Barry (2003), Jackson (2009), Victor and Jackson (2015), Wiedmann et al. (2015). etc. Jackson, for instance, suggests that the distinction between relative and absolute decoupling is essential for long-term sustainability but is rarely drawn in sustainability debates (see Dobson, 2016: 298). All studies show that the use of energy and raw materials does not decline in absolute terms. In other words, if we are achieving today relative decoupling in some domains[193], however, there is no absolute decoupling happening. On the contrary, ecological resources are declining almost everywhere over time, and environmental impacts are increasing. This is mostly due to the 'Jevons' paradox' (Alcott, 2005; Polimeni et al. 2009) according to which increases in technological and energy sufficiency are almost always followed by increasing consumption – and therefore overall ecological impact – due to various rebound effects[194]. Briefly said, the 'rebound effect' (or Jevons paradox) proves that possible energy or money savings achieved through technological improvements are nullified or over-compensated by growing demands (a situation described as 'backfire'). Indeed, the formula 'efficiency = energy savings = less environmental destruction' just does not work. The increase in efficiency and productivity translates into an increase in production, energy and resource use. As Jackson says, '[t]his somewhat counter-intuitive dynamic helps explain why simplistic appeals to efficiency will never be sufficient to achieve the level of decoupling required for sustainability. In short, relative decoupling sometimes has the perverse potential to decrease the chances of absolute decoupling' (2009: 95).

[193] For instance, the global energy intensity of GDP is today 33% lower than it was in the 1970s (Mastini, 2017: n. p.).

[194] On the Jevons Paradox, See Jevons (1866), Daly (1991), Victor (2008), and Jackson (2009).

We can of course never entirely ignore the possibility that some massive technological breakthrough could happen and change the situation but more realistically (and against idealist tendencies generally attributed to green theorists but that can be attributed to neoclassical economists), we need to rely on the sustainable options that are already on the table, such as enhanced energy efficiency, renewable energy and low-carbon technologies[195]. Technological change is essential but is certainly not enough to achieve, for instance, the stabilising of carbon emissions, just to name one of the many components of the environmental predicament. It is clear that the challenge needs more than technological means, scientific reports and military policy to be addressed. It requires from our societies to normatively confront the core elements that led us to the crisis. That is, to fundamentally question and remake if necessary, our economic system, political institutions, fundamental beliefs and cultural values (Chapter 6), as well as the social logic that locks us into damaging consumerism (6.2). Alexander concludes his critical analysis of techno-optimism by stating that 'decades of extraordinary technological development have resulted in increased, not reduced, environmental impacts' (2014: 9). All sources concur in saying that absolute dematerialisation is not taking place, even in the richest countries and that the 'techno-optimist' ideology of ecomodernism might have no rational basis (Alexander, ibid.). In the world of actually-existing capitalism, growth always means more energy use, more greenhouse gases and more environmental and life damages.

The other kind of decoupling advocated by ecomodernists is a physical decoupling of people from nature through urbanisation (smart cities) and agricultural intensification. More than half of world's population are now living in cities. By the end of the decade, it is expected that three out of five people will live in megacities, that is the towns of 10 million or more inhabitants (Bessoudo, 2015: n.p.). By 2050,

[195] As explained in Chapter 2, geoengineering is not a 'sustainable' and practicable option. Concerning nuclear power, the issues around waste disposal and decommissioning, as well as around resource constraints make this source of energy also 'unsustainable'.

70 percent are expected to dwell in cities, a number that could rise to 80 percent or more by the century's end (Asafu-Adjaye et al. 2015). Cities, with their compact buildings, proximity to infrastructures, and public transportation, are said to increase efficiencies, reduce energy use and consume fewer resources per capita. The idea that cities are constitutionally sustainable is being vigorously promoted by ecomodernists: '[c]ities are characterised by both dense populations and low fertility rates. Cities occupy just one to three percent of the Earth's surface and yet are home to nearly four billion people. As such, cities both drive and symbolize *the decoupling of humanity from nature*, performing far better than rural economies in providing efficiently for material needs while reducing environmental impacts' (*Ecomodernist Manifesto*, 2015: 12-13; emphasis added). The *Manifesto*, indeed, presents the intensifying of many human activities, such as farming, energy extraction, forestry, and settlement, as 'the key to decoupling human development from environmental impacts' (2015: 7). In particular, ecomodernists present the growth of cities as 'inseparable from improvements in agricultural productivity' (ibid: 12), the agricultural intensification being itself regarded as an essential element of reforestation, the fight against hunger, achieving human liberation.

However, there are some doubts that megacities are really sustainable. Kennedy et al. (2015)'s study, for instance, which analyses the 'urban metabolism' (the flow of energy and materials) of the 27 largest cities in the world, shows that these megacities, which account for 7% of the world's population consume 9% of global electricity, 10% of gasoline and produce 13% of global waste (2015: 5985). Moreover, megacities are not as dense as it is commonly said: outside packed city-centres, they encompass large urban conurbations, that is vast surrounding areas such as industrial lands, suburbs, harbours, which keep them running, as well as slums. Also, an urban style life involves many ecological resources and costs which are hidden to the urban dweller: quantities of goods and food need to be produced and transported; wastes need to be evacuated, artificial light, cooling, heating, etc. must be provided. Highways, bridges, airports, railways, industries, and many more

infrastructures must be constructed. In comparison, much less resources and lands are required for people living in villages. Aside from being less ecologically voracious, rural life provides livelihoods and supportive communities to scores of people. 'In other words, the environmental benefits of a city's dense urban core can be outweighed by the resource-inefficient, yet essential, areas on its periphery' (Bessoudo, 2015: n.p.). Contrary to what ecomodernists contend, urbanisation does not 'decouple human from nature'. Megacities are also caught in a spiral of growth, especially in developing countries (Barry, 2012: 63). They depend on highly integrated and complex systems which pose problems of fragility and resilience in the face of breakdowns. Additionally, big cities disconnect people from nature, which entails less ecological awareness, and less sustainable behaviours and habits. In relation to the agricultural intensification, many types of research following Amartya Sen's work (1962) demonstrate that peasant farmers offer the best chance of feeding the world and that small farms have better yields. As Monbiot (2008) says, some of the reasons might be that small farmers are more invested in their lands, offer greater labour input per hectare than industrial farming, spend their time trying to increase the productivity of their lands by building irrigation systems or terracing, varying crops, etc. Therefore, as he states, '[i]f governments [were] serious about feeding the world, they should be breaking up large landholdings, redistributing them to the poor and concentrating their research and their funding on supporting small farms' (ibid: n.p.). From an ecological point of view, small-scale farming requires less land than big farms to produce the same quantity of crops and offers, therefore, a better productivity (Smaje, 2015). It involves less transportation (local markets)[196], less energy-intensive inputs of fertilizers and pesticides, less marketing, advertising, packaging, warehousing, freezing, dumping, etc. than industrial farming. Small farming is more likely to protect bio and genetic diversity, to preserve the soils, and… to provide taste

[196] Western countries now import most of the goods and food they consume from foreign plantations and factories, which has a significant ecological impact regarding CO_2 emissions.

quality (the most widespread counter-example being the plastic tomato). All these elements make peasant and small-scale farming, community gardens, and local agriculture far superior from an ecological point of view to industrial farming[197]. The only superiority of the latter lies in the labour productivity, but low labour productivity can also be an advantage in places with high unemployment rates. Ecomodernists praise the intensification of agriculture and modernisation in general for having liberated many people from oppression and forced labour but they forget, as Smaje suggests, that '[modernisation] has also delivered ever more people into them' (2015: n.p.). How many people, indeed, are now suffering from hunger or malnutrition, packed off in the poor areas of megacities? How many have left their lands because of agricultural intensification to find poverty, unemployment or exploitive jobs in urban dehumanised areas? City slums certainly do not provide safe routes out of poverty for low-income farmers, and the modernisation of modernisation does not alleviate global poverty.

Ecomodernists, like ecological modernisers, do not offer other solutions to the environmental, economic, and social crisis than (costly) technical innovations, the development of nuclear power, capital intensive systems (further integration into private markets), more affluent 'living standards' for the wealthy, and rising levels of consumption and GDP. The proposed 'solutions' (intensification of agriculture, urbanisation, consumption, settlement, etc.) will require vast quantities of energy that only nuclear power can provide. This is why eco-modernisation is very often associated with a strong pro-nuclear position. Like it is the case for most of the neo-classical economists, the claims they support are acts of faith. Against their unreflexive rhetoric of 'Toujours Plus', our contention is that the 'tech-fix' and decoupling strategy they propose is unsubstantiated. Current levels of production and consumption can only be achieved because natural resources are being depleted much faster than they can regenerate. This means mortgaging the capacities of development

[197] For a deepening of this issue, see for instance Gliessman (2016)'s article on agroecology.

of future generations and stealing the surplus of resources we need from underdeveloped countries. The crucial issue lying at the core of mainstream environmental or post-environmental economics is the obsession with continual, never-ending growth. It means that production, consumption, incomes, and GDP should constantly and indefinitely increase. On the contrary, the LtG thesis contends that affluent growth-based-industrial-consumer society is biophysically unsustainable. Given the 'ecological overshoot[198], there is an urgent need to change the directions, institutions, core values and lifestyles of our Western societies. Ecomodernism, as Sections 5.2 and 5.3 have demonstrated, can only accelerate the deterioration of environmental and social conditions. Stopping the party of the Anthropocene (cf. Prelude) does not warrant any consideration. The policy choices made by ecomodernists are largely in favour of techno-managerial powers that will decide the fate of 'denizens' in undemocratic manners and within undemocratic institutions (what Swyngedouw 2013 calls 'post-politics'). Indeed, the ecomodernist vision dangerously involves sophisticated, expert-run, centralised institutions and large-scale scientific systems (cf. nuclear sector, geoengineering) which can escape democratic controls, threaten people's autonomy and increase global inequalities (in the name of the fallacious conventional capitalist 'trickle down' theory). The risk that capitalist governments use ecological emergency as a justification to restrict political freedoms without doing anything about inequalities is substantial: '[m]anaging epidemics, nuclear accidents, pollution peaks, and climate change could be invoked as reasons for restricting our liberties' (Kempf 2007 quoted by Latouche: 2009: 94). As Latouche states: '[w]e could easily move from the rampant totalitarianism of our plutocratic oligarchy, which still preserves a semblance of formal democracy, to a muscular eco-

[198] In 2017, *Earth Overshoot Day* fell on August 2, which means that at this date, humankind has exhausted the annual budget of biological resources. The total ecological impact of humanity has increased from 1.6 planets in 2016 to 1.7 planets in 2017, primarily because of atmospheric pollution by GHGs and the problem of climate change.

fascism or eco-totalitarianism' (ibid.). In another article (2012), Latouche shows that capitalist industries could easily get along with very few natural resources, climate imbalance, ecological insecurity, etc. It would lead to an explosion of inequalities, probably famines and wars that would hit the poorest, while the richer would protect themselves in appropriate structures. This is why Smaje considers ecomodernism as a new 'enclosure movement' (2015: n.p.).

Contrary to this technological and growth obsession, this thesis contends that a green alternative to capitalism needs a post-growth future. Indeed, the endless striving for 'more', 'bigger', and 'faster' has many costs. Not the least of them is the ecological loss of biodiversity, stable climate, and natural resources, but also the loss of social and human wealth, that is solidarity, conviviality, generosity, caring, respect or gratefulness. The next section shows to which extent the shift from over-consumption and over-production requires first what Latouche calls 'a certain decolonisation of the imaginary' (2009: 53). It presents an alternative to the dominant mainstream economic model that escapes the uni-dimensional way of development offered by neo-classical economists. The LtG theory covers, indeed, a vast spectrum of worldviews and concrete experiences that have slowly emerged during the last decades (Degrowth, Eco-villages, Transition-town movements, slow-movements, voluntary simplicity, permaculture, community gardening, recovery of the commons, etc.). The core idea of all these experiences is the acceptance that the levels of production, consumption, and resource use are not ecologically sustainable and that the situation calls for more cooperation, equality, sharing, fraternity and responsibility. A new post-capitalist economy has to be implemented, which grows in some domains and de-grows in others, and which challenges the liberal anthropological model (*homo oeconomicus* and *homo consumericus*) while redefining its goals in a humanistic and ethical sense.

5.4. A reconstructive agenda: for a new ethos and a new green political economy

> He who knows he has enough is rich.
> — Tao Te Ching (c. 260 B.C.)

The failure of decoupled growth or the fact that growth economies, even with increasing efficiencies, tend to consume more resources and energy, means that sustainability in wealthy nations cannot be only achieved by producing and consuming *more efficiently*, but also requires producing and consuming *less*. Indeed, since there are reasons to believe that higher GDP[199] create more unsustainable economies, the central problem of our Western societies is now to shift from growth to post-growth economies, that is from biophobic to alternative biophilic models of progress. As Barry puts it, '[a]ny plausibly "green" and radical conception of political economy must begin from an articulate "limits to growth" perspective' (2012: 138). Indeed, the core question for a 21st-century economics is no longer how nations get rich, but how do they 'manage without growth' (Victor, 2008), and how they shift to an economy which delivers a high quality of life with low environmental/resource/energy impacts (Barry, 2012). It means to shift away from capitalism insofar as growth constitutes a 'functional imperative, that is a system requirement [of the capitalist economy]' (ibid.). Post-growth or degrowth[200], that is *planned* reductions in consumption and production, is not *unplanned* recession or contraction of the economy. Indeed, the collapse of the economy within a capitalist growth-based economy would lead to a recession or contraction of the economy, that is job losses, poverty, bank-system crashing, socioeconomic insecurity, disinvestment,

[199] The level of economic achievement of nations is currently measured through the amount of goods and services produced and exchanged on a market (GDP). This monetary value does not say anything about the inequalities inherent in a society (fairness), about the well-being of the populations (life satisfaction) and about the environmental costs of the resulting growth (negative utilities).

[200] The terminological debate between 'post-growth' and 'degrowth' will not be settled here hoping that the explanations given in the thesis are sufficient to account for the green republican economy this project is calling for.

and so on. As Jackson points out, the natural dynamics of capitalism 'push it towards one of two states: expansion or collapse' (2009: 64). Today, the West might have entered a period of prolonged recession (structural crisis) due to ecological limits, the burden of debt, the exhaustion of investment possibilities in mature economies, and geo-economic shifts due to globalisation. In this context, degrowth is not only a moral, political or ideological option for individuals. It is first and foremost a fact[201].

Indeed, capitalist economies are already degrowing, and one of the reasons for that is the progressive disappearance of readily available ('cheap') natural resources, which entails an increase in the costs of production. But, as mentioned before, growth economies do not know how to degrow. They just collapse. The economic shrinking of economies within the existing structures of resource-intensive capitalist societies is not the degrowth-post-growth model defended in this thesis. This is why degrowth proponents have been repeating, time and again: 'their recession is not our degrowth'. 'Degrowth' is indeed an alternative solidarity-based, and post-capitalist economic framework that seeks to negotiate the reduction of consumption and production democratically. It is, therefore, a voluntary choice, a political proposal aiming at enhancing people's freedom and well-being while implementing the necessary post-carbon transition. Peter Victor uses the expression of moving beyond growth either by 'design' or 'disaster' (2008, title). The degrowth project advocated here follows through the first option. The goal of degrowth/post-growth politics is to comply with the material necessities (ecological overshoot), while ensuring global and national justice through more sharing, more redistribution of wealth[202], regulation of investments, and expansion in some sectors – or 'differentiated degrowth'. This is indeed important that the critique of growth is not seen as the critique of all forms of

[201] See Latouche (2012): 'Degrowth, whether you like it or not'. [Online] https://degrowth.org/2012/02/02/degrowth-whether-you-like-it-or-not/

[202] This includes substantial reparations for the poorest nations to assist both their development of low-carbon infrastructure and their adaptation to climate change. The Paris Agreement has planned the allowance of $100 billion to do so. Worth noticing, the IMF estimates that the global (direct and indirect) subsidy to the fossil fuel industry in 2015 amounts to $5.3 trillion (fifty three times more than what the Paris COP allocated to poor nations). See Anderson (2015).

growth but only 'the expansion of forms of activities which (after a threshold) undermine or compromise human flourishing' (Barry, 2012: 164). For instance, sectors such as renewable energy, education, public health, care for vulnerable people (children, elderly, sick or disabled people), public transportation, hospitals, organic farming, renewable energies, nature protection, preservation and restoration should be expanded at the expense of others, such as fossil fuel industries, fashion, luxury, military weapons, advertising, etc. As a report of the New Economics Foundation suggests, 'the purpose of the economy should be to enhance the well-being of the citizens of the country, in a way that is socially just, and environmentally sustainable' (2008: 1). Today, growth-based economies measure their wealth by conventional national accounting measurements such as GDP which tell nothing about the quality of life or general level of prosperity of a nation.

Moving beyond growth also means that the wealthy nations downscale their resource and energy demands to leave some room for the development of poor countries. The economic system is, indeed, based on the exploitation of the Global South by the Global North. As Gandhi famously said, we need 'to live simply so that others may simply live'[203]. Our degrowth/post-growth is not to be passively undergone (like a recession or a negative growth); it means inventing new societies and new ways of living; that is, to implement deep cultural and political transformations. Voluntary simplicity, as de Geus reminds us, requires a sense of 'moderation without impoverishment' (2013: 47). It leads not to poorer standards of living, 'but makes possible an attractive life that is well provided and cared for, while not extravagant or wasteful' (ibid.). Post-growth economies are not against consumption *per se* but against luxurious, and unsustainable consumptionist patterns. Consumerism (excessive consumption), rather than consumption alone is one of the foci for the green critique of growth-based economies 'since consumerism has

[203] On Gandhi's conception of simplicity, see Gandhi (1997).

become a central driver … for contemporary economic growth policies' (Barry, 2012:164). Consumerism differs from consumption (which is a natural fact insofar as 'life eats life') in that the former describes an addictive behaviour which seems to be freely endorsed, but that is in fact being ingrained through processes of routinisation (voluntary servitude) and propaganda. Consumerist – or hyper consumerist – patterns challenge, therefore a genuine conception of freedom as self-determination and self-government (see Section 6.2). They deprive people of their autonomy and agency. As Illich points out, '[i]n a consumer society there are inevitably two kinds of slaves: the prisoners of addiction and the prisoners of envy' (1973: 46). Moreover, by making consumption repetitive, meaningless, and disconnected, consumerism devalues that which is consumed: '[t]here is no sense of the fragility (despite the evident ephemerality) or any associated sense of preciousness attached to the mass produced goods and services consumed' (Barry: ibid.).

From the institutional point of view, downshifting will mean stabilising the global population, implementing an 'energy descent' (Hopkins, 2008) and moving away from the core institutions of capitalism, which involve excessive commodity production and consumerism, hegemony of private ownership, continuous growth, debt-based money system, and the imperative for capital accumulation. Those capitalist features should be replaced by institutions focusing on the '4Ss', namely the principle of sufficiency and security, solidarity and sharing (see Barry, 2012: Chaps. 5 & 6). The concept of 'economic security' is central to any new green economy. It introduces a way of arguing against high-consumption societies, and the inequalities and vulnerabilities created by neoliberal policies by raising questions of redistribution and quality of life. The goal of Economic security is to provide people with a sense of social stability which increases levels of life-satisfaction and flourishing, and fosters values such as tolerance and moderation. Indeed, '[t]he most important determinant of national happiness is not income level – there is a positive association, but rising income seems to have little effect as wealthy countries grow wealthier. Rather the key

factor is the extent of income security, measured in terms of income protection and a low degree of income inequality' (International Labour Organisation, 2004: 1).

At that stage, some questions arise such as the following: 'how to concretely implement the '4s' principles?' and 'what types of production and consumption should degrow or grow in the context of a 'differentiated economic growth"? These are broad and complex applied issues that exceed the scope of this thesis[204]. Victor (2008, 2012) gives a few examples of how low-growth models could be translated into concrete policies. According to him, the stabilisation of the population, the limitation of the throughput, anti-poverty programs, work time reduction, education for life, basic income, green investments, the economic valuation of low or hidden productivity economic activities that are socially valuable but currently unnoticed by standard GDP metrics (what Tim Jackson calls 'the Cinderella economy'[205]), etc., must all become urgently public policy objectives. Barry (2012) argues in favour of a 'mixed economy' that encompasses social activities (the 'social economy') and includes many innovative policy-making instruments such as 'strategies of localisation or the promotion of social enterprises' (p.158), a citizen or basic income, the valorisation of the 'shadow work', often imposed on women (p.187) and more generally the separation of work from employment (p.181), an idea already advocated by André Gorz (1980). Given the scale of change required for addressing unsustainability, we should not underestimate the difficulty of achieving such a task within the context of liberal consumer democracies. Similarly, we should not understate the cultural changes that are required to transform our economic models into sustainable ones. As Victor says, 'the dilemma for policy makers is that the scope

[204] For an account of concrete post-growth governmental policies, see for instance Alexander (2016), Fremaux (2011), Barry (2012),

[205] These high social value activities include caring, benevolent or unpaid work (housework and community settings). As Rosa Luxemburg points out, the 'historical process of the accumulation of capital depends in all its aspects upon the existence of noncapitalist social strata', Quoted in Arendt (1979: 148, note 45).

of public policy required for managing without growth is so great that no democratically elected government could implement the requisite policies without the broad-based consent of the electorate. Even talking about them could make a politician unelectable' (ibid: 193). However, as he further adds, it is up to us to change how we think about our economy, society and environment to eventually slow down, not by disaster but by design (ibid.:233). Worth recalling, an unplanned economic degrowth or shutdown of the economy would be dangerous. It could imply drastic unemployment, increase in poverty, and such a rise in state expenditures that it could eventually lead to the fiscal bankruptcy of nations. It could also bring about a drop in living standards and significant risk of social unrest and instability (riots/civil war).

The transition to a Cinderella, low carbon economy must not, like Maniates and Meyer (2010) suggest, involve a material sacrifice or regress, but must ideally mean improvements in quality of life (interpersonal, social relationships and individual flourishing). As Jennings says: '[t]he message of planetary boundaries is not the bad news of less liberty and more sharp elbows, but the promise of *a new, more humanly fulfilling kind of liberty and mutuality*' (2013b: n.p.; emphasis added). The move away from unsustainable consumerism and consumer freedom is also about gains and progress (see Section 6.2). Moreover, let us recall, with Wendy Brown (2015), that current neoliberal democracies already impose and require many sacrifices from their (neoliberal) citizens: '"[s]hared austerity" is used everywhere by politicians and managers imposing austerity measures' (p. 275: note 21). This purported 'shared sacrifice' with obscene differences in the way it is experienced (leaving aside outsized salaries, stakeholders' revenues, bonuses, golden parachutes, and other perks of the top) entails for the masses sudden job losses, cuts in pay, lower pension provision, increasing taxation, social dumping, curtailed state investment in public services, health system, public transportation, infrastructures, education, etc. Neoliberal regimes also involve 'effects of stagflation, currency deflation, credit crunches,

liquidity crises, foreclosure crises, and more' (ibid.: 211)[206]. But more than that, the neo-liberal view requires a 'sacrificial citizenship' which abdicates its rights to economic, social and ecological security. Loyal citizens must indeed surrender their key interests to economic reason, without any guarantee or promise in exchange[207]. Virtuous neoliberal citizens embrace as their own ends competitiveness, self-responsibility (for enhancing and securing their future), individualising pathways where individuals are responsible for their own failures or successes (that is a detachment from social narratives), and an economic growth delinked from the general welfare. Bad citizens, such as 'greedy' and 'conservative' public employees, 'lazy' welfare recipients or 'intransigent' trade unions which are 'stuck in the past' are among the most loathed and despised of a neoliberal rhetoric that positions itself on the side of optimism, progress and openness. As Brown (2015) says, 'individual *homo oeconomicae* may now be legitimately sacrificed to macroeconomic imperatives…instead of being secured or protected, the responsabilized citizen tolerates insecurity, deprivation, and extreme exposure to maintain the competitive positioning, growth, or credit rating of the nation as a firm' (p. 213).

The post-growth/degrowth framework offers exactly the contrary of this depoliticised and individualising economy and economised polity model. As will show the chapter 6 (especially Section 6.3) economic, social, and ecological security is a core concept of green republicanism. As Barry explains (2012:163 sq.), a long-standing green commitment is to re-embed economy in politics and to consider it as a tool (rather than an end) to promote well-being, and quality of life. Indeed, against the neoliberal fostering of ontological insecurity intended to decrease labour costs and make people more compliant and flexible, the new green economics intends to

[206] The sacrifices endured by the Greek people, following the Greek -government debt-crisis (2009) are a good illustration of those phenomena.

[207] This is a recent feature of neoliberalism which opposes the former 'trickle-down' theory elaborated in the 1980s according to which making wealthy people richer would benefit the society as a whole.

provide people with a high level of socio-economic security seen as a fundamental requisite of well-functioning democratic institutions (see Section 6.3). The shift away from economic growth imperatives and the affiliated inequalities, which are considered in the neoliberal ideology as necessary steps to 'motivate' people towards entrepreneurial activities and to generate profits for investments[208], will lead to *extensive* redistributive measures. As Barry says, if 'the option of baking a bigger pie is neither (ecologically) possible nor (socially) desirable, then poverty elimination can be solved only by more direct redistribution measures. And in so doing the link between poverty and inequality is explicitly revealed. That is, inequality causes poverty, not vice versa' (2012: 171). The issue of distributive justice is particularly brought to the fore by the ecological crisis. Indeed, in a more and more depleted world, material consumption and throughput will necessarily decrease, leaving thus open the question of wealth distribution and inequalities. Moreover, in the neoliberal model of consumerism (consumption for consumption), which creates high levels of ecological distress and socio-economic inequalities, material resources are used not to meet basic needs and increase human flourishing but to satisfy the race for social status (social comparison and distinction[209]). We are dealing here with a paradigmatic meaningless and unsustainable reality, not only harming for the planet, but also for individuals and the well-functioning of democracy. For Wilkinson and Pickett (2009), who stress the urgent need for policies to enhance individual and collective levels of security and well-being, the economic growth cannot any longer fuel economic and social progress: '[n]ot only have measures of well-being and happiness ceased to rise with economic growth but, as affluent societies have grown richer, there have been long-

[208] As Robinson and Kaldor say, 'impoverishment of the masses is necessary for the accumulation of a surplus over present consumption' (quoted in Barry, 2012 : 171).

[209] The way in which modern consumer societies manipulate people's expectations in order to make them consume (semiotic qualities of commodities) is admirably demonstrated by Baudrillard ([1970]1998). In a capitalist society, privileges and differences must be established in order to always incite people to desire what others have. On the contrary, in an ecological society, 'the only things worthy of each are those which are good for all' (Gorz, 1980: 8) like the services freely produced and distributed by nature.

term rises in rates of anxiety, depression, and numerous other social problems. The populations of rich countries have got to the end of a long historical journey' (pp. 5-6)

The post-growth/degrowth project offers the vision of a better, improved and more advanced society than impoverished, regressive and unequal high carbon high consumption growth-based societies. To do so, such a project relies as much on socio-economic than on technological innovations. All appropriate tools and technologies will be used and developed to counter the present unsustainable direction. A transition to slow-techs, based on efficient use, renewable energy, and industrial ecology would probably sharply reduce the human footprint on nature. It would allow to reduce resource inputs, that is, the need for material resource for the same unit of production and consumption (relative decoupling). The use of renewable resources such as wind, sun or geothermal energies will help maintain and renew the depleted stocks of resources. Industrial ecology will help eliminate waste through recycling, reusing, re-manufacturing and product life extension, against the current 'planned obsolescence'. Technological remedies are already all at hand or could be soon matured through new re-prioritisations of research and economic investments[210]. This would mean a significant change in institutional priorities and a renewed struggle against the vested interests that are desperate to preserve the status quo, inertia, and large-scale undemocratic and costly technologies such as nuclear power or geoengineering.

Nevertheless, if technologies are part of the solution, they are not the entire solution: they will not alone solve the crisis. As gains in technology have so far failed to alleviate environmental stress, '[p]recaution suggests that we should limit the increase in scale so that we do not have to count on technology alone bailing us' (Victor, 2008: 107). What is also required is that typical levels of consumption and

[210] For an analysis of various 'low-tech' options, see Alexander & Yacoumis (2015).

production in developed nations go down. This can be achieved partly by cultural change, and by what Alexander calls '*voluntary simplicity*'' (2014: 14; emphasis added). Castoriadis is maybe the most important democratic thinker who has theorised the importance of social imaginary/imagination in modern societies (1975, 1996). Latouche draws on him to contend that degrowth motto should be to 'decolonise the imaginary' that this to oppose the utilitarian, capitalistic and economicist mind-set of contemporary instituted societies. Indeed, to switch Western societies from their current unsustainable tracks to an ecological route means finding new-compelling belief-systems. As Alan Durning (1992) puts it: '[w]hen most people see a large automobile and think first of the air pollution it causes rather than the social status it conveys, environmental ethics will have arrived. Likewise, when most people see excess packaging, throwaway products, or a new shopping mall and grow angry because they consider them to be crimes against their grandchildren, consumerism will be on the retreat' (p. 138).

Inasmuch as we are facing not only an ecological crisis but also a crisis of Western capitalist culture that finds its roots in ourselves[211], what is required is nothing less than a major social, ethical and cultural turn to counter the well-engrained anthropological assumptions about the self-interested and greedy nature of individuals (*homo oeconomicus*), as well as the progressive elevation of competition, consumption and individualism as core values of our societies. The least we can say is that those institutions have led to an unprecedented convergence of crises: anthropological, moral, social, economic, democratic and environmental crises that culminate today in the systemic ecological predicament. The persistent obsession with growth and disdain for planetary limits, the further commodification of nature, and

[211] As Schumacher said, '[i]t is no longer possible to believe that any political or economic reform, or scientific advance, or technological progress could solve the life and death problems of industrial society. They lie too deep, in the heart and soul of every one of us. It is there that the main work or reform has to be done' (1979: 36). Most probably, the change will come from individual and structural changes at the same time.

the reduction of human beings to 'profit maximisers' under the rule of instrumental rationality, have all together entailed the rapid exhaustion of natural resources, the extinction of species, as well as the advent of immoral and unsustainable consumerist lifestyles and values which encompass hyper-individualism, selfishness and superficiality, as well as the rejection of more desirable standards of personal behaviour such as generosity, solidarity, mutual respect or self-restraint. More fundamentally, as Havel (1978) analyses, the whole system rests on the systemic and necessary demoralisation of citizens, their uprootedness, the dissolution of their identity into a homogenous consumer civilisation, and the erosion or downplaying of any 'sense of responsibility for anything higher than his or her own personal survival' (p.62).

The solution, today, can only come from new models of rationality and action that will, first of all, take account of the limits of the carrying capacity of the planet and second, bring about a new social ethos. This implies a new economy that understands itself as a sub-system of a larger and finite system, the biosphere, and that aims at staying within the planetary boundaries, but also an economy, which respects the fundamentals of a progressive society. These two essential interlocked data of a progressive economy that respects the needs of humanity and the ecological boundaries are well exemplified by the Doughnut economics model invented by Raworth (2017a). 'The 21st-century definition of human progress' as she says, is 'about creating a thriving balance between those two' (2017b: n.p.).

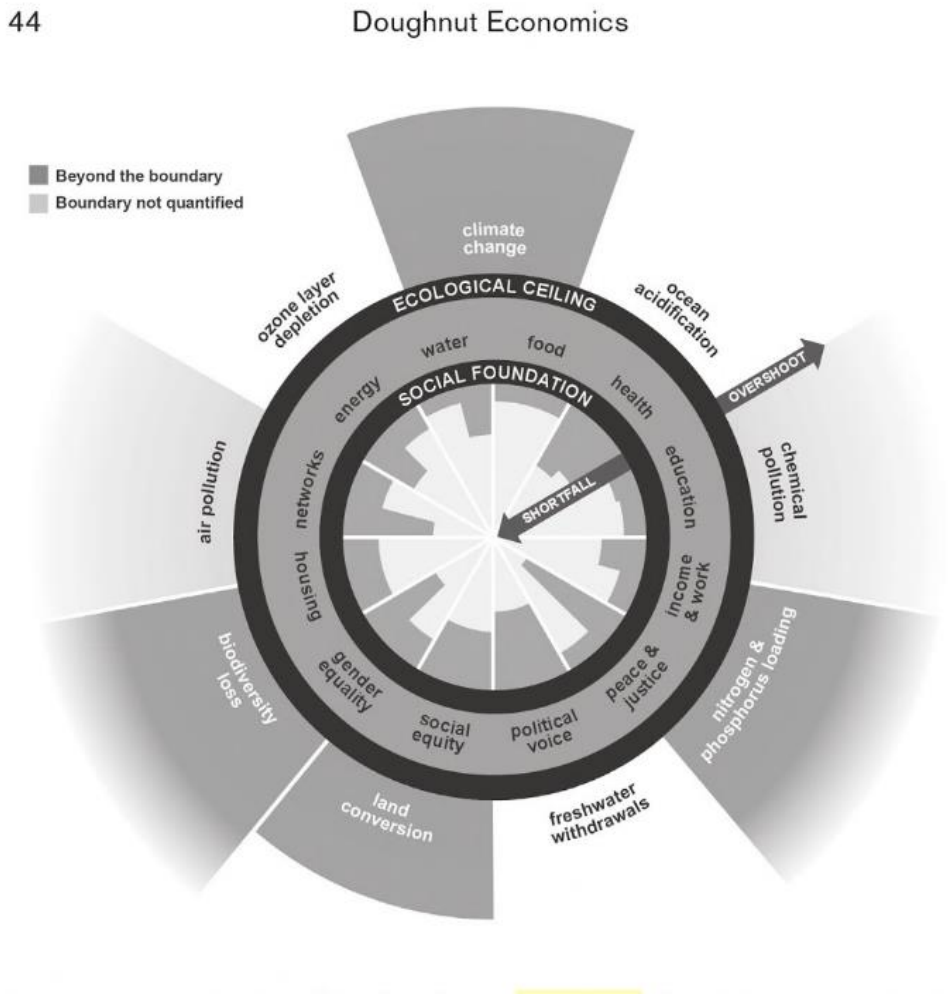

Figure 5.2: Doughnut economics model (Raworth 2017a: 44)

This paradigm shift requires, in Western countries, disaggregating 'growth' away from undifferentiated growth of the macro economy. It means asking which sectors of the economy do we wish to grow and which to degrow? The new green economics paradigm represents the most powerful opponent to neo-classical economics. The renewed economic model this thesis advocates would ontologically be anchored in an organic, holistic worldview which understands living beings as non-linearly interconnected entities (Capra, 1983) rather than in a mechanistic and reductionist worldview (see Chapter 4). Indeed, recognising the limits to growth does

not warrant that the more than human world would be decently and ethically treated. Degrowth is not a blueprint for the sustainable society respectful of other forms of life advocated in this thesis. Anthropocentric degrowth could still lead to the destruction and exploitation of non-human life-forms[212]. As Curry says, 'anti-capitalism is not in itself ecocentric' (2011: 239). Differentiated degrowth is a necessary but not sufficient condition to lead societies toward ecological sustainability. The highest priority of ecological economics is to promote a significant slowdown (or degrowth) of production and consumption, a decommodification of the world and a new ethics of finitude, and connectedness that relates humans to other humans as well as to nonhumans. This is why this new green economy should be associated with the post-anthropocentric vision contended in Chapter 4. Epistemologically, it should be based on a high transdisciplinarity principle rather than on mono-disciplinary unidirectional economic science. Barry, for instance, insists on the need to develop and promote a greater pluralism within economic thinking (2012: 125) as well as more interdisciplinary research: 'it is through interdisciplinary research that the innovations and breakthroughs required will come' (p.16). A new green economics would be anthropologically grounded in a vision of humans regarded as earthly embodied, vulnerable, and embedded in socio-ecological communities rather than abstract uncaring, individualistic and selfish individuals locked up into a system of 'fouling [their] own nest' (De Geus, 2013: 31).

The modern capitalist dysfunctional paradigm has exacerbated human's separation from the rest of nature, dismissing our membership into the ecological community of life. This ontology of separation or 'ontological dualism' is especially well exemplified by the way orthodox economics treats nature exclusively as

[212] We find for instance a strong anthropocentrism in the French degrowth movement that goes around the journal 'La décroissance', directed by Vincent Cheynet. We can read in their general statements: 'La décroissance is… anthropocentric: it places humans at the centre stage and grants an important part to nature that remains, however, second. La décroissance is thus opposed to deep ecology' (my translation) [Online] http://www.decroissance.org/?chemin=faq

instrumental 'resource', that is, as a passive input for production and consumption whose value is measured primarily by markets. Orthodox economics sees itself as a 'science' separated from and beyond the reach of other human activities (ethics, politics), and split from the dynamics of social and ecological interdependence. It regards itself as a neutral, scientific and objective discipline that can describe the reality and anticipate trends neutrally while it is simply one 'regime of truth' among others which has become hegemonic and now rejects any other alternative. As Barry notes, 'this lends economics the illusion of being able to definitively establish the "truth", mostly through its use of quantitative and numeric methods' (2012: 121). However, the algorithmic 'truth' of orthodox economics is developed without taking into account the natural world and the real societies in which people live as well as the complex interdependencies and relationships humans have with their environment. As Jennings puts it, '[b]iophysical systems (…) are mistakenly seen as things we live off of, not as places we live in' (2015: 273). The challenge of our time is, therefore, to reconfigure our economic and social culture in ways that help us understand that humans (as well as non-humans) are part of a vaster life-system on which they depend to survive and thrive. Orthodox economics and policies based on neoliberal biophobic models have transformed sensual experiences, beliefs and ways to experience the world in an unsustainable ecological and unsocial fashion. They have altered the conditions of possibility of empathy, identification with others (and with 'the Other' – the non-human world), responsibility and also flourishing.

Indeed, many studies – for instance Victor (2008), Jackson (2009) Lane (2000) – show that continuous growth, after a certain threshold, proves to be an ineffective tool, in the rich countries, for eliminating unemployment, reducing poverty, and making people happier. Beyond a certain point, increases in GDP have little discernible impact on levels of health and flourishing. Consumerism fosters addictive behaviours ('the rage to consume'); it undermines the general ethic of societies (replacing civic virtues by a consumer ethic); it fetishes money, encourages vicious comparisons through the race for social status leading to insatiable striving and high

levels of frustration (what Illich 1978 calls the 'modernisation of poverty'); it spurs people to retrieve in the world of material goods instead of relationships; it fosters competition instead of cooperation. Last but not least, what Lane calls 'the hidden agenda in the consumer culture' (2000: 179) implies longer hours of work, stress and more attention to earning money, including overtime or second paid jobs.

If the supremacy of growth economics has failed to bring the expected well-being in rich countries, it is almost needless to say that it has also compromised, in a fierce way, the possibilities of progress in poorer nations and has led to significant inequalities between the developed and under-developed world. From the point of view of international justice, green economics means that 'the rich countries can and should manage without economic growth so that people living in poorer countries can enjoy the benefits of economic growth where it really makes a difference to their well-being' (Victor, 2009: vi). The pursuit of growth is today the paramount goal of government policies (as well as a social demand) and is often presented as a necessity or even a 'panacea', that is a remedy for all difficulties. However, Victor shows that the cornucopian economy does not only leaves unsolved economic problems such as poverty, inequality, levels of debt or unemployment, but, in addition, increases the levels of frustration and unhappiness among the masses but also wealthy people. Especially, in the context of a 'conspicuous consumption' (ibid: 131), what counts is not to have but to have *more*, to be *better off* than others, that is to focus on the acquisition of relative positional goods, or social wants as opposed to fundamental needs.

Reviewing the empirical literature on the relation between economic growth and well-being, Victor makes a strong case for the fact that happiness depends on many other factors beyond income, especially 'measures of social capital' like general trust, community solidarity, the quality of social exchanges, etc. (ibid.: 150). The macroeconomics computerised model he uses for the Canadian economy (LowGrow) shows that the scenario 'low then no growth' with stability by 2030

results in full employment, more leisure time, virtual poverty elimination and important reductions in GHGs and debt level. Although the model chosen by Victor in this book remains insufficient for the preservation of our planet insofar as it would still allow the consumption of 1.5 planets against currently 3 to 6 for Western countries[213], it has the merit to show the economic feasibility of a low-growth scenario. In a later publication (2012) he shows that 'the degrowth scenario' might also reduce unemployment, state expenditure, and lead to a substantial increase in leisure time when implemented over an extended period of time. Enforcing degrowth in energy and resource intensive sectors is necessary if we seriously aim to combat climate change and general ecological impoverishment. This will not be achievable while maintaining the high level of consumption of our capitalist pattern[214]. Our contention is, indeed, that growth-based capitalist economies are incompatible with degrowth, that is with an economic system with no profit rate, no labour force placed in a competitive situation, and with high levels of public and non-profitable services. Whether capitalism is defined as a social economic system where private property and market transactions dominate, as an accumulation ideology where the continuous search for profit is paramount (Marxist approach), or as a system based on 'creative destruction' (Schumpeter, 1943), it is incompatible with the degrowth advocacy for zero interest rates, for the socialisation of common goods and resources, for work-sharing and a significant drop in the consumption of material commodities[215].

One way to make degrowth more attractive to populations and policy makers is to demonstrate that the consumption of commodities and the increase in national incomes do not provide people, beyond a certain threshold, with flourishing and well-being while a new version of prosperity based on less material abundance and

[213] As Curry points out, Americans (or 5 per cent of the world's population) consume nearly 40 per cent of the Earth's natural resources (2011: 21).

[214] Unfortunately, Victor and Jackson fail to address the issue of the compatibility of capitalism with sustainability (that is the question: 'is capitalism realistically compatible with an economy that respects the limits of the biosphere?').

[215] For an analysis of the economics of degrowth see Kallis et al. (2012).

consumption could offer a renewed vision of social progress. Drawing on the 'life satisfaction paradox', Jackson shows that above a certain level (threshold), material affluence leads to a reversal in the well-being curb. His observations appeal for a new type of prosperity and a less materialistic style of life which could be summarised in Kate Soper's words as an 'alternative hedonism' (p.148). Capitalism builds its strategy on permanent psychological discomfort (frustration, stress, and pressure), since it requires for its success to enhance continually the desire to consume and to produce more. These particular features make the growth-based system ultimately pathological and detrimental for individuals, and society as a whole (p.102). This reality needs to be more and more scientifically disclosed to public opinion. The democratic support for degrowth (as for ecocentrism) and downshifting initiatives can only arise from the development of an ecological culture supported by a green virtue ethics (GVE) which, as Curry analyses, already exists in the form of an ecofeminist ethics of care, and Indigenous cultures (Ics) (2011: 49). We could add to these two forms the movements which go 'in the right direction' (ibid.: 244), that is grassroots or bottom up movements such as the network of permaculture or food sovereignty, the Transition Town Movement, eco-villages, Climate justice movement, etc. (See Appendix C). These are pioneers of change that aim at shaping resilient futures and re-empowering communities[216]. Differentiated degrowth should not be considered as a sacrifice done in the face of ecological crisis but rather as an opportunity to dedicate more time to one's quality of time (which means more time devoted to family, friends, social, personal or political activities), to cultivate new public values such as the defence of the social and ecological common good or developing practices of caring, sharing and nurturing. Green ecological virtue, as Wenswen shows, is 'directed not simply at human happiness but at the good of the entire Earth community' (2000: 161). The

[216] For an analysis of the creative and transformative potential of those movements, see Barry (2012 : chapter 3) and Curry (2011: 244 sq.).

concept of 'voluntary simplicity' developed by degrowth proponents (especially Samuel Alexander, 2015) [217] means a way of life where people intentionally decrease their ecological footprint (by consuming and wasting less) while directing their life towards less materialistic and more relational sources of satisfaction and meaning. 'In other words',

> voluntary simplicity involves embracing a minimally 'sufficient' material standard of living, in exchange of more time and freedom to pursue other life goals such as community or social engagements, more time with family, artistic or intellectual projects, home based production, more fulfilling employment, political participation, spiritual exploration, relaxation, pleasure-seeking, and so on (Alexander, 2015: 133).

All these activities mostly do not rely on money exchange. The general goal is to restructure societies around low-energy, highly localised, steady state economies. The popular support to these alternatives may arise from the growing awareness of human dependency on ecosystems brought about by ecological disasters and the destruction of nature, as well as from the failure of capitalistic societies to provide people with meaningful lives. Talking of differentiated degrowth in terms of well-being, cultural and spiritual values and meaningful practices makes it more attractive than pure macroeconomic data. 'For an economics and politics of degrowth to emerge', adds Alexander, 'it would seem that people at the cultural level must be prepared to give up or resist high-consumption "affluent" lifestyles and instead embrace "simpler" lifestyles of reduced or restrained consumption' (ibid: 135). In a time of ecological overshoot, such orientations towards more simplicity must be supported by the educative, academic, and political communities. This is what Hamilton calls a 'politics of downshifting', that is 'the entrenchment within popular culture, public and private institutions and, ultimately, government of a predisposition to promote the quality of social and individual life rather than surrendering to the

[217] Cf. The Simplicity Institute. [Online] http://simplicityinstitute.org/publications

demands of the market' (2003: 208). Along grassroots networks, social movements such as the 'anti-globalisation' protest and the *No Logo* activists have opened the path towards the formation of this new politics.

Instead of waiting for the 'collapse' (recession and ecological breakdown) that awaits us on the ecocidal path of 'business-as-usual' scenario, embracing a voluntary transition would provide people with a meaningful and sustainable roadmap. They could exchange high levels of consumption (and waste), social pressure, tight timelines, impoverished socio-relationships and environments, little time spent with relatives (while long time devoted to work) against other life goals, such as family, intellectual, spiritual or artistic projects, sustainable living, love, social engagements, and so on. Such a philosophy grants importance to personal and social progress that is to the qualitative richness of life rather than to the quantitative elements which display wealth or social identity and status. Against misconceptions, Alexander warns us: it is not a 'hippie ideology', a sinister glorification of poverty or austerity, or an anti-progress primitive technophobic movement (2011: n.p.). It is a way of living one's life in a more ecological, fair, humane and communitarian way. This thesis contends that Green Republicanism supports (or rather is) such a movement (Chapter 6).

Mostly criticised for being apolitical and escapist, the voluntary simplicity movement could find a socio-political embodiment in the post-growth economics of sufficiency (Alexander, 2012) and in the green Republican paradigm which advocates self-restraint, ecological prudence, valorisation of common goods and confronts the predominant carbon fuelled consumer capitalist culture. If the voluntary simplicity is only one philosophy among others which indicates how to downshift, it has the advantage to make plain the need to consume less, and imagine afresh a model of society that does not entail deprivation or sacrifice but rather genuine freedom and richness. This narrative of sustainability which can be found in the 'Transition Initiatives' offers, as Alexander says, 'a source of genuine hope that another world is

indeed possible. And hope… may just be the difference between *probability* and *possibility*' (2011: n.p.; original emphasis).

5.5. Conclusion

This chapter has addressed the pitfalls of the mainstream environmental economics, especially embodied in the ecomodernist movement whose only real originality is to offer an optimistic post-nature narrative which obliterates the concept of natural limits. As seen in Section 5.2, ecomodernism relies on a conception of strong substitutability and weak sustainability according to which the further commodification of the planet means that artificial capital will substitute more and more for natural capital. This assumption rests on a strong faith in future technological innovation and its capacity to implement a 'sufficient' state of sustainability for the human species (techno-optimism). Section 5.3 dealt with another fundamental feature of ecomodernist theory: that is the belief that economic growth can decouple enough from nature to remain a permanent and continuous feature of the economy. Simply put, decoupling is about having more economic activity with less environmental damage thanks to increases in efficiency. As shown in this section, resource efficiencies in Western countries grow slower than economic outputs, leading to a negative 'absolute decoupling'. This means that in spite of technological progress, better resource efficiency, renewable energies, and reductions in material throughput, the overall impacts of economic activity continue to increase. We are getting better at producing more cleanly, and more efficiency, but this progress in efficiency is outweighed by the increase in production. Insofar as this thesis project has, in its previous chapters, recognised the existence of 'ecological limits' (cf. 'planetary boundaries'), the failure of decoupled growth entails the necessity for affluent societies to de-grow. Section 5.4 focused on the model of a new green economy for a world of limits. It made a case for the downscaling in consumer lifestyles and production to enhance ecological conditions and to increase human

well-being. If large-scale scientific projects such as geoengineering should be abandoned for the benefit of low and soft technologies, this section has sought to overturn the idea that technology, alone, could resolve the issues. It is through the downscaling of societies, that is the decrease of consumption and production and the shift from capitalism to post-growth institutions, that the necessary change could take place. It is evident that the transition to sustainable lifestyles cannot be realised without a significant 'cultural' change, and a shift away from competitive, acquisitive, maximising individualism towards simplicity, community, sufficiency, responsible and active forms of democratic citizenship. In order to support their view, advocates of degrowth and post-growth theories have evidenced that simpler ways of living bring about more well-being and non-material life satisfactions (for instance, social connectedness, leisure resources, sharing, solidarity, reciprocity, human relations, conviviality, and life-purpose) than greater material wealth and GDP. As the downshifter mottos so aptly put it, 'less is more' or 'we can live more on less'. The virtues of self-restraint, moderation, sufficiency or sharing, just to name a few, found in the broad Transition and voluntary simplicity movements, have a particular resonance for the green civic Republicanism defended in this thesis. For Barry, grassroots movements and particularly the 'Transition Towns' movement, are a 'prefigurative green politics' (2012: 79)[218]. Indeed, this movement 'exemplif[ies] the cultivation of new "sustainability" subjectivities and characters' (ibid.: 107). The 'Transition approach' offers very needed new narratives and represents an alternative dynamic which could lead the civil society towards a more ecological, democratic and creative imaginary order and 'sustainable ethos'. Insofar as institutional changes can only take place thanks to the support of peoples, countercultural movements represent a significant support for the transition toward low-energy, carbon-constrained, and green democratic institutions. A renewed power given to the civil

[218] For a green Republican account of grassroots movements (permaculture, Transition Towns, etc.), see Barry (2012: chapter 3).

society will be an important piece of the green republican architecture (Section 6.3). Indeed, as Rancière (2010) and Balibar (2014) argue, democracy refers to the power of those unqualified to rule, the 'uncounted', 'crunched' and 'unappreciated'. For Rancière, democracy is an eruption of 'the part that has no part' (p. 70). For Balibar, in democracy, freedom and equality are 'imposed by the revolt of the excluded' (p. 207). The next chapters will analyse in more details the green Republican democratic institutions and the public philosophy on which they rely. In the context of a carbon constrained and climate change world, green Republicans wishes to achieve 'the key aim of politics in the 21st century', that is to provide 'high level of human flourishing with low energy and resource use' (Barry, 2012: 276). Contrary to liberal institutions which emphasise rights rather than duties (among which the very problematic 'right to consume'), as well as individualism and atomism, a Republican account of politics stresses the importance of solidarity and community-based life for a flourishing life (see Section 6.2), the significant part left to the state to support the maintenance of collective goods and the organisation of public life and to provide institutional basis for local transition movements (see Section 6.3). Given the economic, social, democratic and ecological predicament, the next chapters will build an argument for recasting liberal capitalist and consumer-based democracies in green civic Republicanism terms.

Chapter 6

A Post-Liberal Green Republican Democracy for the Anthropocene

> It's not because things are difficult that we dare not venture. It's because we dare not venture that they are difficult.
> — Seneca (c. 4 BC – AD 65)

> [W]e're going to need more than scientific reports and military policy. We're going to need new ideas. We're going to need new myths and new stories, a new conceptual understanding of reality, and a new relationship to the deep polyglot traditions of human culture that carbon-based capitalism has vitiated through commodification and assimilation. Over and against capitalism, we will need a new way of thinking our collective existence…
> — Scranton (2015: 24)

6.1. Introduction

The previous chapters have outlined the necessity to implement vast cultural and institutional changes to address our planet's ecological predicament. Chapters 2 and 3 have shown that the post-nature narrative defended by ecomodernists and some techno-*most*modern thinkers must be overcome by a new metaphysics of 'limits'

and 'return of nature' in the Anthropocene. Chapter 4 has argued for the necessity to develop a post-anthropocentric ethics that puts together legal and moral elements involving the defence of the intrinsic value of nature as well as enlightened anthropocentric interests defining a good 'use' of nature (against its 'abuse'). The previous chapter has brought to the fore the failure of the concept of sustainability as implemented by the advocates of the market-techno-based ecological modernisation ('green capitalism'), as well as the danger of the notion of '(strong) substitutability' promoted by ecomodernists. It has made a case for a shift from growth-oriented societies to post-growth/degrowth institutions, from carbon-intensive consumerist communities to societies with a lower level of consumption, production, and waste.

This chapter argues that this most needed economic change necessitates an overcoming of the pitfalls of liberal democracies, understood as political systems based on high consumption levels and weak democratic commitments, on limited citizen capacities and significant market power, on consumer freedom rather than democratic autonomy. Green republicanism has many common points with ecological politics, the first of which being to recognise the limits of human power and the existence of natural limits that humankind, and especially the Global North, should not cross. It is also a form of political regime which refuses to build its normative system on subjective preferences and to reduce human communities to 'market societies'. Republicanism appears as a political tradition suitable to the degrowth/post-growth post-carbon ecological economy described in the previous chapter. Particularly, it is consistent with the promotion of 'voluntary simplicity' at the core of its system-value, 'sufficiency', and 'economic security' as macroeconomic objectives, as well as with the prioritising of liberty and autonomy over 'consumer freedom'. It is also consistent with the idea that markets must be confined to limited spheres to prevent their anthropological, social and ecological corrosive effects. Green republicanism differs from liberal capitalist regimes in that it does not aim at satisfying consumers' preferences or desires for more possessions and luxurious

goods but at supporting citizens' rights and duties which are compatible with a sustainable future. As Barry notes, the contrast between liberalism and republicanism is probably overstated since 'liberalism grew out of, and not just against, this older tradition' (2012: 216). However, the liberal tradition[219] today connected with market capitalism has evolved far away from its republican origins. By emphasising individualism, consumer rights, abstract economy (see Chapter 5), atomism and reductionism, liberalism has lost touch with the valuable republican insights about building resilient communities in the face of what exceeds human power (vulnerability, dependence, empirical and epistemological limits). Indeed, green republicanism like environmental politics acknowledges both the human dependence on natural forces outside of control (Chapter 3), the embeddedness of humankind in metabolic phenomena on which we depend to survive, and the limits of our comprehension of the world (Chapter 2). As Barry (2012) says, '[t]he civic republican tradition is attentive to the contingent, historical, and ecological conditions and limits within which flourishing human societies are possible and is therefore in a better position to integrate the notion of vulnerability and its related concepts within its theoretical remit' (p. 219). In this respect, republicanism is, *ceteris paribus*, a more promising political position than liberalism to deal with ecological concerns.

Republicanism is today returning to the scene of political theory through the work of Neo-Republicans. Particularly, Philipp Pettit (1997) has developed an approach of freedom as 'non-domination', which is also taken up by theorists such as Skinner (1990), Maynor (2003, 2008) or Lovett (2001, 2010). According to this theory, people are free as long as they do not depend upon the arbitrary will or influence of others (including the case of 'benevolent master') as it is for instance the

[219] Unfortunately, the classical form of liberalism has been overlooked to give way to a conception of liberalism which is merely only about markets and commercial interests and which conceives of humans as pure *homo oeconomicus* driven by instrumental rationality and self-interest. Classical liberal philosophers had rather more humanistic views of human fulfilment than the one achieved in consumer society (I owe this point to Piers Stephens).

case with the insidious ideology of consumerism imposed upon people through propaganda and social norms in liberal capitalist growth-based societies. Green republicanism addresses the notion of freedom promoted by market democracies, within which human liberty has degenerated into a mere advocacy of consumer and property rights[220], and free enterprise[221]. *In neoliberalism, freedom is relocated from political to economic life* and is viewed as 'freedom from politics'. We need therefore, as this chapter suggests, to reclaim and reconstruct our understanding of liberty, which cannot mean the destructive behaviour shown in the use of extractive (and destructive) liberty. As Jennings puts it, reclaiming our understanding of freedom means 'taking it back from the destructive market ideology of neoliberalism that has colonized our political culture today' (2015: 295). A better understanding of freedom (as 'responsible freedom within limits'), would also minimise the need for social and political control.

Reconnecting with the tradition of republicanism, this thesis argues that people can be considered as free when they depend upon rational and reasonable laws, which aim at securing the common good and public interests. The first section of the chapter examines the differences between liberal and republican conceptions of freedom. It critiques the individualistic conception of freedom developed in liberalism and offers instead a relational, ecological and social account of liberty which sees individuals as embedded rather than 'unencumbered'. Republican theory, like communitarianism, is indeed very concerned with the ways individuals are shaped by their social relations and the broader social context of their lives. Individuals are regarded as 'relational beings' whose freedom, capacities and powers rely directly on the social ties that make their living possible. The neoliberal reason has today

[220] Property rights, namely, the rights to appropriate natural matter and energy, are very closely associated with the use of extractive power. Those rights constitute the basis for negative liberty in a capitalist market society: that is 'individual and corporate freedom from (state) interference in the use of extractive power' (Jennings, 2015: 295).

[221] The idea of 'free enterprise' has, however, become a fiction given the place taken by monopolies and giant trusts in capitalist institutions.

endangered these ties, and by doing so, is endangering the resilience of our societies. Green republicanism will, therefore, show that it is by aiming at defending public interests and legally enforceable fundamental rights that individuals will fight at best for their freedom and individual interests.

Section 6.3 will explore the democratic features of green republicanism and examine the type of institutional arrangements that are needed to preserve freedom in an ecologically constrained and finite world. Especially, green republicanism rests upon a conception of active political citizenship which allows public contestation over questions of values (agonistic understanding of democracy) and ensures the sense of a public life in the framework of a democratically constitutionally bounded state and citizenry. Since liberalism is incompatible with legal restrictions that seek to change people's preferences (Wissenburg, 1998), whether as Eckersley says, 'they be preferences to procreate, drive expensive cars or otherwise consume' (1999: 262), this liberal principle is incongruent with a strong conception of sustainability (see Section 5.2). Indeed, the matrix of liberalism is to overlook the distinction between basic needs and unnecessary wants, the praising of growth meaning that we do not have to manage and organise the economy in terms of prioritising human necessities over human wants and the superfluous. Indeed, growth means 'we can have it all and forever', which explains both the political attractiveness of a pro-growth position for politicians and the support for such neoliberal pro-growth policies from the general population. On the contrary, green republicanism will not have any difficulty to implement controls of macro-parameters such as demand, consumption, or population growth 'that are basic to any notion of ecological sustainability' (Eckersley, ibid.). The enacting of environmental regulations might need the transfer of some resources from private to public use. It might reduce some people's liberties (for instance restrictions linked to air regulation policies, consumerism, individual transportation, etc.) but the limitation of some privileges – in the same way as children can be restricted in eating sweets – will be outweighed by the increase in the overall

amount of liberties. People will, for instance, be provided with better and healthier environments, enforceable social, economic, and ecological rights which are, according to green republicanism much more valuable than the putative 'freedom' to behave (mostly consume) in unsustainable ways. The notion of 'limits', already analysed in Chapters 1 and 2 is a central theme of republican theory. Democracy, according to a Rousseauian view, is also considered as a self-restraining regime where mature citizens are governing themselves rationally under the 'principle of reality'[222] (that is according to what is possible in certain circumstances and not according to illusionary manufactured desires disconnected from their ecological roots). The republican conception of democracy is indeed also intrinsically correlated to the notion of *citizenship* and the domination of laws made by common consent for the general interests.

Section 6.4 will envision the part the state and the constitution have to play in the green republican institutional setting. Environmental but also educational, social and economic rights will be constitutionalised to make them more transparent (when they already exist but are unknown), undisputable and efficient. Henceforth, the goal of ecological, social, and economic security will be imposed on the state by the rule of law and policy-makers will not be able to ignore them any longer. The new constitutional rights will be complemented by other decisive rights, such as the rights to get informed, to participate in the making of environmental standards, to object to ecological decisions and bring actions to courts, even for the defence of the non-human world (cf. Chapter 4). The green state, controlled on the one hand by an active

[222] In Freudian psychology and psychoanalysis, the reality principle (German: *Realitätsprinzip*) 'designates the psyche's necessary awareness of information concerning reality and stands in contradistinction to the pleasure/unpleasure principle, which seeks the discharge or elimination of drive tension at all costs' (Source: international Dictionary of Psychoanalysis).

citizenship, a strong parliament, and innovations in direct democratic procedures, and on the other hand, by a binding overarching green constitution, will become an ecological state significantly committed to supporting sustainability. Green republicanism supports the centrality of the state as the primary locus of power of green institutions and the most efficient administrative level (with bio-regions) to fight the power of corporations and achieve sustainability. Against the weakening of the nation-states implemented by liberal democracies and globalisation, green republicanism intends to make the state the most important actor (complementing an active citizenry) of the ecological transition.

6.2. Relational Freedom, flourishing, and ecological citizenship

> No man is an island, entire of itself; every man is a piece of the Continent, a part of the main.
> — John Donne (Meditation XVII: Devotions upon Emergent Occasions)

> All local systems are but subsystems of the biosphere… No man, and no local ecosystem, is an island.
> — John Dryzek (1983: 10)

The main bone of contention between liberal democracy and green republicanism is probably the question of freedom in that a Republican autonomy-based notion of liberty opposes the consumer-freedom of market-oriented liberal democracies. Indeed, the environmental stress on limits and necessary constraints puts green Republicanism, on this issue, at odds with liberalism. As Dobson says: '[t]he issue of liberty is crucial here (…) there is no doubt that ecologism's stress on "limits" of all sorts amounts to the potential curtailment of certain taken-for-granted freedoms' (2007: 150). Liberalism, as Raz (1986) explains, is a doctrine initially revolving around the importance of personal liberty (p. 17). It seeks to liberate the individual from social, statist or moral traditional restraints. The liberal freedom has been especially theorised by Benjamin Constant (1819) and Isaiah Berlin (1958) as 'liberty of the moderns' and 'negative freedom'. For Constant, the liberty of the

moderns is the right of the individual to be free from unnecessary interferences and to enjoy private pleasures. Berlin's 'negative freedom' can be defined as the independence of individuals from others' interference or as the absence of impediment or restraint. By contrast, positive freedom (or 'liberty of the ancients') refers to the life under one's higher ideals, or in other words, under rational laws.

As often seen (MacCallum 1967, Taylor 1979, Pettit, 1997, Dagger 2006b), the definition of freedom as the absence of interference falls short and is never entirely persuasive. According to MacCallum, the 'freedom from' is always linked to the 'freedom to'. 'Freedom always involves a 'triadic' relationship (freedom of agent X to do Y, unhindered by Z)' (Hannis, 2015: 9). This is also Raz' argument: '[n]egative freedom, freedom from coercive interferences, is valuable inasmuch as it serves positive freedom and autonomy' (1986: 410). The agent wants to be freed from obstacles *in order to* achieve something substantial. This means that freedom always encompasses some ends to which an action is a simple means. We find a similar argument with the liberal T.H. Green: freedom 'rightly understood', is 'a positive power or capacity of doing or enjoying something worth doing or enjoying … in common with others' (quoted in Dagger, 2006b: 201). Taylor makes a forceful argument in favour of the restriction of some freedoms or the enforcement of others: 'some discrimination among motivations seems essential to our concept of freedom' (1979: 219). This discrimination implicitly appeals to the positive conception of freedom as 'the exercising of control over one's life' (Taylor, 1979: 177). The decision of a government, for instance, to ban fascist political parties can be seen as an assault on essential freedoms (freedom of speech, freedom of assembly and association) but also as a way to preserve the possibility of substantial democratic freedom. A law can deprive us of some options (e.g., the speed limits on highways) and infringe on our negative freedom but at the same time be supportive of other varieties of freedom (security, the right to be slow, right to enjoy a less polluted environment, a safer driving environment, etc.). As Pettit puts it, a law may be 'inimical to one variety of

freedom while being friendly to the other' (2003: 398). A *non-arbitrary law* that deprives us of some options is very different from illegitimate interference.

A government does not compromise liberty by endorsing a conception of the good life when this choice is the result of a democratic consensus (and not the expression of oligarchic or minority interests). It would compromise freedom if the decisions about the good life were made through undemocratic institutions or procedures, which is the case in neoliberalism. Indeed, expanding on the theme of 'governmentality' invented by Foucault, Dardot and Laval (2014) show that in spite of a wide range of consumer choices offered to the 'neo-liberal man', individuals have not emerged 'from the 'iron cage' of the capitalist economy to which Weber referred[223]. On the contrary, it is necessary to note that with such an ideology, everyone is enjoined to construct their own individual little 'iron cage'' (Dardot and Laval, 2014: 256).

Contrary to that position, the new political approach proposed here deals not only with environmentalism (that is environmental or species preservation) but also with securing basic human rights to education, economic security, political-democratic rights, and so on (cf. the inside crust of the Doughnut model: Figure 5.2) to secure autonomy. For green republicanism, the problem posed by liberty, in its positive or negative conception (insofar as the absence of interference is always a *normative choice* concerning '*which interferences'* should be avoided or not), relates mostly to the institutional issue and questions: 'what kind of institutions can provide a fair consensus and expression of citizens?' 'What kind of institutions can lower socio-economic inequalities, eradicate environmental injustices and ensure that the demands of the economy do no exceed the regenerative capacities of the planet?' As

[223] For Weber, capitalism has become an unprecedented system of domination which has lost its status of a means to an end to become an autonomous force of history that governs, dominates, and fashions human beings and societies in every way, placing, therefore, people in an 'iron age'. See Weber (1992 : 181-182)

far as no society can avoid some choices about which norms and attitudes are preferable, the issue is to excavate the institutions which respect at best the choice of their citizens, but also the long-term well-being and sustainability of societies. We witness today a growing public demand for more economic and social protection as well as for active ecological measures in the face of numerous environmental crises[224]. However, market liberalism, in line with its principle of 'state neutrality' and fixation on negative freedom, promotes deregulation, delocalisation, a worldwide competition among workers, increased values for shareholders, enrichment of capital holders, short-term profits over long-term sustainability and private over common interests. Does this not constitute the pursuit of a (non neutral) *substantial goal* (and a 'good life' for the few who benefit from neoliberal governing rationality)? Indeed, the neoliberal economy is a planned economy: it organises the deregulation process, the growing dependence of nations-states on markets, the regressive tax-systems which give the richest the possibility to be stowaways of the system, the political protection of fiscal heavens or lobbies' interests, the delocalisation of industries, the destruction of public services etc. All that is being planned and organised. Therefore, as we are already in a planned economy, the question raised by green republicans is how to make this planned economy democratic, fair, and sustainable.

Negative freedom, translated into the language of liberal market-based democracies, is today mainly associated with the 'right' to overconsume the planet, that is with an excessive consumer choice which is eroding political freedom as well as undermining ecological sustainability. The compulsion for new 'stuff', encouraged by aggressive marketing and governmental patriotic pleas to support growth, keeps people buying more and more goods. The result, as says Jackson, 'is a society "locked in" to consumption growth by forces outside the control of individuals… we are like children in the sweet shop, knowing that sugar is bad for us but unable to resist the

[224] See for instance the growing popularity of radical left parties in Europe and elsewhere (such as the ones represented by Jeremy Corbyn in the U.K., Jean-Luc Mélenchon in France or Gabriel Nadeau Dubois in Québec - 'Québec Solidaire').

temptation' (Jackson, 2009: 161). The lure of consumption is created by perverse institutional incentives which undermine the long-term sustainability and 'the potential for a shared prosperity' (ibid.: 160). Instead of counterbalancing the market orientations towards excessive consumption by appeals to self-restraint, liberal governments encourage and spur them. By doing so, they have lost sight of the fact that public institutions must embody behavioural norms and mechanisms of self-control and moderation, 'and act as commitment devices, helping individuals to find an equilibrium between the present and the future, giving them clues about "when to stop"'. Like parents at the private level, governments have the power to compel and are positioned to enforce social commitment' (Offer, 2006: 160). Liberal institutions, following Mandeville's 'Fable of the bees' (1705), have chosen 'to go private' instead of 'going public' in order to produce an improved (if unevenly distributed) public good. By doing so, they are trading away our long-term interests for the sake of short-term aggregated individual preferences and corporate claims. Moreover, the rage of consumption and the greed (*pleonexia*) associated with it, has involved the shrinking of democratic life and citizen activity. Because people devote more and more time to their work to satisfy endless manufactured desires, they do not any longer have time to participate in the democratic life of the *Polis*, and to check the democratic accountability of their governments. As Barry says, '[t]he green critique of economic growth, materialism, and consumerism…has to do with its conception of liberty as self-determination' (1999: 175), that is with its conception of liberty as autonomy, which is a republican conception.

What neoliberalism offers is not a 'shared prosperity', but a 'shared sacrifice' (see Brown, 2015: 210 sq. and Section 5.4). Citizenship, under neoliberal regimes, is reduced to the economic participation and membership of a nation reduced to the status of a commercial firm or an 'entrepreneurial self' (Foucault). The state itself has become a tool in the hands of market rationality: its legitimacy rests in facilitating, rescuing and steering the economic activity, and its efficiency is measured as any firm

would be (Brown 2015: 40). But above all, the political and electoral legitimacy of the state lies in its achievement of 'economic growth'. The demoralised and de-democratised 'neoliberal citizen' must accept that their situation no longer provides them with protections against unemployment, insecurity, poorly paid jobs, housing market collapses, credit crunches, etc. This neoliberal citizen, as Brown says, 'also accepts neoliberalism's intensification of inequalities as basic to capitalism's health – comprising the subpoverty wages of the many and the bloated compensation of bankers, CEOs, and even managers of public institutions and comprising as well reduced access of the poor and middle class to formerly public goods, now privatized' (2015: 219). The neoliberal citizen even takes full responsibility for their own condition and predicament, and is ready to sacrifice to the cause of economic growth. We find here the Foucauldian figure of the 'entrepreneurial self'[225]. Brown even sees in these characteristics some convergences with fascist ideologies: the valorisation of an abstract national economic project ('economic patriotism'[226]), the sacrifice for a greater good from which people should not expect personal benefit, the devaluation of politics, intellectuals, educated citizens, and all collective purposes except the economy and police/military security (2015: 219).

Capitalist liberal ideology has indeed replaced political and positive freedoms by delusive consumer options and the right to fight for one's life in the deregulated markets jungle. It has robbed, therefore, citizens not only of their autonomy but also of real access to social and political rights, opportunities and choices for flourishing lives. It has pervaded the political power of the state as well as the whole range of institutions which affect people's consciousness and awareness (media, educational system, health system, etc.). The metamessage it delivers is that 'the commodity form is *natural* and *inescapable*' (Fjellman, 1992: 9). According to the capitalist rhetoric, our

[225] See Foucault (1991).

[226] Cf. the rise of some contemporary right wing populist movements – Trump in the USA and Brexit in the UK.

lives can only be lived well through the purchase of particular commodities. And in the process, they also have become commodities *per se*.

(Neo)liberalism functions as a false ideological-free cover which has transformed the Liberty of the Moderns, mostly designed to preserve some portion of human existence into a consumer conformity. 'Dutifully' consuming stuff and not questioning economic growth could even be regarded as a way of showing one's loyalty to the dominant capitalist consumer regime (Barry, 2012: 285). As Hamilton puts it: '[t]he dominant characteristic of modern consumer capitalism [is to be] a social system that cultivates behaviour prompted by momentary impulse, temporary emotions, and moral and intellectual weakness' (Hamilton, 2011: 30). This rampant infantilisation process shows how much liberalism has failed under the capitalist regime to turn people away from the risk of paternalism. On the contrary, the active creation and promotion of a cult of insatiability, urgency, and instant rather than delayed gratification has converted individuals into consumer slaves as well as 'infantilised' adults. Representative liberal democracies have little to say on this issue, probably because their major goal is not to develop participatory institutions or to provide citizens with a public education and real deliberative power that would make the democratic practice efficient. Contrary to that, the dominant systems mostly try to secure the right and the possibility to take part in economic growth, and for citizens as voters to periodically in elections choose parties which produce economic growth.

Barry describes this phenomenon as 'the reduction of political liberty to a consumer "freedom of choice"' or, in other words, the 'abdication of responsibility in the name of consumer choice' (2012: 288). The type of freedom enhanced by our consumer societies is not the freedom to participate in the making of public decisions. Parliamentary democracies rather develop the delegation of power through representative institutions, and, therefore, the retreat into the sphere of private pleasures and interests, the decisions being left to experts or professional politics. It is not even this 'inner freedom' that Hayek promotes as a metaphysical liberty, and

which 'refers to the extent to which a person is guided in his actions by his own considered will, by his reason or lasting conviction rather than by momentary impulse or circumstance' (quoted by Hamilton, 2011: 30). The type of liberty which is currently defended, consists in the right to benefit from economic growth or, in other words, 'to pursue greater wealth and consume at ever higher level because [people] do not know how better to answer the question 'How should we live?'' (Hamilton, 2011: 6). Commenting on Amartya Sen's book, *Development as Freedom* (2000), Schwartz (2004) states that '[f]reedom is essential to self-respect, public participation, mobility, and nourishment, but not all choice enhances freedom. In particular, an increased choice among goods and services may contribute little or nothing to the kind of freedom that counts' (p. 4). This is what Sen suggests when he invites people to ask the good questions about liberties: 'does it nourish or deprive us?' 'Does it enhance self-respect or diminish it?' 'Does it enable us to participate in our communities or prevent us from doing so?' (Schwartz, ibid.)

Neoclassical or orthodox economists think of liberty in terms of 'options': the more choices available to someone, the freer this person is. However, if an adequate range of valuable options is no doubt an essential feature of liberty, it is not enough to cover the entire concept. Following on this point Philip Pettit's distinction between 'agency-freedom' (or autonomy) and 'option freedom' (2003), this chapter's contention is that having the choice among '20 barely discernible beers' does not mean to be more of a free agent. It does not mean to be a more autonomous, more self-governing person or, in other words, having more agency-freedom. 'What counts', as Dagger (2006b) says, 'is the value of the options, not merely the number' (p. 211). The options offered by consumer culture give short-term benefits to individuals at the cost of irreversible damages caused to what sustains freedom and life in general, that is the earth or our environmental *sustainer* and *provider* of life. What is, indeed, the point of having the choice between a multitude of fast and powerful cars if the cost is to see our lives and the ones of our descendants threatened by pollution and by the consequences of climate change (hurricanes, tropical storms,

droughts, heat waves and rises in sea levels)? The multiplication of options does not necessarily enhance autonomy, 'understood as the ability to lead a self-governed life' (Dagger, 2006b:212). For Pettit (2003), nobody should desire to extend his/her option-freedom if it means sacrificing his/her agency – that is, the ability to choose the life someone wants to live beyond arbitrary powers. It is indeed worth noticing that the two forms of freedom, 'agency-freedom' and 'option-freedom', are often linked socially but that this bound is not logically necessary. A capitalist society offering many consumer choices could be ruled by a tyrannical regime (the case of China is, in this matter, exemplary). As Pettit notes, 'it is possible for someone to enjoy agency-freedom and to have hardly any option-freedom; it is possible for someone to experience a high degree of option-freedom and not to have agency-freedom; and it is possible for someone to be fulfilled or deprived in both dimensions at once' (2003: 395). Holland (1999) and Norton (1999) have, for instance, shown that the expansion of the option-freedom of people in consumer societies (that is 'excessive consumer choices') threatens the sustainability of the environment and thus the options available for future generations as well as, perhaps, their agency-freedom (or indeed their capacity for survival).

Green republicanism could, as one possible option, propose a democratically agreed 'choice-editing'[227] process to control the impacts of production and consumption, in the name of liberty. The green republican state in this way would not only work for the transformation of the value system of consumers through educational and cultural changes in direction of more material sobriety and post-anthropocentric perspectives (Chapter 4), but would also develop strong legal

[227] 'Choice editing' refers to the process of controlling or limiting the choices available to consumers because of the environmental or other socially objectionable qualities of some products. It can be achieved by removing some commodities from the market or imposing punitive taxation which would make them unattractive. For the link between sustainability and choice editing, see for instance Maniates (2010).

instruments aiming at banning unsustainable products or substances, through strong ecological standards (on durability, reusability and repairability, for instance). It would also aim at regulating advertising and markets by putting legal constraints on investors and companies in order to make them produce fewer but better products and services. The reluctance of liberal-capitalist states and institutions of global political and economic governance to intervene in the life of private entrepreneurial agents such as multinational corporations, even when their activities cause social and/or ecological harms, must be replaced by international or nation-state interventionism and regulation. The green republican state thus considers sustainability (protection/preservation/restoration of the planet) as a fundamental condition of the common good, a structural element, or meta 'primary good' of the basic structure of the social order it has been democratically mandated to protect and preserve. This implies substantive accounts of what the good must consist of, the first goal being to encourage citizens to live sustainably. Some untenable features of our post/hyper-modernity will not pass the 'Occam's razor' of green constitutionalism, such as, for instance, the planned obsolescence of goods, the vast and unnecessary range of consumer choices available for one product, demographic growth incentives, growth-based economic politics, the predominance of individual means of transportation against public transports, the choice of nuclear power or fossil-fuels as the primary sources of energy, etc. In the conflict between the freedom of the producer/consumer and ecosystems sustainability, the latter will always prevail. The state will democratically and legitimately interfere much more in society than it does now, but always with a democratic mandate, backed by constitutional provisions and protections, to guard against any temptation of 'eco-authoritarianism'. That is, greater state interference in the market does not, or at least, does not automatically, equate to a diminution of human liberty.

Not only does the neoliberal ideology represent a risk to the freedom and the resilience of environments but it is also unable to provide what it is supposed to bring, that is flourishing for the majority of human citizens. Indeed, the plethora of

consumer choices in capitalist societies does not only harm the environment; it also requires making people feel frustrated and unhappy, and always wanting more (see Section 5.4). In the growth-based liberal democratic ideology, the freedom to consume – which keeps the capitalist economic system going – constitutes an inalienable right and the basic expression of what the pursuit of flourishing is all about. Following that, liberal governments give incentives to lock their citizens into the consumption race and in unsustainable 'arts of living'. On the contrary, green republicanism promotes, as the first goal of politics, an idea of autonomy based on realising human flourishing. Green republicanism does not recognise that situations of 'voluntary servitude' (or benevolent domination, like in the case of consumerist capitalism) are likely to generate flourishing. Therefore, republican institutions will not feel uncomfortable with the idea of redressing the 'social logic of consumerism' (Jackson, 2009) and influencing people's values and aspirations in the opposite direction of possessive individualism, and thereby allowing a more genuinely pluralist sense of views of the 'good life' beyond consumerist versions. Against the one-dimensional and impoverished consumerist conception of the good life, or the 'goods life' (Doran, 2006) proposed by liberal capitalist societies, a post-growth, post-capitalistic ecological order, would offer, as Barry says, '*more, not less* variety in views of the good' (2012: 10).

Green republicanism can be described as 'inclusive' insofar as it considers all areas of social life and social interaction, including production and consumption, family life, child-care, education, spiritual life, interpersonal relationships, arts, modes of communication and so on, as being part of the *political* realm. Therefore, all these domains are potentially subject to democratically mandated and legitimated state interference and regulation. As Clark says, '[e]ach is an essential sphere in which we can develop our social being and communal individuality, and in which a larger communitarian reality can find much of its basis' (1997: 26). What eco-communitarianism and green republicanism share in common is, therefore, the idea

that the nature of individual agents and, as a result, the nature of freedom, are extensively affected by the way in which social institutions are arranged. Such a conception of the political requires that practices and institutions be human, life-affirming, creative, and emancipative. It is only by considering the communal and institutional construction of beings that politics can have a liberatory potential. Social structures (health, education, social rights, and existential protections against the risks of life) are indeed necessary for autonomy and human flourishing. Freedom also relates to the state of the material non-human environment: food and resources supply, quality of air and water, recreational and spiritual needs fulfilled by nature, etc. These basic ecological and social needs are well illustrated in Raworth's Doughnut economics (See Figure 5.2). Without access to these basic needs, the freedom defended by most liberals as 'non-interference' ends up being what Polanyi describes as 'the fullness of freedom for those whose income, leisure and security … and a mere pittance of liberty for the people, who may in vain attempt to make use of their democratic rights to gain shelter from the power of the owners of liberty' (2001[1944]: 257).

In conclusion, the republican conception of freedom is the opposite of the liberal understanding of free individuals as market participants, voters, tax-payers or private property owners – that is a liberty defined mainly in negative terms as freedom *from* state or public interference in the pursuit of individual desires. Such an individualistic conception downplays ideas of interconnectedness and interdependence that are the core of the Green republican doctrine. The green republican notion of freedom is, indeed, *relational*, the system of relations in which individuals are embedded and which allows them or not to flourish being a fundamental constituent of freedom. The republican green theory regards social and ecological communities as structural preconditions for the flourishing of individuals. This is why the human understanding of community must be extended 'to include ecological communities and non-human others'. By doing so, '[l]ooking after nature [would] become not simply a prudent thing to do but also an expression of

ecologically embedded selfhood' (Eckersley, 2004: 105). Green republicanism does not necessarily[228] (but only contingently) require ecocentrism as an ethical doctrine (cf. for instance Barry, 2012) but the contention of this thesis is that traditional civic and green republican concern for resilient societies implies the need to defend as effectively as possible the ecological community that supports life in general and human societies in particular. As Chapter 4 demonstrated, the regulative horizon of ecocentrism has been considered as the best fitted conception to achieve this task. Indeed, as MacIntyre shows (1999), humans are vulnerable beings who depend on others, on the social and biological communities they rely on for their very survival, let alone their flourishing. This dependence on particular others for protection and sustenance implies the necessity to protect the community ties and ecological environments which support our social and biological identities.

The communitarian tradition helps us demonstrate that human beings can only flourish within the context of a (political, social, and ecological) community. It is by taking into account the network of interrelationships in which we are implicated that Taylor proposes the restriction of some courses of action 'based on the distinction in the significance of different purposes' (1979: 219)[229]. Autonomy, let us recall, does not consist in the license to do all what is possible but in rational self-restraint and self-government, which means the awareness of social and ecological responsibilities. Autonomy and community are reconciled in the framework of an eco-communitarian conception of freedom. As Hamilton summarises, '[t]his is the antinomian quality of freedom: to be free, we must submit' (2011: 301). Not only do we have to submit to the social and political laws (that is, to the democratic social

[228] The word is to be take here in its logical sense: the notion of green republicanism does not contain ecocentrism as a core component of its definition but as a factual necessity.

[229] Although more focused on communities and interpersonal relationships, Taylor believes there is something wrong in our modern disconnection from nature, wishing, in echo with Rilke, that we reconnect with the understanding that 'the world is not simply an ensemble of objects for our use, but makes a further claim on us' (1989: 513).

contract of which we are members) but also to the laws of nature (which are not democratically decided). In any case, the concept of liberty does not boil down to individuals' personal choices. We must understand it in a holistic way: a person is free, not because she is free from the interference of others (negative liberty), not only because she is free from the arbitrary domination of others but because she can benefit from a collective fund of resources —social, economic, ecological, material, educational, cultural, etc. — that can provide individual flourishing and free her from the relations of subordination and control found everywhere in the liberal society and more particularly in the place of work where people are unable to develop any sense of participation in the decisions that shape their lives.

Freedom is an abstract concept when it remains at the level of formal procedural rights, i.e. when individuals are not concretely empowered and granted with the basic economic, ecological and social capabilities that allow them to operate within society (education, health, political voice, housing, energy, etc.). The provision of social autonomy and economic security (see Section 5.4) is a requisite for allowing people to participate in other essential domains of existence, such as political life and collective decision-making. If social and political institutions cannot secure such a broad and subjective concept as 'happiness' to its members, the green republic must, however, ensure that the basic social conditions, including recognition and respect, necessary for the flourishing of individuals, are fulfilled. In order to reduce the material bases of domination and foster the socioeconomic independence of every citizen, the republican state must undertake substantive and on-going redistributive measures (Pettit, 1997: 158-163)[230].

To overcome the paradox between individual liberty and institutionalised self-restraint, green republicanism offers the solution of a 'mixed constitution'. This possible answer leans towards the injection of more localisation and participatory democracy wherever it is possible (encouraging, by doing so, awareness and

[230] See also Section 6.4 on 'legitimate inequalities'.

responsibility among the citizens) while also defending a strong constraining constitutional framework within which political and legal institutions will have to evolve. Two institutional levels will indeed be used. The first one is democratic-oriented (see Section 6.3): it will promote the development of direct and participatory democratic procedures and make, by doing so, green republican institutions *legitimate*. The second level is republican-oriented (see Section 6.4): it will ensure the constitutional framing of political decisions and will make green institutions *secure* and *just*.

6.3. Republican democratic institutions and environmental justice

Since the 1980s and 1990s, republicanism has enjoyed a revival in contemporary political theory. Some of the themes of this tradition, such as political participation, civic virtue[231], freedom, equality, etc., appear particularly appealing for those seeking more in-depth foundations to democracy and political life than the ones given by liberal capitalistic consumer and market-based regimes. Crucially for us, this tradition and its principles also provide a possible basis for democratic responses to the global ecological crisis. Republican historical culture has given rise, in contemporary neo-republican theory, to two different trends: one inspired by Aristotle and civic humanism – the neo-Athenian version – which contends, with communitarians, the social nature of humans and argues for a conception of liberty understood as participation in the public and political life. This links this theory to a strong (i.e. activist) version of citizenship (democratic participation) which might appear difficult to realise in our contemporary 'consumer democracies'. Nevertheless, it does constitute a regulative horizon for a green republican democracy. It also

[231] The civic virtue is defined by Dagger as 'the disposition to further public over private good in action and deliberation' (2005: 178).

appeals to conceptions of a good society, that is to say, for comprehensive and normative views of politics which oppose the purported 'neutrality principle' of liberal-capitalist states and liberal political theory. In short, it opposes the dominant neoliberal ideology, that is the structure of thought and set of practices which are today accepted as 'normal' and which constitute 'the framework of ideas within which politics and the life of citizens are conducted' (Schwarzmantel, 2008: 176).

Green republicanism can be said 'weakly perfectionist' insofar as it asks people to commit to 'a socio-ecologically responsible life'. No matter the precise shape that people will give to their existences, but they will have to live it within the borders set by the carrying capacity of the Earth. As de Geus says, '[b]y whatever means, individual citizens should now aim to keep their so-called "ecological footprint" within sustainable limits' (2013, 2013: 47). This constraint put on people is, as demonstrated in this thesis, the only way to build resilient societies and to safeguard democracies from destruction, chaos, or forms of eco-dictatorship that would rise after ecological collapses. As Sachs says, 'limits are both restraining and facilitating: they act as constraints only with respect to one order of things, but open up possibilities with respect to another order of thing' (2015: 179).

In republican theory, the preservation of the public interest remains one of the core priorities of the social contract. Green republicanism thus aims at building resilient and sustainable societies to secure human and non-human flourishing now and in the future. The task of linking harmoniously the interests of the individuals and the common good is the one green democratic republicanism has to manage. To that end, the development of green citizenship is a condition *sine qua non*. That explains why the formation of moral character is a public and not merely private concern which must involve the power of the State[232]. As Sandel says, the 'distinct and intrinsically valuable versions of civic virtue and citizenship are cultivated by the political communities and institutions that represent the people' (1996: 117).

[232] An example of the state involvement in the matter of education could be the 'civic sustainability service' proposed by (Barry, 2012: 257-266).

According to this strand of republicanism, the rise of the liberal procedural republic and its emphasis on individual rights and neutrality has systematically disempowered citizens and resulted in widespread discontent, alienation, and apathy within the democratic project (Sandel, 1996). This is this strong civic republican tradition particularly embodied by J.-J. Rousseau (1762), Hannah Arendt (1958), and more recently by authors such as Alasdair MacIntyre (2011 [1981]) or Michael Sandel (1992; 1996), which is a particular source of inspiration for the green republican model advocated in this work. Green republicanism shares with this tradition a high conception of politics[233] where the political and ethical realms meet, as expressions of shared and contested moral values (agonistic politics).

On the other side of the republican tradition, are the Roman-inspired versions which have become prominent in contemporary debates and on which green republicanism also relies for its conceptualisation. These versions can be referred to as approaches which favour the political-legal constitutionalism understood as a barrier against factions, demagoguery, and tyranny. This tradition focuses 'on creating the institutional arrangements that preserve individual freedom' (Maynor, 2003; 12). It is especially embodied by Machiavelli and, more recently, by Quentin Skinner and Philip Pettit. By combining these two strands of republicanism, green republicanism plays on two forms of political institutions: direct democracy wherever it is possible (according to constraints of size and feasibility) and constitutionalism to safeguard democracy against anti-democratic (fascistic) drifts (see Section 6.4). Ecological virtue and the greening of citizenship are the touchstones of a green republicanism and both support the sustainability of the institutional system (the longevity of the green republican regime) as well as of the environment. It is particularly important to stress the importance of civic republicanism for an ecological perspective. Indeed, as Curry contends, the dependence of the common good upon ecosystem integrity implies that

[233] What Mouffe calls 'premodern conception of politics' (1993: 19).

it should be 'maintained by practices and duties of active "citizenship", whose larger goal is the health not only of the human public sphere but of the natural world which encloses, sustains and constitutes it' (2000: 1067).

The concern with particularity and place, typical of republicanism is also congruent 'with Alasdair MacIntyre's conception of "tradition" itself as something that is necessarily local and partial' (Barry, 2012: 225). It means, that, contrary to the centralised state tradition, a republican view wishes to adapt to the strong contextual dimension of (social, ecological and political) common life. Consequently, republicanism is not a 'regime of truth' like neoliberalism, that is a theory that presents itself as invariably, universally right and uniformly applicable (that is a 'pensée unique')[234]. Its purpose is to take into account the multiple facets of communities of life and adapt the general republican framework (environmental, social, and economic, constitutional rights) to the variability and specificity of local – human and nonhuman – contexts. One way of doing this would be to develop the local political level of 'bioregions' and to embrace provisionality, reversibility and contingency, i.e. democratic politics.

Green republicanism is post – rather than anti-liberal. Indeed, for green republican theory, state interference in individuals' actions or spheres such as private or economic life is legitimate insofar as it stays consistent with securing the public/common good and prevents arbitrary relationships of subordination and control (according to the 'non-domination ideal'). On the contrary to the ecomodernist narrative, which has become dominant at the international level (see Chapters 1 & 2), green republicanism contends that no virtuous synergy between capitalist economic and environmental protection (what summarises the oxymoron

[234] See Fukuyama (1992) who presents liberal states as the 'end of history'. Eckersley, for instance, holds that 'the promise of liberal democracy is a false promise; while proclaiming to be universal, liberal democracy can be shown to be exclusionary in a variety of ways' (2004: 87).

'green growth'[235]) can be found. This is the reason why such a conception of politics and economics is post-liberal and post-capitalist (see Chapter 5). In spite of its valuable achievements, liberalism (or more specifically neoliberal-capitalism), today, threatens democracy. It does so by organising the disengagement of citizens and the monopolisation of political power by a wealthy elite, but also by its inability to effectively address the dire warnings and alarming assessments sent over the last four decades by the scientific community about the state of Earth's ecosystems and environmental degradation (many of the ecological problems being now irreversible like species extinction and global warming). Past and present experience show now clearly enough, contrary to what some liberal thinkers try to demonstrate time and again (see Wissenburg, 1998, 2004), that green environmentalism is not dead. The green agenda cannot be captured in a liberal setting, such as the one developed in most Western countries, that is a setting dominated mainly by representative democracies and by 'corporate managers, media moguls, and technocrats' (Gare, 2016: back cover). In particular, dominant ways liberal democracies respond to the ecological crisis (such as through ecological modernisation and ecomodernism as analysed in Chapters 1 & 2), and 'green capitalism', have shown their dire limitations[236].

Despite the proliferation of environmental legislation, the situation is deteriorating year after year, convention (such as the Conference of the Parties – COP- around climate change) after convention and, without a radical change or transition from 'actually exiting unsustainability' (Barry, 2012), the trajectory towards ecological destruction appears inexorable. It is perilous to wait longer for a reversal of the situation insofar as the liberal prioritisation of private capital accumulation and

[235] The idea that constant technological innovation in production methods would make economic growth use less energy and resources and produce less waste ('decoupling') is criticised in Section 5.3.

[236] For a critique of ecological modernisation, see Christoff (1996a) and Barry (2003).

economic freedoms makes it impossible for a liberal democratic state to move effectively towards a sustainable society (Eckersley, 2006a: 275). At worse, in its classical version and other subsequent forms (such as conservative *ordo-liberalism* and libertarian right-wing anarchist ideology), liberalism is *intrinsically* unable to implement the measures needed to fight efficiently against the ecological predicament since 'liberals understand sustainability as a *constraint* on autonomy, rather than a *condition* of autonomy' (Eckersley, 2006a: 266; emphasis added). At best, (post)modern 'left-wing' liberal elites[237] have 'forgotten' the social and environmental roots of liberal socialism, making its form incompatible with real sustainability and *contingently* tied to the capitalist economy. In both cases, what is into question are the alliances made between capitalist forces and the present shape of liberalism.

Liberal and capitalist values, such as profit accumulation, resource extraction, creative destruction, growth-based economies, individualistic consumer rights, the imperative of 'economic competitiveness', deregulated markets, domination of the earth, etc. which underpin the capitalist global political economy, prevent the liberal democratic state to protect, on an effective and systemic basis, the local, national and global ecosystems and the world's climate stability. As Slaughter puts it, in the context of a contemporary global governance coloured by liberalism and globalised capitalism, 'environmental degradation, transborder pollution, and environmental harm to vulnerable people around the world have become increasingly prevalent' (2005: 207). To this problem can be added the difficulty brought about by the lack of effective institutional or international governance and the ways nation-states prioritise their own 'national interests' over global ones (state-centrism). The threat to life is caused by neoliberal institutions which all pursue the same agenda consisting in

[237] Social democratic and labour parties in Western countries have almost all capitulated to neoliberalism, agreeing with 'the end of ideology' catchword (Aron 1968, Bell 1960). The ecological crisis blatantly entails the end of the putative 'end of ideology'. Indeed, ecological politics is a powerful counter-ideology which fights against the dominant liberal capitalist ideology. 'Ideology' here defines a system of ideas designed to rationalise a political project, set up strategies, and move people to action.

reducing citizens to consumers, freeing markets from 'burdensome' state regulation, promoting managerialism, selling/privatising public goods, undermining job security for workers and vulnerable persons, developing soul-destroying activities rather than fulfilling ones (cf. the 'McDonaldization' of the labour market which creates insecurity and precarity[238]), empowering wealthy elites and transforming nature into tradable and profitable financial assets. The neoliberal logics also results in the exploitation of the lands and resources in the Global South which leads to environmental struggles (climate, food, land and environmental justice movements). Environmental degradation is, indeed, mainly borne by the poor: for instance, polluting factories or other such hazards are sited in poor countries or close to lower-class residential areas (See Section 2.3).

The locally-based environmental struggles of the poor and the vulnerable against the exploitation of their lands and resources by states or corporations are characterised by what Smith calls a 'hermeneutics of suspicion' directed toward the establishment in all its forms. The suspicion is extended to all attempts to 'lay down the law' (2001: 132). Neoliberal structures such as IMF, WB, WTO and the EU which reclaimed the role of states, but also capitalist corporations and political institutions are seen as exclusively profit-oriented, hierarchical and authoritarian, which constitutes an ultimate paradox for so-called 'liberal' institutions. It follows that most militants and intellectuals within grassroots initiatives and movements for social transformation around the world, call for *radical forms of democracy* to short-circuit systems of laws and institutional powers that they consider illegitimate. Ashish Kothari, for instance, an Indian environmental activist, is strongly advocating a 'radical ecological democracy' where 'communities and collectives would be at the center of governance and the economy" (2014: 37). In Venezuela, city-based communal councils arose in the 1980s claiming 'we do not want to be a government,

[238] On this issue, see Standing (2011) and Barry (2012).

we want to govern'. What ecologically and communally embedded people claim is, therefore, forms of direct democracy where local-based decisions can be made and directly influence the lives of the inhabitants.

A green republicanism would not contradict this view and would support, as Kothari himself does, that those communal democratic units are embedded within broader institutions of governance (bioregions, states and eventually federal or pluri-national institutional units) according to a subsidiarity principle. The challenge, as recalls Kothari, is to ensure that such institutions do not become centres of domination. These are also the objectives that a green republican version of politics seeks to perform, through some institutional tools, such as binding (instead of representative) mandates, the right to recall regular elections, the rotation of elected officials, a full-transparency in decision-makings, the popular right to organise a referendum, etc. The support for such proposals in the context of 'actually existing liberal democracies' can only come from a progressive shift in the collective culture and the undermining of neoliberal culture by enlightened individuals, contestatory associations and movements (such as grassroots movements or labour organisations), or radical left-wing, ecological and feminist political parties. What is interesting to note is that, against all the odds, the defence of a green republican vision of politics also meets the claims of a radical ecological democracy such as the demand for a decentralised world and an empowered, active citizenry. In the republican view, as well as in the radical democracy vision, the state will still have a legitimate role such as 'the protection of the weak, both human and non-human, and the guarantee of fundamental rights' (Kothari, 2014: 38). The state, as he adds, would also be important 'for generating financial resources for public services, enforcing environmental regulations, and ensuring personal and collective security – but all in the spirit of service to the public rather than accumulation of power' (ibid.).

In short, radical ecological democracy and green republicanism have much in common. Both seek to find a new harmony between individuals and society (contesting by doing so the extreme individualism of modernity); both call for the re-

politicisation and empowerment of communities; both seek to inaugurate institutions which are 'people' and not expert-'centric', criticising, by doing so, the limitations of liberal institutions which, on the pretext to defend individuals' preferences (omitting the analysis of the processes which lead to those 'preferences'), in fact foster political disempowerment, the general loss of political agency, and favour the economic interests of growth-based interests. Last but not least, both consider that no political, economic or socio-cultural achievement can be produced without the fundamental environmental conditions that make life on earth possible. That is, without the recognition of ecological limits, the restoration of degraded landscapes, the conservation of what remains of ecosystems and the respect of the right of nature to flourish (See Chapter 4). 'The urgency of this task, as well as the need to find synergies between ecological resilience and human well-being, makes this a central concern for social transformation' (Kothari, 2014: 7).

However, green republicanism is maybe less optimistic or more aware of the public apathy and structural (organised) public servitude than radical democracy theory (see Section 6.2). This is why it does not advocate direct democracy as a *panacea*, a remedy to all difficulties, differentiating itself on this point (but not on all) with the Rousseauian tradition, but also with proponents of radical democracy, eco-anarchists such as Bookchin, or radical downshifters belonging to the degrowth movement. Indeed, many green activists advocate the dissolution of nation-states, the generalisation of direct forms of democracy, and argue for a strong decentralisation (bioregionalism, for example). The German Green Party leader Rudolf Bahro (1982), for instance, is one of the strong green voices in favour of communal life, and small political units (communitarian anarchism). For green republicanism, the answer to the opposition between centralised states and autonomous local political entities lies in the notion of federalism. This means that the regions or local governments are free to pass the laws they want, insofar as those ones are not in contradiction with the federal and constitutional law which applies to all (without the possibility of

nullification). There are indeed some issues, such as the ecological restructuring of the society, energy transition, the regulation of markets, the defence of civil rights or collective and economic security, the financing of public services, etc. that must be devised and carried out by centralised political structures. Eckersley (1992, 2004), as well as Barry (2012)[239], are quite clear about the fact that the changes towards a sustainable future must be brought about by the state. As Dryzek & Dunleavy say, '[s]tates are some of the main institutions that affect society's interactions with the ecosystems that sustain human and non-human life on this planet. And just as the political economy can generate crises that re-shape the state in powerful ways, so can the political ecology' (2009: 243). If the possible arrangements of the state in the context of the ecological crisis can range from radical decentralisation to authoritarian drifts, it remains that the state is going to play a central part in the reshaping of political ecology (Eckersley, 2004).

Instead of praising myopically and evasively direct democracy, green republicanism follows Pettit and his defence of a 'mixed constitution' (2012). Indeed, some core values of society[240] such as 'ecological security' and 'social welfare' shall be immune from majoritarian rules as well as from administrative or political decisions. As Hayward says, 'there are certain principles and rights that merit immunity from the pure majority will of the populace at any given moment' (2001: 126). That explains why republicans grant a significant importance to constitutionalism and the rule of law (see Section 6.4) to prevent the tyranny of desires, corporatist interests, or arbitrary powers from turning the majority against the necessary ecological and social transformations our societies need.

For that purpose and against mob rule, that is, for the protection of the ecological and social conditions required for a decent life on earth (for both humans and nonhumans), the barrier of the fundamental law is erected as the last line of

[239] See also Barry & Eckersley (2005)

[240] These core values of society are such because they are 'generalizable interests' (See Hayward, 2001: 127).

defence of the common good. Because republicans believe that the shift away from the consumer mind-set of individuals to the necessary civic and ecological virtue of citizens will take time, it cannot take the risk to place the fate of the planet in the hands of uncertain and suggestible popular sentiments[241]. To this extent, radical ecological democracy (or the systematic use of direct democracy) is more a horizon or aspiration to aim for, than a point of departure for republicans. The latter adopt a more realistic perspective than direct democracy advocates (such as anarchist Murray Bookchin 2007 and Fotopoulos 1997, for instance) although they have much in common with them, especially the support they give to civil society institutions (NGO, trade unions, cooperatives, social enterprises, associations, etc.).

However, the significant point of contention remains the part played by the state. For radical (Kothari), social (Bookchin) or inclusive (Fotopoulos) democracy theorists, the statist framework is antithetical with autonomous institutions, the state being the class instrument of the powerful against the most vulnerable. It is in fact the case under neoliberal governance, but as Barry says, '[w]hile of course admitting that state power can be abusive, coercive, and liberty-denying, there is nothing inherently oppressive in state power being used to oblige citizens to perform certain actions for the public or collective good' (2012: 259). The republican state will, indeed, play an important role in the maintenance of collective goods and the organisation of common life. To prevent the state from being oppressive requires, as shows Dryzek, an active public sphere and civil society that give a strong impulse to environmental and democratic actions: 'much of the time we should look…to the polity *beyond the state*' (Dryzek, 1996: 475; emphasis added). Indeed, the 'power can be exercised from and within civil society in several ways' (ibid.: 481), including the changing of public

[241] After all, the rise, everywhere in Europe and in North America of dangerous populisms warns us against the 'natural goodness' of people who have been during decades exclusively nourished on the capitalistic values of individualism, materialism, and consumerism, and are constantly frustrated by the deliberate organisation of relative poverty and political apathy in consumer societies.

discourse, the legitimation of collective action, the constitution of deliberative fora, and the organisation of protest movements. This is what constitutes an *agonistic conception of democracy*. Democracy is indeed a practice that rests on empowerment, on the active participation of individuals and the actual possibility to contest existing institutions. Chantal Mouffe (1992, 1993, 2000) defines 'agonistic democracy' as an arena where differences can be confronted and where pluralism can be expressed. As Barry says, '[a]n agonistic theory insists upon preserving democratic struggle as something both *inevitable* and indeed *intrinsically good* for the health of democracy and democratic citizenship' (2012: 268; original emphasis).

In addition to the constitutional defence of fundamental rights, green republicanism will guarantee the citizen control of legislative and executive powers but also the right to disobey[242] (civil disobedience). The main pitfall of modern states has always been its tendency to become an independent entity defending its interests rather than the common good. This can be analysed through the rise of a 'parasitic bureaucracy', that is a political class which builds its career within the state machine, attempting to reach personal goals rather than working for the common good (Weber, 2015). In order to be legitimate, a state must accept 'controversy' and 'open-endedness' (that is the fact that the constitution of a fair state is always an open process). This means also accepting 'nonviolent disagreement'. Indeed, citizens are not morally bound to obey ordinary laws which diverge from the defence of common interests and deviate from the spirit of the rule of law. The green constitution will uphold the rights of conscientious refusal and civil disobedience when a law contravenes or places into jeopardy the common good; that is, the social, physical, economic, or ecological security of the citizens. More particularly, as explained in Section 4.4, Earth jurisprudence advocates 'a legal philosophy that explicitly recognises the moral right we all have to protest laws that place the Earth community

[242] For instance, the right of 'resistance to oppression' is one of the four natural and imprescriptible human rights of the 1789 French Declaration of Human and Civil Rights (Art. 2) which has a constitutional value. However, this right, being too vaguely enunciated, is rarely evoked in courts.

in peril' (Burdon, 2011 c: 71). Contestation is more prized than consensus within green republicanism (Barry, 2012).

The 'contestatory citizenry' dear to Philip Pettit (1999, 2000, 2004), is indeed a core element of the republican tradition to which green republicanism belongs and that it seeks to develop and encourage. However, Pettit's electoral-contestatory model which empowers ordinary citizens outside political processes giving them a negative power to challenge laws, policies, and actions, is not enough[243]. Green republicanism proponents, indeed, wish to give as much positive power as possible to people in local and regional institutions through the development of direct democracy procedures (localisation) wherever possible. In order to develop the monitoring power of citizens and their ability to 'contest' political decisions, some rights must be institutionally implemented, especially rights to economic and social security (universal and unconditional basic income) as well as the basic rights to an enlightened education and fair information. As Castoriadis points out, the best guarantee for and of democracy is the *paideia* of the citizens, that is 'the formation (always a *social* process) of individuals who have internalized both the necessity of laws and the possibility of putting the laws into question (1991: 173-174). Some civic duties and compulsory behaviours must also be institutionally implemented, such as the mandatory voting or the 'civic sustainability service' for all (Barry, 2012: 257 sq.). In addition to the decentralised, non-hierarchical dimensions of participatory democracy and direct democracy expression of politics, green republicanism adds the importance of an ecological non-dominating, democratic and democratising state (as opposed to the neoliberal state). The executive power must facilitate environmental reforms *below, and beyond the state*, that is at a local and global level. While ensuring a dynamic political

[243] Pettit's contestatory democracy model is a reactive and indirect manner for citizens to take part in the political process, which depends, eventually on the good will of the specialized agents (for instance judges) who occupy posts within the contestatory institutions.

life within civil society, green republicanism also acknowledges the necessity of a strong and independent parliament, conceived of as the protector of individual rights and liberties. The power of the legislature is indeed necessary to counterbalance the natural tendency of executives to degenerate[244].

Because the fundamental goal of democratic republican tradition is the preservation of the common good, the state must be oriented towards its defence rather than to sectional interests. Crouch (2004), for instance, identifies the growing direct political influence of private corporations as a core factor of our 'post-democracy' regimes. According to him, politics is increasingly functioning on the liberal model basis of interest representation (lobbying). This phenomenon is post-democratic insofar as the power to defend one's interests or to make oneself heard is unequally shared between citizens because of an unequal distribution of economic power, media access, and education. Against this tendency, the constitutional laws will provide a framework for state authority and restrict the intrusion of private interests (such as the ones of corporations and lobbies) in the collective life. As conceived here the republican tradition is primarily distinguished by its insistence on the need for civic virtue and the defence of public interests (*res publica*). That is for an interventionist state *and* an active citizenry.

On the contrary to liberal democracies which operate within short time horizons (election periods, the tyranny of the present), republicanism also aims at building resilient and sustainable societies to secure human flourishing in the long run. Indeed, as Honohan points out, 'shared goods are not incidental but central to individual fulfilment' (2000: 81). The defence of the common good is also a way to guarantee that the interests of the voiceless (non-humans, future generations, other humans outside the republic) are taken into account. For republicans, it is clear that environmental and social justice can only be secure in a self-governing community. This means that individual rights must be balanced with public responsibilities and

[244] The weakness of parliaments in Western democratic states (or in the European Union) creates the conditions for authoritarian executives.

duties if the human (and nonhuman) community is to survive and prosper. The protection/conservation/restoration of nature is not a question of individuals' preferences; it does not rely on a personal estimate of how much worse off would individuals be without parks and birds: it relies on an impersonal assessment of how much worse off humanity in general, societies, non-humans, and future generations would be endangered in the context of a devitalised and agonising nature (which is already the case in some places). This is why the liberal approach of justice which reasons in terms of personal costs and benefits is particularly ill-adapted to this issue.

The question of justice is, of course, a quintessentially political one; it relies, again, on the overall values for which a political system wishes to stand. It can, partly, be resolved by political dialogue between citizens (political deliberation, majority referendum, etc.) but it also needs substantive principles to guide and frame the deliberative procedure. *Substantively*, environmental protection/conservation and restoration should figure as an overarching principle in our theory of justice: we should regard environmental goods as meta-primary goods on which other ones depend. Like liberty is considered as a meta-principle for liberals, the preservation of our natural environment considered as a '*sustainer'* of any form of life on earth, should be viewed as prevailing, when put into competition with other primary goods (liberty included but on the ground that environmental sustainability is a necessary condition of autonomy, as shown in the previous section). As Section 4.4 has examined, it is through the constitutional recognition of 'rights of nature' that the present and the future of the planet can be best preserved. The next section will mainly focus on the way social, democratic, economic, and ecological sustainability can be secured through constitutional means.

6.4. Green constitutionalism and the social green state

At the risk of repeating what has been said in Section 6.2, the positive conception of freedom advocated by republicans is not a freedom *from* the state but a freedom *through and because of* the state. As Dagger puts it, '[t]o be *self*-governing, one must be free from the arbitrary rule of others, which means that citizens must be subject to the rule of law – the government or empire of laws, not of men, according to the old formula' (2006b: 153; emphasis added). In such a conception, democratic regimes are guaranteed by a set of laws – especially fundamental laws (constitutions) – that republican citizens have some role in making. As Rousseau said, 'to obey a law we have imposed on ourselves is freedom' (1994: 59). Or, in Dagger's words: '[b]y protecting the citizen against arbitrary power, the law is 'the non-mastering interferer' that ensures the citizen's freedom' (2006b: 255). Such a conception of liberty aims at vivifying a public-spirited political community and reviving the moral and civic ties that have been corrupted by the liberal doctrine.

From a broad perspective, a republican green theory is concerned about establishing social institutions and steering collective energies toward ends which are beneficial for the public good as a whole. Violating these principles would constitute an act of 'corruption' (Thompson, 2011: 3). One crucial part of the republican state is to defend the public realm, an indispensable source of flourishing for individuals, against forces and groups that seek to corrupt it. For republicans, there is no doubt that the essence of a 'good' (or 'just') society is – contra liberalism – more dependent on the quality of public goods than on the pursuit of private interests. A republican democratic society is considered as a relational space where goods, services, and institutions are produced for the mutual benefit of all. It is not a competitive place where a few can organise political decisions, institutions, and impose imperatives on the labour force, law, educational tasks, and so on, around their interests, that is for the benefit of the capitalist oligarchic societies and according to the minority rule. As Thompson recalls, '[i]n the classical Greek sense, oligarchic wealth constitutes a

condition of pleonexia: of acquiring more than one needs and more than others possess, and it does it at the expense of other social institutions' (2011: 11). Today this pleonexia is linked to the 'social logic' of consumerism and the competition for status very well outlined by Jackson (2009). On the contrary, the republican conception of democracy relies on equal access to resources that are necessary for the flourishing of all citizens (i.e. preserved ecological environments, safety, existential economic security, education, etc.). The rules or principles presented by the republican model of society will be deliberately entrenched in the constitution in a way that secures them against 'the vicissitudes of everyday political expediency' (Hayward, 2001: 119). One of these principles considered by green republicanism as fundamental is the access to equal and fundamental social, economic, and ecological capabilities.

The question of equality concerning the access to material resources is indeed of particular importance for green republicanism[245]. The reason for that is that republicanism aims at protecting its members against domination (Pettit 1997, 2012) and to do so, must deal with the question of social (in)equality. Traditional republicans such as Aristotle, Rousseau or Harrington have early pointed the dangers and the instability inherent in societies divided between the rich and the poor: in such communities, the rich will not be mere citizens, and the poor will never be able to reach the independence required by equal citizenship. As Sandel says, '[g]rowing inequality does damage to the sense in which democratic citizens share a common life' (2000: 21) or, in Thompson, words, '[u]nequal wealth not only makes the poor or less well-off more vulnerable to the power of their masters*, it also begins to change the very culture of republic'* (2013: 283; emphasis added). That is inequalities corrupt the spirit of republican institutions, instilling the poison of individualism and envy within them. This explains why the commitment to protect equality in a legitimate extent – that is

[245] For a peculiar account of 'economic security', see Section 5.4.

according to the Marxist formula 'From each according to his ability, to each according to his need (or needs)' – must combine the belief in *moral* equality (the equal intrinsic worth of all persons), *political* equality (the equal footing of citizens under the law), *democratic* equality (one citizen, one vote) and, as much as possible, *material* equality (equitable distribution of wealth). If Rousseau's critique of economic inequality could not capture the structural asymmetries of social power as they manifest in the contemporary capitalist world, he interestingly draws our attention to one specific kind of illegitimate power, by which one regularly obeys a foreign will (sometimes with actual consent[246]) as issuing from economic inequalities. This is the basis for Rousseau's recommendation in *The Social Contract* that 'no citizen shall ever be wealthy enough to buy another, and none poor enough to be forced to sell himself' (1762: 39). Inequalities become dangerous when they become *so large* that they prevent the less advantaged from following their own will and own interests while allowing some to have more say than others in determining laws or organising social and economic spheres. Good social institutions will not seek to eliminate dependence between individuals (which is impossible in societies) but to eradicate the material conditions of domination by putting, as much as possible, individuals on a roughly equal footing. What is required is not equality *stricto sensu* (that is arithmetic equality), but legitimate and explicitly democratically agreed economic inequality. This can be provided, on a national level, by:

- ensuring free and efficient public services (education, transportation, health system);
- recognising the gender caring/care work, and other forms of unpaid labour which are necessary for the functioning of societies;
- tackling health inequalities, and addressing specifically the needs of weak, disadvantaged and vulnerable groups;

[246] This consent given by the dominated to their masters could be described, in Marxist words, as 'false consciousness', that is as the way in which ideological and institutional processes mislead social class actors in order to hide the real state of affairs (slavery, exploitation, domination).

- suppressing the gender paid gap, limiting as much as possible wage differences, and making capital accumulation ineffective above certain thresholds (fiscal revolution);
- forbidding speculative activities; actively regulating (suppressing?) stock exchanges and creating public banks of investment;
- allocating an unconditional basic income securing people's subsistence for existence, and increasing minimum wages while capping high salaries;
- suppressing tax heavens and taxing heavily (forbidding?) unsustainable and unsocial productions;
- making constitutional civil, ecological and social rights effective (enforceable rights);
- actively cultivating civic duties for all citizens during their all lives, fostering ecological citizenship (ecological civil service, compulsory voting, random drawing for some elective activities, etc.);
- preventing unforced consumption, by regulating production, advertising, television programmes, (free) internet, and by offering an enlightened scientific but also humanities-based education to the population;

On the international side, much needs to be reached to reduce inequalities and compensate the debt that North countries have towards the South. Doyle and Stiglitz (2015) give some objectives that could be met within a reasonable time-horizon:

- eradicating extreme poverty and hunger;
- achieving primary education for all boys and girls;
- promoting gender equality and empowering women (thanks to educational programmes);
- combatting tropical diseases and providing free vaccinations;
- Ensuring environmental sustainability

A departure from orthodox GDP measured economic growth and capitalist-rationalist modernity (see Chapter 5) is necessary for maintaining the ecological balance of the earth. But it is also a condition required to decrease the level of inequalities and exploitation all over the planet (due to capitalist extension and globalisation), as well as unhealthy growing disparities in wealthy countries. To protect citizens – in political, labour, educational and production spheres – against the domination of the powerful and their propensity to transform society into a means for their advantage, the state must recover the capacity, through constitutional and legislative ways, to protect public goods and shared resources. This view conflicts with the liberal understanding of the nation-state as a 'neutral' entity which does not intervene to change the ends and values of citizens. The neoliberal rationality which began to develop in the 1970s has been continually weakening the political role played by states, making them depend intimately on the goodwill of corporations and markets. Against this, green republican vision advocates a weak perfectionist conception which sees, as the primary goal of the state, the steering of society towards the meeting of public needs and ends.

However, this perfectionism does not prevent green republicanism from supporting pluralism, as long as the lifestyles chosen by individuals remain in the boundaries of a socio-ecological responsible and constitutionally defined framework. To remain in the ecological limits implies putting the economy back in its proper place; that is, embedded in ethics, biology, sociology, and ecology (Chapter 5). Economy, indeed, must not any longer be seen as the primary goal of politics and the questionable paradigm of 'growth for growth' or 'undifferentiated growth' will have to be abandoned. Thanks to the renewed state power over the markets, the economy could become again a means to enhance the 'quality of life' and human flourishing, instead of a means to put societies, ecologically and socially speaking, at risk. For instance, companies which misuse resources, pollute the environment, create social harms, or impose too much pressure on their labour force, will be forced to reform their practices to comply with the law. The republican state will work on the

construction of a more publicly-oriented economy, or in Rousseau's terms, a 'public economy' whose goal is to 'provide economic life with a more democratic, more humane, and more socially relevant purpose' (Thompson, 2011: 17). The republican government will foster the decrease of global carbon and material footprint, starting from the wealthy – at a national and international level – and transforming the shrinking economy into a sharing, more egalitarian convivialist economy (see Section 5.4). As Barry puts it, 'civic republicans have no particular difficulty in either regulating the economy for political [and ecological] purposes nor, if the former require it, to countenance a 'post-growth', steady-state economy' (2012: 254). Green republicans would, for instance, not hesitate to regulate incomes, markets, property-rights, advertisement, workplace, production, consumption and investments matters, corporations, population growth, etc. Indeed, common goods such as lakes, seacoasts, mountains, forests, sources of water, energy, precious resources, etc. will be given back to the commons while property-rights will be limited to be better shared. For traditional neo-republicans, such as Dagger (2012), the neo-republican civic economy must be a property-owning democracy. This form of democracy and liberal socialism have in common the idea that, while maintaining private property, the right to property has to be restrained, politically regulated and dispersed to restrict inequalities[247].

Advertisement would be regulated on ethical, ecological and aesthetic grounds. Indeed, by encouraging modes of subjectivity which are immature, infantile, individualistic, and not resilient, consumer-driver ads oppose the mindful long-term view that sustainability requires as well as the constitution of a healthy free mind. Advertisement also fosters the waste of precious natural resources (not only by the consumer practices it encourages but also by the material support advertisement consumes). Lastly, it disfigures the rural and urban environment and can be

[247] On 'Social-Republican Property', a term which is intended to connote market socialism and republicanism from which it arises, see William H. Simon (1990).

considered as an aggressive commercial act which increases, in return, violence, feeling of unease, and mental tiredness in individuals. In brief, advertising is considered by green republicans as an intellectual, ecological and aesthetic pollution which needs to be strictly controlled, maybe even banished from public space[248].

Concerning the workplace, as Barry (2012) points out, green republicans would have no hesitation in interfering and regulating types of work which undermine the capacity of citizens to be competent, free, and make them unable to take their place as equals in public debates about the political decisions of society (p. 240). In other words, work should never compromise the political equality of citizens or destabilise solidarity and communities. More precisely, a green republicanism would favour and support small worker-owned cooperatives or worker-self-managed firms, the whole republican philosophy of work following the motto '*it is better to have more workers working less, rather than less people working more'* (Barry, 2012: 251; original emphasis). The green republican state will indeed foster values and practices of solidarity and sharing as a model of economic production and consumption (what the notion 'social economy' summarises). Corporate activities will be more restricted than they are today to remove arbitrary forms of domination. According to Barry, corporations could become for instance semi-private bodies created for a specific purpose and for a limited time to provide (useful and sustainable) goods or services to the communities (2012: 248) [249].

Unlike Marxist-socialist theories, the republican state does not aim at having the monopoly of ownership on the productive property but seeks – thanks to constitutional mechanisms – to protect and ensure the general interest from the pressures of oligarchic wealth. As Dagger says, defining the neo-republican civic

[248] In Grenoble, the first big city ruled by greens in France, more than 300 ad inserts have been removed from public space, since 2014, and replaced by trees. A green republican state would not hesitate to implement such measures.

[249] If this issue is in general lacking in the work of most prominent theorists of neo-republicanism, it can, however, be found in more socialist-oriented republicanism such as the one defended by Stuart White (2010).

economy, it 'will preserve the market, while constraining it to serve public purposes' (Dagger, 2006a: 151). Rather than disappearing, markets would have a different role: instead of developing and producing exploitive social relations and unsustainable goods, they would be actively regulated to provide ecological, fair and sustainable products and services. Hence, in the post-capitalist economy that green republican envisages (cf. Chapter 5), private markets and production still have a part to play. Neo-republicans are neither Marxist-socialist (although they have much in common with eco-socialism[250]) insofar as they do not wish to abolish private markets, nor liberal since they refuse the free market society[251]. Markets are indeed seen as legitimate as long as they remain in their place and do not corrupt other aspects of life. Contrary to liberal view, they are not seen as working necessarily 'towards the accomplishment of political equality, freedom as self-government, deliberative politics, or civic virtue' (Dagger, 2006a: 157-158).

That explains why green republicanism is at the same time post-liberal and post-(Marxist)socialist. Markets would become tools again and not autonomous, disembedded places, which revolve around themselves and serve only the interests of the wealthiest. The green republican state will be entitled to limit as much as possible the disparities in wealth that flow from unequal market relations to achieve political and economic equality. As said before, the philosophy of the republican green state is different from that of either liberal or socialist ones (respectively characterised by 'neutrality' or 'public monopolies'); it is the philosophy of a 'social green republicanism' dedicated to the public interest. As Eckersley says, moving toward our ideal requires that 'states become local agents of the common good' (2004: 245). As such, the green republican state will work on extending/recovering the commons

[250] For a definition of ecosocialism, see Lowy (2005).

[251] The difference between a 'market economy' and a 'market society', as Sandel (2015.) explains, lies in the fact that the first one is a tool for organising productive activity while the second one is a *place*.

wherever possible, combatting the forces of privatisation via strategies of dispossession, socialisation or associationalism[252]. Republican institutions do not promote growth over social and ecological justice. They will instead focus on providing people with economic, social and ecological security, i.e. with fundamental goods belonging to health, work, education, dwelling, information, social production and ecological services, which are necessary for every individual to feel a sense of existential security and well-being.

In contrast to the liberal norm of non-interference which prevails in neoliberal capitalism, green republicanism contends that national governments need to assert their authority against the unchecked power of corporations and the underlying political economy of growth-based capitalism. In green republican theory, laws, and especially the constitutional laws are regarded as significant barriers against arbitrary power, exploitation, predation, and greed. When in practice ecologists try to defend ecosystems and biological life against ecocide models, they rely on institutions and constitutional laws, that is to say, on the power of political and legal institutions. Green republicanism considers, indeed, the juridical/constitutional state as 'the preeminent institution with the requisite political authority and steering capacity to tackle ecological problems' (Barry & Eckersley, 2005: ix). Republican nation-state will support decentralisation, and the empowerment of communities by developing local and regional autonomy although the general frame will be fixed by constitutional and federal laws. As already shown (Sections 6.2 & 6.3), decentralised politics can become a source of ecological transformation of humankind, but this will occur within the frame of a strong constitutional legal architecture.

Green republicanism considers institutional reforms as one of the most promising instruments for bringing social changes and building a sustainable world. Indeed, institutions are central to political competence, that is for making better

[252] On the issue of green associational democratic politics and policies, see Smith (2005).

decisions but also for creating better people by developing and strengthening civic virtue and citizenship values[253]. Moreover, well-functioning institutions are vital to providing individuals with the goods and services they need to flourish. The rule of law, although contested for its 'ideological abuse and general over-use' (Shklar, 1998: 21) remains the most important normative rule of modern democracies (*lex superior*), often associated with the 'rule of reason'. A constitution is an important instrument to steer the orientation of future political and legal decision: it is above ordinary laws and can only be amended through special and demanding procedures (supermajorities, referendum, etc.)[254]. Republican constitutionalism aims at limiting the exercise of legislative and executive bodies, ensuring therefore that the political power does not end up in the hands of particular groups and that the country remains governed by the 'rule of reason' (or 'ecological rationality') rather than by particular interests. Thanks to the constitution, the legislators and state agencies are bound to previous decisions which involved the future, ensuring, therefore, a continuity in time and place which is a key element of 'resilient societies'. Guided by a precise and substantial road-map, the executive can focus on the normative ends and effective improvements it can achieve rather than on 'managing' the present or preserving the power relationships (*status quo* or 'business-as-usual' scenario). Republican constitutionalism expresses the normative point of view of *citizens*, that is, ideally, of rational and reasonable individuals interested in the common good, rather than that of individualistic consumers seeking to optimize their interests. The constitution expresses the principles that a community of rational beings or, in Habermas' terms, an ideal communication community, would agree upon. It embodies, therefore, the most rational and reasonable part of all us, and represents a significant normative guide for the life of citizens. Indeed, the moral competence republicans seek to

[253] In Western societies, the notion of citizenship has become a problematic concept: we are experiencing an 'eclipse of citizenship' (Pranger, 1968). See also Walzer (1970).

[254] On the 'ways of constitution-making', see Elster (1997).

embody involves the choice of ethical and comprehensive ends, an attitude which opposes the normative neutrality advocated by anti-perfectionist liberals. This project, given the state of moral and political degeneration of liberal market democracies, can appear utopian but only concrete utopias can transform the present world in a better way (which the 'Realpolitik', that is the adaptation to neoliberalism, advocated by most liberal policymakers and theorists, cannot).

Green republicanism intends to offset the post-democratic turn of our contemporary societies (Crouch 2004, Fremaux and Guillaume 2014, Fremaux and Barry forthcoming 2018). To do so, it relies on the propagation, through renewed institutions, of new socio-ecological narratives which emphasise the green virtues and values of solidarity, responsibility, care, compassion, respect for the non-human world (and life in general), and a sense of mutual obligation diffused by a renewed (ecological) education and the spreading of a green virtue ethics (See Sections 5.4 & 7.2). The top-down exercise of power should be an opportunity to exemplify and spur the replacement of unsustainable and (il)liberal public values (predation, competition, consumerism, individualism, etc.) by news visions of the good life (decency, moderation, passion for the common good, etc.). These new norms of conduct are most needed if we want to address the ecological and social predicament and the current 'demoralisation' of the individuals. Indeed, the endemic features of a culture are not only pre-political anthropological facts but also politically and institutionally created stories or *myths* that can be challenged. The neoliberal and capitalist understanding of life, based on an 'irrational rationality' (Foucault, 2008: 105), has brought about a range of tensions and contradictions at all levels, but especially in the social sphere where 'the active bonds of compassion, benevolence, love for one's fellow, and sense of community' oppose the market-based conception of the social life. By 'picking out the egoistic interest of individuals, emphasizing it, and making it more incisive' (Foucault, 2008: 302), neoliberalism has created anti-social and unsustainable myths, such as the myth of growth or the adulation of the 'winner-type', the bereft of emotions and feelings or the praising of individual success

against the well-being of the community – updating Hobbes (2010)'s negative anthropology and description of the state of nature 'as war of all against all'.

Green republicanism will seek to shape public culture in a way that fits socio-economic and ecological sustainability. Sandel gives a speaking example of a kind of formative project that republicans would endorse but that procedural liberals would probably reject. '[i]t would be defensible', he says, 'from the standpoint of republican freedom, to discourage practices that glorify consumerism on the grounds that such practices promote privatized, materialistic habits, enervate civic virtue, and induce a selfish disregard for the public good' (1998: 329). In the same vein, as copiously argued in this thesis, economic powers will be brought back to democratic accountability. If for economic liberals, private interests and capitalistic power legitimately exist *outside* and *against* the public good and public authority, for republicans nothing can be lifted above the vital needs of the community. Republic institutions are such that they also allow the monitoring of public powers. Indeed, without limits, public authority can degenerate in a discretionary power, ending up being used for private purposes (nepotism, plutocracy, etc.). This is why Pettit (2012) particularly develops the idea of 'popular control': a state is legitimate 'to the extent that the order it imposes on its citizens is imposed under popular control' (p. 239). Institutions must be designed to guard citizens against public domination, thanks to 'a rich array of popular controls over government' (ibid.: 3) but also thanks to the fundamental law that cannot be amended without specific procedures. The core principles of the green republic must indeed be protected from the vicissitudes of everyday political affairs as well as (as analysed in Section 6.3) from the law of majority.

The rule of law is often seen as an institutional restraint on executive power holders, as well as a safeguard against the risk entailed by the tyranny of the majority. In this way, it appears as a protective arrangement against the domination by the agents of the government (executive power) as well as against the possible drift of

majoritarian electoral systems (legislative power). According to neo-republicans, political freedom means that citizens can resist governmental authorities when the latter make decisions infringing the legitimate interests of all the governed, whether those decisions come from an arbitrary source of power, whether they are designed by the majority itself, like in the case of creeping fascism. Indeed, republicans believe that it is a mistake to identify democracy with the sole idea of majoritarianism. Such a view leaves aside the traditional worry about majority tyranny as well as about the mental conditioning of masses. Alexis de Tocqueville or federalist American founding fathers such as Hamilton or Madison have well expressed this worry. They feared, indeed, that, under populist or demagogic governments, the public good, which is different from the sum of the good of individuals, is ignored by the force of an overbearing majority (Hamilton and al., 2008[1787]: *Federalist 10*). In this case, the constitutional limits can be seen as essential republican bulwarks. The separation of powers and the facts that both the legislative and executive powers are subjects to review by the judiciary, thus appear as a necessary tool to oppose the risks of 'ochlocracy" (mob rule) 'oligarchy' (power of the few) as well as the danger of abusive governmental authorities (dictatorship). Green republicanism is by definition attached to and constituted by democracy (see Section 6.3) and considers traditional democratic institutions such as the sovereign people, the deliberative assembly, the independent judiciary power and the elected executive, as well as an overarching constitution (green constitutionalism) as inviolable, and simply in need of updating. To secure the concept of liberty, understood as the subjection to public laws made for the common good, checks and balances will be introduced in the architecture of powers. Republicans, as Sellers puts it 'secured liberty as non-domination by protecting citizens against each other' (2003: 141). Checks and balances will be designed to prevent that some institutions become all powerful (like the executive power in France).

For green republicans, what matters most is the defence of human and non-human long term-interests against the short-term thinking of capitalist and consumer

democracies. Green republicanism rests on the idea that no genuine freedom and no human flourishing can be ensured without the protection of the material, spiritual, recreational and biological goods granted by healthy ecosystems. Green constitutional provisions will aim at protecting the vital needs of existing human and non-human living beings but also at encouraging governmental authorities to make more future-oriented decisions to protect future generations. This idea has led Hayward to present a case for a substantive constitutional provision inspired by the Brundtland Report: '[a]ll human beings have the fundamental right to an environment adequate for their health and well-being' (WCED, 1987: 348; Hayward, 2005: 28-29). His statement corresponds to a weak-anthropocentric oriented constitutional proposal. However, as mentioned earlier (Section 4.4), the earth jurisprudence advocated in this thesis points towards the defence of post-anthropocentrism, a position which takes into account weak anthropocentric as well as ecocentric interests. Indeed, in the context of limited knowledge concerning the positive feedbacks and retroaction loops of our excessive exploitation of nature (see chapters 1 & 2), the position which takes into account the interests of nature independently of possibly myopic human interests can be considered as a defence of humanism. *Ecocentrism is a humanism.*

The constitutional law will explicitly incorporate government's responsibility for the climate and the preservation of ecological systems of life. Worth noting here is the fact that many countries have already included environmental provisions in their national constitutions (see Section 4.4). Hayward has listed more than 70 countries already including nature's protection in their rule of law (2001: 131, n.2). For example, it is through the constitutional recognition of 'rights of nature' in the seventh chapter of Ecuador's 2008 constitution that *Pachamama* has been put at the centre of consideration for what concerns 'good ways of living' (*Buen vivir*). The enforcement of nature's rights has allowed to avoid the exploitations of oil reserve in the Ecuadorian Amazon (Berros, 2015: n.p.). To respond in advance to critiques who see in this green constitutionalism an authoritarian drift, it can be added that the new

Ecuadorian constitution was approved in a referendum, with nearly 64 percent of voters in its favour. Even if the questions of instantiation are still open, this institutional novelty appears as a perfect match between republican constitutionalism and direct democracy. In green republican constitutions, ecosystems and global climate will be considered as *global common goods*. The state and its agencies – whatever will be the majority in charge or people's immediate will – will, therefore, be obliged to take environmental protection into account when making decisions. On the other hand, extended opportunities for enlightened information, genuine participation in public affairs and legal protection of citizens will constitute effective democratic counterparts. The state itself will be subject to the fundamental law ('state-under-law' or 'Rechtsstaat') and therefore be obliged to guarantee the common good (*res publica*) enshrined in the rule of law. The legislative body will be able to create ordinary laws as long as they do not contradict the constitution.

Green republicanism considers the judicial enforcement as being necessary to protect the life-prospects and life-conditions of future generations, that is of those who, humans and non-humans, cannot take part in the democratic processes and therefore cannot influence political decisions. This can be linked to Eckersley's 'democracy of the affected' idea (See Section 4.4). The constitutional protection of future generations against the power of state authorities and democracy could be termed, according to Ekeli, the 'posterity provision' according to which 'the state has a duty to avoid and prevent decisions and activities that can cause avoidable damage to critical natural resources that are necessary to provide for the basic physiological (biological and physical) needs of future generations' (2007: 379). Ekeli also argues for the appointment of guardians for future people 'and these guardians should be empowered to initiate legal proceedings on behalf of posterity (ibid.). Chapter 4 of this thesis has complementary argued for the legal representation of nature in law courts that is for the fact that legal guardians are appointed to defend the constitutional rights of natural communities and ecosystems to exist and flourish.

Indeed, decisions made by state authorities do involve not only existing people but also future generations and non-human livings. This is especially the case in decisions affecting the environment. If the legal, social machinery can be devastating, it is almost always possible to go back. This is not the case when destructive decisions are made about climate change, natural resources, biodiversity, the storage of nuclear waste, new forms of life created by biotechnology, etc. whose effects can mostly not be withdrawn. However, nonhumans, like future people, cannot influence political decisions made today. This is the reason why this thesis proposes the protection of future generations and non-humans' interests by the way of constitutional laws. For instance, Art. 71 of the Ecuadorian constitution states that 'Nature or *Pachamama*, where life is reproduced and exists, has the right to exist, persist, maintain and regenerate its vital cycles, structure, functions and its processes in evolution'. Western countries could also get inspiration from the Ethiopian constitution, which states, that '[t]he design and implementation of programmes and projects…shall not damage or destroy the environment. Governments and citizens shall have the duty to protect the environment' (Art. 92-2 &4; quoted in Damtie, 2011: 166). According to these constitutional rules, economic and individual projects can be conducted on the condition that they do not put at risk the existence of some species or the good functioning of ecosystems. The preamble of the Ecuadorian constitution refers to the intention 'to build a new order of cohabitation for citizens, in its diversity and in harmony with nature, to achieve well-being'[255] The Green constitution will explicitly link the well-being of humans and respect for natural communities, democratically agreed by citizens. It will implement enforceable rights of nature that will place special obligations on people, on legal entities, such as corporations and associations, but also on the state that will bear the duty to respect and support the rights of nature. Indeed, the state will be mandated by the

[255] See also Art 275. The Constitution of the Republic of Ecuador is available [Online]: http://pdba.georgetown.edu/Constitutions/Ecuador/english08.html

constitution to actively promote the social, economic, and ecological well-being of its population. As the art. 83(6) of the Ecuadorian Constitution indicates, natural resources will have to be used 'in a rational, viable and sustainable manner' (quoted in Cullinan, 2002: 206) so that the natural capacity of the ecosystems can regenerate, and that the needs of present and future generations can be met (see Art. 395(1)).

The critique of constitutional rights generally rests on the fact that they transfer powers from the legislature, that is from democracy to judiciary. Bellamy (2007) or Waldron (1993), for instance, criticise legal constitutionalism on the account that entrenched constitutions and judicial review are undemocratic and disable legislators (that is citizens) from their normal functions of revision, reform of innovation in the law (Waldron, 1993: 27). Constitutions are then said to overtake democratic elected legislatures and force ordinary citizens to be governed by a scheme of rights that they have not chosen. In the case of the protection of future generations and non-human beings, the potential anti-democratic stance of republicanism indeed arises. However, legitimate principles such as the 'binding of the future', and the preservation of the autonomy of future citizens, can justify that democratic restrictions are imposed. On this issue, one could also say, with Castoriadis that 'self-binding' (or self-limitation) is a particular feature of democracy itself (Castoriadis defines autonomy as 'self-limitation'). 'When we succeed in constraining ourselves for the sake of securing basic liberties and opportunities for everyone, we create the conditions of a political community that is just and democratic. This is the morally best political community to which we can aspire'. (Gutmann, 1995: 154-155). Moreover, the argument of the loss of democracy is practically flawed since it presupposes ideal existing democratic institutions where citizens are actually the ones choosing the laws they have to obey. However, all modern democracies have numerous institutions and procedures which contradict the power of the public vote and collective representation. Among others, we find the life-appointed constitutional judges in the US, the judicial review of national legislation by the German Federal Constitutional Court, the unelected upper house of the parliament in the U.K. or the

legislative power given to the government in France. Laws and regulations are not only issued by the legislature (and even less by peoples in the case of indirect democracies): they can be issued from governments or by unelected courts. Moreover, the supranational source of laws also come from non-elected instances such as the European Commission, the council of the European Union, global organisations such as the IMF or the WTO which produce international rules of commerce, or the international Labour Organisation, etc. All modern democracies try to contain the possible abuses of majority rule, and those limitations have become ubiquitous features of democratic constitutions[256].

As a compensation for the importance of the rule of law, green republicanism defends the necessity of active citizen participation, through for instance compulsory voting and participatory initiatives, the creation of a 'democratic society' as opposed to a 'democratic system', the enlightening education for everybody, through the entire nationalisation/municipalisation of the school system, and the effectiveness of democratic institutional powers thanks to referendum, conditioned popular right to call a constituent assembly, and the replacement of the high chamber by citizens chosen by lot, etc. Instead of just presupposing that citizens possess this body of fundamental rights, liberties, and opportunities, green republicanism intends precisely to lean towards their real instantiation. This makes this regime close to an ideal democratic state such as the one described by Dahl (2001).

For green republicanism, what needs to be put at the forefront is what Dryzek calls 'ecological rationality', that is 'a form of reason which can act as a warrant for policy recommendations and decisions' (1983: 5) and serve as a normative

[256] For a further exploration of this issue, see Lijphart 1997's article entitled 'Back to democratic basics: who really practices majority rule?'

justification for public political choices. It means that green republican institutions eventually rely on the existence of *common interests*, which constitute the normative frame of reference for political and legal action. As Dryzek shows (1983), human interests and those of ecosystem stability coincide at a very fundamental level (something on which weak anthropocentrism and post-anthropocentrism agree). This is why traditional forms of human reason, such as technical, economic, political, legal and social rationalities 'should step aside in favour of the superior claims of ecological rationality…. We should promote this rationality: that is the capability of this community to produce the life-support system upon which all its members (including man) are dependent' (1983: 9-10). Therefore, what institutions must diffuse is another representation of the world. As Castoriadis suggests the 'representation of the world as an object of growing mastery or as the decor of an anthroposphere must be destroyed' (1999: 245). Polly Higgins, the lead advocate for ecocide law (Section 4.4) is fighting, for example, to implement rules at the international level which would prohibit extensive damage, destruction to or loss of human and non-human life. The law of Ecocide, which, in Higgins' words, 'has at its heart a fundamental intrinsic value' of the nonhuman world (2012: 9) illustrates what sort of environmental constitutional content could be agreed upon at an international level and translated into national rules of law.

According to the post-anthropocentric outlook defended in Chapter 4, international and national laws will have to protect the rights of nature *per se* because they value the Earth community for what it is – a precious and unique source life – and not only for what humans myopically think they can benefit from. When humanity will have extended the circle of its understanding and compassion to all the living beings and the whole of nature, it will mean that a new type of conscience will have emerged: an ecological conscience reflecting humanity's long-awaited awareness of her vulnerable, fragile and dependent place in the biotic community. In his 1947 essay, 'The ecological Conscience', Aldo Leopold was already bemoaning the fact that conservation efforts had not yet touched the psyche of the nation, the only progress

achieved so far consisting in rhetorical declarations of intention. While progress is made only on paper, on the side of nature, things are dramatically regressing. Seventy years later, things (and human nature) have not changed. The reason for such a predicament is, according to him, that 'we have not asked the citizen to assume any real responsibility. We have told him that if he will vote right, obey the law, join some organizations, and practice what conservation is profitable on his own land, that everything will be lovely; the government will do the rest' (1992: 338). Indeed, republican democratic institutions are not sufficient to address the crisis. Even in the (ideal) case of the best ecological constitution and rules, and the best politicians in charge, we might still have to wait for substantial changes until cultural and philosophical shifts have occurred. The transition away from unsustainable capitalist to green republican institutions will have to be decided collectively and grounded culturally. Green republicans will not make some political 'coup'. That explains why the change of conscience might be the first requisite even if green republicanism offers transformative institutions intended to form the character of ecological citizens. Indeed, the fundamental keys of good functioning institutions are the philosophy, ethics, spirit, which are underlying them. As Leopold says, '[o]bligations have no meaning without conscience' … and no important change 'was ever accomplished without an internal change in our intellectual emphasis, loyalties, affections, and convictions' (ibid.), that is without a change in our ethic (see Chapter 4). Green republicanism can, therefore, offer the best conceivable and possible institutions to challenge the ecological predicament – what it is doing as we tried to demonstrate in this chapter – if people are not ready to move in the direction of more flourishing and more sustainable arts of living, life sustaining capacities will deteriorate further, as well as the social, economic, and political conditions of existence. In effect, good institutions and virtue will not be enough to 'save' the world: without personal and collective courage and commitment, good will, and a touch of idealism, the balance of power will remain favourable to the devastating forces.

6.5. Conclusion

> If we do not change direction, we are likely to end up where we are going.
> — Chinese Proverb

This chapter has sought to complete the outline of a green republican constitutional regime consistent with the post-anthropocentric ethics described in Chapter 4 and the post-growth economics fleshed out in Chapter 5. It has developed, in Section 6.1 an eco-communitarian conception of relational freedom opposed to negative liberty but also to the consumer freedom advocated in capitalist market societies which both contradict the norms of self-determination and self-limitation crucial for republicanism as well as for ecologism. Indeed, there is more to liberty than having options or being free of impediments. To that extent, institutions of capitalism, as non-elected instances, can never be considered as *legitimate* to govern, not to say they are not intrinsically *just*. This Chapter has sought to demonstrate why the neo-republican conception of freedom as non-domination and self-rule, which implies the implementation of securing institutions, must be accompanied by an adequate access to ecological, social and economic security.

The issue of economic security entails the necessity to provide real material security to people so that they can *effectively* (and not only theoretically through formal rights) participate in the collective life and make their own decisions. Because the political life of the *polis* is considered as the place where freedom can be exercised, republicanism regards the notion of citizenship as fundamentally bound to the one of liberty. By implementing exemplary institutions, reinforcing rights and duties, and guaranteeing information and education, green republicanism aims at transforming the normative values of societies and produce the citizens who will implement the radical changes most needed. As Pettit shows (1997: 246 sq.), republican laws attract compliance only when they are embedded in socially entrenched norms and

supported by a spontaneous, culturally reinforced civility. What is into question, therefore, is the creation of a green republican democratic spirit.

Section 6.3 has unpacked some of the links between green republicanism and democracy. If republicanism is historically only contingently linked to democracy (we could imagine monarchic or oligarchic republic regimes still looking for the common good), green republicanism defines itself as a constitutional democratic regime which aims at empowering people. Central here is the idea that democracy is a practice that rests on the level of involvement of individuals, on active citizenship, and the actual possibility for people to participate in (but also to contest) institutions. One of the features of green republicanism is indeed its explicitly agonistic, democratically and non-violently contestatory character. The affirmation of contestation over consensus has the merit to put politics again in the first place over technocratic decision-making processes. In effect, technocratic institutions tend to produce an apathetic, passive citizenry waiting for ready-made solutions and refusing duties or responsibilities (like teenagers completely controlled by authoritarian parents cannot develop a sense of autonomy and responsibility for their own life). Active citizenship is indeed a crucial priority for the revival of democracy and the opposition to (eco)dictatorial regimes. As we have seen, republicanism is not synonymous with majority-rule. Democratic institutions and practices will be protected from their own endangerment[257] by a robust constitutional framework which will define constitutional civil and environmental rights and will create a legal duty of care for the planet. This section has also dealt with the notion of ecological justice linking the claims for radical democracy in the Global South to its exploitation by Western countries. The section exhibited the links between radical theories of democracy and green republicanism and provided further evidence, if such were necessary, of the democratic foundation of green republicanism. The main point of contention between direct democracy

[257] As Arendt recalls, 'Hitler's rise to power was legal in terms of majority rule' (1973: 306)

green proponents or eco-anarchists remains the part played by the state in Green republicanism which has been deepened in Section 6.4. Indeed, as demonstrated here, the state remains for green republicanism the primary locus of power to organise the defence of sustainability below (at the local level) and above (on the international scene). The global transformation toward sustainability is a task in which nation-states play a central role as much as because of the influence they can have on international institutions than for the organisation of local democracy (decentralisation) they can implement. Guarantor of the new green republican social contract, a proactive and empowering state that involves citizens in the decision-making processes is the most efficient administrative level (with bio-regions) to achieve socio-ecological goals. At the same time, the statist environmental and social responsibility will be controlled by constitutional rights, that is by the increased power of judges, as well as by an active legislative sovereign. The challenge for green republicanism will be to enhance the democratic life, 'breaking, by doing so, with the tradition of coercive, highly centralised and unreflexive governments understood as bureaucratic centres of disciplinary power' (Eckersley, 2004: 86). But at the same time, the republican state will need a sufficient amount of power to counter the drifts and short-term visions of opinion-based regimes and to protect the common good now and for the future. The green constitution gives the key, that is the judicial power which frames ordinary rules and political decisions. Central elements of the new ecological and social contract are, on the one hand, the 'proactive state", that is an empowered state which actively works on social and ecological priorities. On the other hand, a key element is a new democratic empowerment of the people offering citizens the possibility of more extensive and active participation in the decision-making processes. Of course, states alone cannot make the change. This is why, like Marxist-Leninist socialists founded a Proletarian internationalism, seeing their fight as being part of a global issue, green republicans must unify across the borders and try to implement their

reformist revolution at the global level[258]. Trade unions, environmental movements, political parties, spiritual and religious congregations, organisations, associations, etc. interested in the future of the planet could also join. If 'the glamorous party of the Anthropocene' is over (see Prelude), the green republican movement (or 'movement of the movements') is just starting. No excess within sight but instead, care, compassion, decency, civility, solidarity, and community. Robots and cyborgs are not allowed. Living non-human animals, yes. No need for tickets.

[258] We can already witness in Europe and United states, the presence of political personalities embodying the republican resistance to neoliberalism: Jeremy Corbyn in the U.K., Jean Luc Mélenchon in France, or Bernie Sanders in the United States. This thesis claims an affiliation to their ideas and influence.

Chapter 7

Conclusion

I am. We are.
That is enough. Now we have to begin. Life has been put in our hands.
— (Bloch 2000:1)

7.1. Summary of the chapters

The modern era has been characterized by its stress on human autonomy and domination over nature, and by its faith in science and technology, considered as the primary drivers of progress and change. For almost 40 years, the conventional way to address the ecological predicament has followed the modernist 'management' programme driven by the engine of science, whether through abstract orthodox economics, techno-scientific expertise or social engineering. This way to cope with a problem by using the same means that created it is doomed to failure and might entail dramatic consequences. The recent concept of Anthropocene forms part of this logic: it celebrates the 'heroic' age of human as a new era synonymous with human's ability to modify its destiny, through for instance large scale-technologies such as climate engineering. Contrary to that view, Chapters 2 and 3 have opposed the dominant naïve and Promethean arrogance of those who pretend to overcome nature or to replace its processes by technological means and artificial capital. It has shown that this hypermodern belief is especially held by those who promote the neoliberal consensus, the pursuit of Business-as-usual scenarios, and 'growth for growth'

strategies where capitalist needs for new markets are fulfilled. In other terms, the supporters of the positive version of the Anthropocene propose the same management politics that have been led since four decades to fuel further extraction and capitalistic exploitation of the planet, human and non-human beings. This thesis has particularly opposed the neoliberal version of the 'good Anthropocene' (Chapter 2) and the belief that science and technology associated with economic management can solve the problems they have created. On the contrary, it has been argued that complex scientific theories push us to acknowledge scientific uncertainties and our structurally limited knowledge, forcing us, therefore, to adopt prudential behaviours in the face of complex retroaction loops that are patently beyond our power (Chapters 2 & 3). It has shown that the continuation of neoliberal politics to address the ecological crisis will deepen the predicament and increase inequalities as well as cause greater social and ecological injustice (Section 2.4). Rather than being an opportunity to celebrate the power of humans, the Anthropocene should, on the contrary, be regarded as an era of fragility, vulnerability, 'known unknowns' but also 'unknown unknowns' (that is things we do not know that we do not know), and imminent disasters. Chapter 3 has particularly demonstrated that rather than the 'end of nature', the Anthropocene signifies the 'return of nature' under the form of natural catastrophes, resource scarcity, loss of biodiversity, and endangerment of human and non-human species. In this perspective, the Anthropocene is a synonym for the global ecological crisis or the risk put on all living beings on this planet by the neoliberal hubris of the Global North. These chapters have also shown that the politics implemented in the name of the Anthropocene ('neoliberal Anthropocene') are anti-democratic, technocratic and autocratic. However, it has demonstrated that the technical dimension of the answers given to ecological problems by neo-greens (the purported negation of politics) is actually highly-political and aims at using the ecological crisis as a politics of emergency for further neoliberal adaptation. Lastly, these chapters have criticised the way Anthropocene boosters (ecomodernists,

techno-postmoderns, and some ESS scientists) try to conceal the historical responsibilities of Western countries and more particularly of capitalist development by designating the undifferentiated 'Anthropos' as the main agent of the Anthropocene. This is why this work has favoured the appellation 'Capitalocene' to define the period in which we find ourselves.

The occultation of history, typical of totalitarian regimes, the un-reflexive praising of technology as a *panacea*, and the rejection of democratic processes show that the enlightenment ideals have been lost along the way of modernity and have turned, in the neoliberal age of 'unreasonable rationality', into their exact opposite. Against this authoritarian and technocratic drift, this thesis has offered elements of a new ecological civilisational order based on a post-anthropocentric ethics (Chapter 4), a post-growth/degrowth economics (Chapter 5), and post-liberal green republican institutions (Chapter 6). It has argued that Green republicanism is a political theory adapted to 'turbulent times'[259], that is times of acknowledged fragility and vulnerability of the human and non-human species, times of limits which do not call for a rebellion against finitude but for its acceptation through a new social and political imaginary attentive to bio-physical limitations and life-affirming processes. The new global narrative this work offers sharply contrasts with the dominant consumer and individualistic capitalist culture, its free-market environmentalism, techno-scientific illusion of mastery, abstract liberal unencumbered conception of humans, and liquidation of cultural and biological diversity. It praises, on the contrary, a realistic (or concrete) green and social utopia, that is the achievement of 'a 'low-carbon', low resource-use but 'high well-being' society' (Barry, 2012: 19) that will allow people to flourish in many various ways in the frame of sustainable standards. On the contrary to liberal governments which do not do what they know to be right, the green republican democracy will implement the most-needed transition to sustainability by

[259] Barry (2012) has cast green politics in terms of 'thinking in turbulent times'.

empowering and re-skilling people for individual and collective action (developing a green civil society), local resilient intervention, and innovative social approaches.

To implement the transition towards a sustainable society respectful of non-human nature and beings, green republicanism clearly advocates the cultivation and exercise of green virtues (care, compassion, humility, temperance, respect, etc.) and ecological citizenship. To achieve the transition towards low carbon-economies, it relies on the development of a new green economy which operates within ecological limits, and focuses on the needs for state policies to trigger a civilisational change towards frugality, solidarity, environmental consciousness, attentiveness (ecological responsibility), a culture of obligation towards the most vulnerable (non-humans and future generations included), and greater democratic participation. It therefore strongly opposes the proponents of 'green growth' (insofar as the conflict between economic growth and decarbonisation is insolvable), as well as the new forms eco-modernisation has taken under the names of ecomodernism, eco-pragmatism or post-environmentalism.

In seeking to achieve its objectives, green republicanism plans to build on all forms of existing resistance to the capitalist and neoliberal order: from Occupy, Indigenous, Transition Town and slow movements, to Chiapas resistance, permaculture, creative arts, spiritual congregations, etc. (cf. Appendix C). With them, green republicanism tries to reconnect with 'concrete utopianism', imagination, creativity, and social resistance against destroying and deceiving processes which are enslaving humans' lives, destroying non-humans, and mortgaging the future, under the Orwellian concepts of (non)'progress', (non)'freedom', and (un)'happiness'. As already said in this work, green republicans will not make an undemocratic political 'coup'. Therefore, a certain dose of conviction, hope (avoidance of despair), courage, and perseverance is needed on the side of those men and women of good will – or

'possibilists'[260] – who refuse the status quo and seek to create radical changes in order to avoid the impending collapse of the ecological conditions which have allowed human civilisations, but also life to prosper and flourish.

7.2. **Future Research Agenda**

In view of format constraints, some issues could not be developed in the frame of this thesis. For instance, the issue of green virtue ethics could not be further elaborated although it is a theme of great significance for the green republicanism defended in this thesis. This subject deserves careful attention although it is still underdeveloped in environmental ethics and politics. Indeed, as Sandler says, '[a]lthough work on environmental virtue has become increasingly visible in recent years, environmental virtue remains a relatively underappreciated and underdeveloped aspect of environmental ethics' (Sandler and Cafaro, 2005: 12). However, as Treanor says, 'any ethics lacking an account of character and virtue is incomplete' (2014: 40). In effect, there is little chance that the deep crises our societies are facing can be addressed without engaging in normative discussions over cultural values, for instance over what drives the material over-consumption of the planet and what values are needed to reverse the current ecocidal course of things. The focus on human ecological virtue is not in itself a political programme but a catalyst for re-shaping the way we think and act in a sustainable way. As Hulme (2014), Barry (2012), and Curry (2011) show, the exercise of virtue can have political effects by allowing the creation of a green civil society involved in the defence of natural environments. The cultivation of personal habits and the subsequent changes in the value-systems and way of living of individuals can, indeed, transform the whole community and

[260] Maxwell Alan Lerner (1902- 1992), an American journalist and educator famously said: 'I am neither an optimist nor pessimist, but a possibilist'. For Ken Jones, living beyond optimism and pessimism means to be a 'patient and clear-sighted possibilist' (1993: 190). Hope must not be confused with optimism – see Vaclav Havel's poem on Hope [Online] http://www.traumaministry.org/resources/havel-on-hope

contribute to the revival of public deliberation and democratic political life. Green virtue ethics is, therefore, intimately linked to the crucial concept of 'green citizenship'. The development of green virtue (and the ecological education it is associated with) is an essential trigger for recomposing forms of subjectivity and identity that support sustainable ways of living. Instead of developing abstract views on social and moral duties, virtue ethics directly derives from the concrete social and ecological realities the commitments needed to build resilient communities (see MacIntyre 1999, 2011). Green virtue is, in this regard, a fundamental ethical and political component of a political theorising concerned with the real world applicability of whatever prescriptions it suggests as is green republicanism.

Another theme that would deserve further investigation is the relationship between the tradition of civic republicanism and that of green republicanism. Curry (2000) and Barry (2012) are among the few green thinkers who see affinities between civic republicanism and green politics. For Barry (2012), there are large areas of overlap between the two theories that include: enhancing the consideration of vulnerability and precariousness of human condition; addressing economic and political inequalities within societies; envisioning the end of politics as the realisation of the public good; bringing politics out of the state (and the party political system) into the public domain; being attentive to the 'contingent, historical, and ecological conditions and limits within which flourishing [and resilient] human societies are possible' (p.219), etc. For Curry (2011), '[i]t is fascinating to the extent to which the perspective derived from civic republicanism is amenable to an ecological interpretation and expansion' (p.1067). Because the (biotic and abiotic) ecosystem integrity is a prerequisite for the existence of any human society, or in other words, because social relationships depend on ecological ones, Curry considers civic virtue as 'a subset' of ecological virtue. Ecological republicanism can help redefine the concept of community in a more encompassing way that integrates the connections humans have with all living beings (and the abiotic elements associated with life in

general). This is what he calls an 'ecological concept of community'. Under this view, the goal of an active citizenship lies in the defence of the whole (the natural world) in order to allow the part (human societies) to flourish. It means defending non-human nature against its destruction and appropriation by private interests, which constitutes an attack on the common good and an act of corruption. The protection of ecosystems becomes, in the line of civic republicanism, the securitisation of non-domination understood as the freedom to realise one's own potential (Pettit, 1997). Civic republican tradition has always attached great importance to places, living communities, and the 'flesh' of embodied lives. In keeping up with this idea, green republicanism does not hold one universal 'regime of truth', one unique model of sustainability or economic life that could be applied blindly to each and every human community. Indeed, as Barry (2012) shows, green republicanism, in the line of MacIntyre's communitarianism, has a particular concern for particularity, context, localism, and pluralism (p.225) and thus escapes liberal abstract disembedded and disembodied blueprints.

Another area of research that needs further development is the definition of a republican postmodernity, an issue that has just been outlined in Appendix A. This topic raises several questions: for instance, 'what type of relationship to science should be implemented in the context of a new contract with nature, given the fact that green republicanism, and political ecology in general, do not advocate a return to pre-scientific and magical thought?' 'How to combine science and technology with an ethical relation to nature?' The theorising of a new ecological postmodernity overcoming the pitfalls of modern conceptions would need to be further addressed. Insofar as this thesis has dealt with normative ethical thinking and political philosophy, it has not deepened issues of applied institutional politics such as the one of republican institutions whose precise sketching could be subject to another investigation work. Another issue which deserves careful attention is the part that counter-cultural/and localised movements such as grassroots, ecofeminist, indigenous, peace and labour associations (trade unions, cooperatives of workers,

etc.), which offer transformative narratives, could play in the transition away from unsustainability. The rise of 'ecohumanities' (Curry, 2010; Rose and Robin, 2004), a discipline which reconciles humanism and ecology, acknowledging both the ideal of freedom carried by humanities and the agency of the more-than-human nature would also deserve a special consideration. Indeed, one of the central research agenda themes revolving around the notion of Anthropocene is the need for new interdisciplinary synthesis between natural and social sciences, and humanities. As Rose and Robin (2004) say, our academic division between arts and sciences repeats the modernist divide between nature and culture and is part of the ecological problem we are facing, that is the way we see/think (about) nature as separate from culture or *only* as a part of culture. This poses the problem of how to connect research traditions from different disciplines and foster the dialogue between them, that is how to overcome epistemological and methodological disagreements, language gaps, and disciplinary limitations. The Anthropocene is, indeed, a scientific diagnosis but also a prospective and historical narrative about the conception of human progress and relationship to nature that requires more collaboration between hard natural sciences and social sciences. This thesis has paved the way for such a dialogue that still deserves greater scrutiny. Lastly, and as this work has evidenced, the way out of the connected crises we are today facing will require a synergy and alliance of progressive forces and movements that aim at generating more sustainable societies. The new energy and purpose needed will arise, as analysed in this work, from various horizons: from a re-enlightened green civil society, citizens' initiatives, locally-led movements, progressive political parties, etc. It is our contention that the most promising place to gather all the alternative visions and practices for a more 'sustainable' world is the green republican theory contended in this thesis, that is a philosophical, political economy and political model that could strategically and timely build a 'movement of movements' around the ideas developed here as well as in other green republican research works. This meta-movement is still to be theoretically and practically built.

It waits for academics, political activists, citizens, and all men and women of goodwill to seize the opportunity opened by the greening of civic republicanism to overcome the threats to democracy, subjectivities/identities and the natural world entailed by neoliberal policies, and pursue the fight for the creation of an ecological civilisation.

7.3. Final words: the need for a counter-Anthropocene narrative

> Life is too precious a thing
> to permit its devaluation by living pointlessly, emptily,
> without meaning, without love, and, finally, without hope.
> –Vaclav Havel

The goal of this dissertation was to show that the future of humanity can only be sustained by significant cultural, social, moral (i.e. anthropological) and institutional transformations. The Anthropocene 'dominant narrative', i.e. the 'good Anthropocene' given by dominant ESS and post-environmentalists fails to recognise the predicament in which we are and the fact that the new 'geology of humankind' is not so much the era of *human domination, on earth* but rather the era of *human destruction of earth*. This work has demonstrated that the concept of Anthropocene and the imprecise metahistory led by a collective subject (the '*Anthopos*') it proposes are failing to capture the influence of the systems of domination that have contributed and still contribute to the ecological hardships around the world. Due to the lack of recognition of these forces (economic neo-colonisation, capitalistic expansion, etc.), the dominant Anthropocene narrative does not truly identify the roots of ecological problems and cannot, therefore, offer the solutions needed. The tendency to value artificial capital over nature and to see technology as the way to compensate for the loss of natural mechanisms, typical of pre-reflexive modernity outlooks, is the main approach suggested by Anthropocene boosters, political and economic elites, and ecomodernists. Therefore, the concept of Anthropocene is itself a part of the

problem it purports to address: it encourages the continuation of the anthropocentric, imperialist, and narcissistic culture that led us to the current ecological crises. It is a misleading concept that makes us believe that while we are transforming (read: killing, destroying) the planet, we are at the same time 'controlling' and 'mastering' it, improving, healing and making it 'better'. It is also a naturalising and ideological notion that normalises the murdering of the non-human world by a dominant culture (and class), namely the wealthy part of the Westernised world, which includes all members of the 'transnational capitalist class' (Sklair, 2000), also existing in the global South.

By implying that the ecological crisis is part of the evolutionary story of humanity and is caused by the undifferentiated 'Anthropos', the Anthropocene storyline relieves Westernised elites and peoples mainly responsible for the destruction and loss of the natural world, from guilt and responsibility. For the ecofeminist Chris Cuomo who inaugurated a petition to 'reject the official Anthropocene', '[t]he term "Anthropocene" masks the work of capitalism, colonialism and other systems of domination in creating climate change and current global ecological hardships. It, therefore, misidentifies the problem, and misdirects attempts to address it[261]'. In brief, this thesis has critically opposed the 'good Anthropocene' concept, which has been hastily adopted by some academics, journalists, and politicians before its scientific validation, insofar as it perpetuates the Westernised technoscientific and apolitical approach toward environmental issues in order to maintain or reassert a Eurocentric technological, economic, and cultural domination on the rest of the planet. Rather than a neutral, natural story, the Anthropocene, as shown in this thesis, is rather the history of capital accumulation, privileged resource consumption, dispossession and unequally experienced and

[261] [Online] https://petitions.moveon.org/sign/against-the-official-2

distributed environmental pressures. The Anthropocene has been, therefore, recast, following Moore, in this thesis as 'capitalocene' (Moore, 2016).

This work has offered a comprehensive blueprint of some of the most-needed changes that must be implemented in the cultural, moral, economic and political fields if we want to redress the ecological but also socio-economic predicament. Instead of a perspective focused on scientific, technological practices and 'resource efficiency' discourses, humanity should turn toward a prudential type of reasoning about what is conducive to the good life based around human flourishing as opposed to capital or consumer accumulation. Reorganising economy, politics, and society will begin with a change of attitude. In place of a system that promises wealth for its individual successful members ('winners') and social and psychological misery for the others ('losers') as well as social atomism and individualism, the thesis has argued in favour of a green republicanism that grants economic, social, and ecological security to all citizens (and also does so without unnecessarily compromising the ecological and resource conditions for non-human flourishing). In lieu of a conception of progress understood as continuous linear and techno-scientific based development, it has made a case for social innovations that promote more justice, sharing, conviviality, and flourishing. Instead of growth-based economics implemented in order to enrich the rich and fulfil limitless and created material wants, it has supported a degrowth/post-growth agenda (that is a downshifting paradigm) that counters neoliberal values such as consumerism, accumulation of profit, competition, etc. to bring to the fore more meaningful ways of living adapted to the current ecological overshoot, such as voluntary simplicity (Section 5.4).

In place of consumer and markets' freedoms that favour individualistic, a-politic, and predatory ways of living which put the democratic life at risk, this thesis has evidenced the necessity to focus on active citizenship and democratic participation in the making of collective decisions. Indeed, the neoliberal consumer dream for individuals has turned into the decline of commons for the whole, and calls, therefore, for renewed political institutions that preserve the public good and

reassess what constitutes a good life in the framework of a limited planet. This cornucopian dream is a dream for a few privileged humans and has resulted in a nightmare for a majority of the human family and more than human others. A new system must urgently take place that will be conducted by ideals of living together, sharing, caring, and protecting the social and natural components of life. The ecological predicament forces us to appreciate humanity's position as just one part of a complex set of systems, as 'plain members' (Leopold, 1947) of natural and social communities on which humans depend to survive and thrive and which are the result of long-term processes (physical processes as well as traditions). The new ecological civilisation will consider all living beings as an interdependent community of members led by the same history, which is the history of planet Earth, and support the flourishing of non-human and human life (post-anthropocentrism).

The achievement of such a paradigm shift requires that ethics, politics and economics are put together in a new synthesis named here after John Barry, 'Green republicanism'. The green republicanism advocated in this thesis is, like ecologism in general, a 'transformative ideology': it intends to transform people, the way they think and relate to each other's as well as to the non-human world, in order to make them become virtuous and responsible citizens of an ecological civilisation. Insofar as this thesis presents elements to safeguard, protect and restore the natural world as well as traditions of solidarity and wisdom today attacked by an ecocidal, biophobic, and uprooting ideology, it can be considered as 'emancipatory conservative' if that means the necessity to preserve and recover elements of the present and the past that one might judge 'valuable'. As Scruton (2008) says, conservatism means above all conservation and the need to preserve 'the partnership between the dead, the living and the unborn' (p. 706). This work even contends that conservation, in a time of constant technical innovation and permanent reshaping of human life according to market needs, is a revolutionary act of resistance.

Following a concept (still to be developed) of ecological communitarianism, this thesis has contended that ecosystems are essential to the flourishing of all forms of life and that they carry, therefore, a sacred dimension which requires *respect* and *moderation*, instead of management and unlimited exploitation. Humanity is indeed, today, facing one of the most crucial choices in its evolutionary history: to live in a uniformed, impoverished and dying world, or to embrace downscaling, degrowth and/or steady-state economies, and voluntary simplicity. Green republicanism is not consistent with the ideal of hyper-consumption of the Western world, as it is not compatible with an uncontrolled growth of human population on a limited planet. Green republicanism regime aims at democratically reaching what Daly calls 'the biocentric optimum', that is a level of activity consistent with abundant human and nonhuman life and needs. This requires, as a fundamental component of green republican environmental justice, to redistribute the material wealth of affluent countries to poor territories or, in other words, degrowing in rich nations to allow others to grow. This entails also redesigning developed economies away from high consumption, waste, socially and ecologically damaging jobs, and destructive productions (that follow the unsustainable capitalist dogma of 'destructive creation'). This change will require new national and global institutions able to curb and redirect the present emphasis on individuals and corporate liberalism towards post-liberal, post-growth and post-anthropocentric purposes. Only a revival of our encompassing model of politics (understood as the organisation of life in the *civis*) will bring into being a flourishing Earth with its human and non-human components and avoid the impending deterioration of the conditions of life on the planet.

The condition allowing these changes to happen is the creation of a new narrative that gives a new (or revives an old) meaning to (of) human existence on earth. This new storyline should, like in traditional spiritual wisdom and knowledge, transport a message of love and hope. The Australian earth scientist, Tim Flannery, closes his 2011 book *Here on Earth: A New Beginning* with these words 'if we do not strive to love one another, and to love our planet as much as we love ourselves, then

no further progress is possible here on Earth' (p.281). Indeed, the responses to the challenges we are facing do not lie in striving for more techno-scientific innovations, more material affluence or more economic growth but rather striving for more love. This could, indeed, be the only way to win the battle for hearts and minds, and heal the wounds that have been inflicted for too long on the human and more than human world. As the mathematician and Nobel Prize winner John Forbes Nash Jr. said '[i]t is only in the mysterious equations of love that any logic or reasons can be found'… as well as any meaning in life.

APPENDIX A: A COMPARISON OF CONCEPTIONS

A COMPARISON OF CONCEPTIONS BETWEEN MODERNITY, CURRENT POSTMODERNITY AND GREEN REPUBLICAN POSTMODERNITY

Source: Fremaux (2017) Doctoral Thesis

A comparison of Conceptions of *Modernity* (M) and *reflexive modernity* (RM), *Current Postmodernity* (CP) – including Techno-postmodernism (TP) and Ecological Postmodernism (EP)– and *Green Republican Postmodernity* (GRP)- Work in Progress

Some sections are not or insufficiently filled and need to be further researched

	M & RM	CP (TP & EP)	GRP
Ontology/Ethic	**(M)** Arrogant anthropocentrism (speciesism); Metaphysical anthropocentrism; social and religious foundationalism (Christianity); essentialism; separation from nature (nature/culture dualism); resourcist and instrumental conception of nature; "mastery of nature" narrative; hubris (denial of limits); colonialism/neo-colonialism; no ethical value granted to the non-human nature ; a superior ethical value given to Western-people; no environmental justice (except in the declarations of intent); some criteria for social justice (welfare state) that are currently under assault	**(TP)** Arrogant anthropocentrism; postnature narrative; nonessentialism; constructivism; blurring of frontiers between humans and machines (post/and transhumanism); hubris (denial of limits); move away from nature; dualism dissolved in socio-techno-hybrids ("techno-nature"); "construction of nature" narrative; worth noticing, some techno-moderns acknowledge the agency of 'something' that escapes human agency under the equivocal and not elucidated term of "Gaia"; no ethical value granted to non-human nature; superior ethical value given to Western-people; no social and environmental justice	Weak Anthropocentrism/ Weak Ecocentrism (Earth Jurisprudence); metaethical anthropocentrism; argues for the reconnection of humans with nature, and for developing non instrumental (including spiritual) relationships with nature; fosters an ethic of the "good use" of nature and "non-use" of nature; human interests do not automatically or always 'trump' nonhuman interests; fosters non-instrumental and non-material relationships with nature; argues for an ethic of virtues, strong commitment for social and environmental, intergenerational justice; political foundationalism
	—	**(EP)** Foundationalism based in nature; ecocentrism; bio-egalitarianism; nonessentialism; deep and dark ecology; radical ecology; ecofeminism; blurring of frontiers between humans and nonhumans; no more centrality granted to humans; strong commitment for environmental justice; nature seen as motherhood	
Epistemology	**(M)** Universal truth; rational foundationalism; Epistemological anthropocentrism; objectivity; position of knowledge ('we know'); systematic knowledge,	**(TP)** Universal truth given by experts; position knowledge; no democratic conception of truth; EES; complex (non-linear) system sciences	Possibility to claim valid truths (scientific community); Epistemological anthropocentrism; ontological and realist

	reductionist and determinist (linear) model of science		turn (consistent with sciences); modesty (we know that we do not know a lot, but enough to be cautious); precautionary principle; complex and post-normal system sciences
	(RM) we know that we do not know everything (limited knowledge)	**(EP)** No foundationalism (Nietzscheism); argues for the relativity and contextually of truth (epistemological relativism); complex system sciences (?)	
Anthropology/culture	**(M)** Teleology of progress; ethnocentrism; Progress conceived of as technological progress; Humanism based on the exclusion of others (colonialism, modernity vs Ics??, aboriginal and traditional societies); atomism; individualism; consumerism; Materialism; competition; dissatisfaction (loss of community links, loss of the connection with nature, high levels of frustration, stress and psychosomatic diseases); consumer freedom; market society (which encompasses all aspects of life, from cultural to family life)	**(TP)** Teleology of progress; Western-centrism; techno-optimism (promotion of geoengineering, Nanotechnology, Biotechnology, Information technology-NBIC revolution), denial of other cultures' interests and particularities; Manhattan scenario (cynicism); satisfaction for a very few; posthumanism (humans must evolve toward the machine paradigm); freedom for a very few **(EP)** No teleology of progress; focus on non-Western cultures, premodern tribal peoples, and counter cultural movements (wisdom traditions); communities; places; embodiment; cultural pluralism; human nature dissolved in the continuum between humans and non-humans; (spiritual, contemplative, satisfactions); reconnection with nature; posthumanism (humans must re-root themselves in nature); wilderness experience; can ignore humanism (misanthropy, anti-humanism and reactionary potential -anti-modernity) or claim that ecocentrism is a form of humanism (social ecology, ecofeminism); focuses on the freedom of the more than human; self-realisation for all beings	No teleology but radical hope; Progress conceived of as social innovations. Technical progress is at the service of the normative transformation of societies (soft and human-scale technologies); cultural pluralism; relational and cooperative model of society; fosters virtues such as compassion, solidarity, justice, and caring; voluntary simplicity and flourishing; ecological humanism; political freedom
Economics	**(M)** Productivism (Marxism and liberal capitalism); economic liberalism ("invisible hand"); Undifferentiated growth-based industrial	**(TP)** capitalist global economy; undifferentiated growth; markets; market-innovations; relative scarcity (for the very few) and real	Post-scarcity system; planning; State regulation; post-growth/degrowth societies; post-

	societies; capitalist global economy; Western imperialism (colonisation and neocolonisation); concentration of wealth under the process of capitalist production; hegemony of deregulated markets; neoliberalism; relative scarcity and real scarcity (especially for the non-Western world but also for the poorest of the modern societies)	scarcity (for the majority of the world - cf. nature depletion)	industrialism; post-(neo)liberalism; post-capitalism (regulated markets); statism; societies and economies are "embedded" in nature; relative abundance , while the state is important GRP talks about democratised states and relocalising economies, which means less state regulation as well
	(RM) Post-capitalism (Beck); capitalism (Lash, Giddens)	**(EP)** anti-capitalist/post-capitalist; domestic economy; rurality; societies and economies are "embedded" in nature	
Politics	**(M)** Emancipatory orientations (through education and enlightenment) today under neoliberal assault; collusion between economic, media, and political elites; Liberal bourgeois institutions; Schumpeter's and Lipmann's conception of democracy (representative democracy administered by the elite); no controversy over growth or economic orientations; no alternative envisioned (no political pluralism); rise of fascism as a reaction to the loss of political agency (rejection of the political and economic elites by the "masses")	**(TP)** Techno-capitalistic governance (scientific experts); democracy must come into the science; logic of domination; exclusion of humans' limitations linked to the body and place (femaleness, emotions, communities, death, vulnerability); superpower syndrome; no controversy; no alternative envisioned (no pluralism); risk of techno "green" authoritarianism;	Emancipatory orientations (through education — paideia —, and enlightenment); deliberative and participatory democracy; constitutionalism; republican post-liberal state; anti-patriarchal social relations; hierarchy of norms and powers; active citizenship, agonistic democracy; importance of civil society; decentralisation; civic virtues
	(RM) Third way (Giddens and Lash); lack of normative implications (descriptive theory); reformist environmentalism (no basic alteration in modernity's instrumentalist view of nature)	**(EP)** Political pluralism; decentralisation (bioregions and eco-communities); participative democracy; radical democracy; left-wing anarchism (self-empowered communities); anti-statism (or strong suspicion towards the state power); anti-oppressive, anti-hierarchical and anti-patriarchal social relations; human and non-human freedom	

Ecology	**(M)** Creation of risks, ecological catastrophes, unsustainability; nuclear power; resources used at a rate that exceeds earth's capacities to regenerate them; unsustainable use of resources and production of wastes; crossing of some planetary boundaries; insufficient investments in green technologies and renewable energies; no barrier to the appropriation and exploitation of the non-human world (loss of the sacred)	**(TP)** Creation of higher risks to solve the former risks; disappearance of the wild; nature seen as a "managed garden"; no protection of nature (postnature); rapid degradation of the current predicament; use of large-scale technologies to face the emergency; nuclear power; increasing number of ecological catastrophes; drop in the human population (although techno-postmoderns mostly make a case for demographic growth)	against the resourcist mind-set; ecological communities; incentives to limit human population growth; strong commitment to the preservation, protection and restoration of the non-human nature (constitutionally protected), 'rewilding' of the world in places as well
	(RM) Precautionary principle (Beck); perceived risks (Giddens)-no fundamental change	**(EP)** Argues for the reconnection of humans with nature; also argues for seeing nature as "sacred"; against the resourcist mind-set; ecological communities	

APPENDIX B: THE 'EARTH SYSTEM' AND THE 'ANTHROPOCENE'

Box 1.
Global Change and the Earth System

The term *Earth System* refers to the suite of interacting physical, chemical and biological global-scale cycles and energy fluxes that provide the life-support system for life at the surface of the planet (1). This definition of the Earth System goes well beyond the notion that the geophysical processes encompassing the Earth's two great fluids—the ocean and the atmosphere—generate the planetary life-support system on their own. In our definition biological/ecological processes are an integral part of the functioning of the Earth System and not merely the recipient of changes in the coupled ocean-atmosphere part of the system. A second critical feature is that forcings and feedbacks *within* the Earth System are as important as external drivers of change, such as the flux of energy from the sun. Finally, the Earth System includes humans, our societies, and our activities; thus, humans are not an outside force perturbing an otherwise natural system but rather an integral and interacting part of the Earth System itself.

We use the term *global change* to mean both the biophysical and the socioeconomic changes that are altering the structure and the functioning of the Earth System. Global change includes alterations in a wide range of global-scale phenomena: land use and land cover, urbanisation, globalisation, coastal ecosystems, atmospheric composition, riverine flow, nitrogen cycle, carbon cycle, physical climate, marine food chains, biological diversity, population, economy, resource use, energy, transport, communication, and so on. Interactions and linkages between the various changes listed above are also part of global change and are just as important as the individual changes themselves. Many components of global change do not occur in linear fashion but rather show strong nonlinearities.

Box 2.
The Anthropocene

Holocene ("Recent Whole") is the name given to the postglacial geological epoch of the past ten to twelve thousand years as agreed upon by the International Geological Congress in Bologna in 1885 (3). During the Holocene, accelerating in the industrial period, humankind's activities became a growing geological and morphological force, as recognised early by a number of scientists. Thus, in 1864, Marsh published a book with the title "Man and Nature," more recently reprinted as "The Earth as Modified by Human Action" (4). Stoppani in 1873 rated human activities as a "new telluric force which in power and universality may be compared to the greater forces of earth" (quoted from Clark [5]). Stoppani already spoke of the anthropozoic era. Humankind has now inhabited or visited all places on Earth; he has even set foot on the moon. The great Russian geologist and biologist Vernadsky (6) in 1926 recognized the increasing power of humankind in the environment with the following excerpt "... the direction in which the processes of evolution must proceed, namely towards increasing consciousness and thought, and forms having greater and greater influence on their surroundings." He, the French Jesuit priest P. Teilhard de Chardin and E. Le Roy in 1924 coined the term "noösphere," the world of thought, knowledge society, to mark the growing role played by humankind's brainpower and technological talents in shaping its own future and environment. A few years ago the term "Anthropocene" has been introduced by one of the authors (P.J.C.) (7) for the current geological epoch to emphasize the central role of humankind in geology and ecology. The impact of current human activities is projected to last over very long periods. For example, because of past and future anthropogenic emissions of CO_2, climate may depart significantly from natural behaviour over the next 50 000 years.

Source: Steffen, W. *et al.* (2011) 'Are Humans Now Overwhelming the Great Forces of Nature?' *AMBIO, Swedish Academy of Science*, Vol. 36, No. 8 (Dec., 2007), pp. 614-621, p. 615

APPENDIX C: GRASSROOTS INNOVATIONS & MOVEMENTS

Open Source Ecology; The voluntary simplicity movement; Slowfood movement; Ecovillage movement; Permaculture; Global Justice Movements (e.g. Pachamama Alliance, Earth First!, People's World Movement for Mother Earth, Indigenous Rights); The Long Now Foundation; Low carbon lifestyles (e.g. Carbon Reduction Action Groups, Low Carbon Communities Network, Forward the Revolution); Transition Towns; Contemporary spirituality (e.g. Integral Life, mindfulness); Cultural Creatives; The Great Transition Initiative; Dark Mountain Project; Earth Stewards Network; The Earth Charter Initiative; avaaz.org; tactical media (e.g. Creative Climate, culture jammers, the Church of Stop Shopping); sustainability art (e.g. Cape Farewell, 2020 – Arts and Climate Change Network, RSA Arts and Ecology Centre, Centre for Sustainable Practice in the Arts, Red Latinoamerica); education initiatives (e.g. Question Based Learning, Integral Science, Eco-literacy, popular education); 'sustainability knowledge hubs' (e.g. The Well, Whole Earth Catalog, World Changing, Labforculture.org).

Source: Graugaard (2014: 91)

APPENDIX D: THE 'POTENTIAL UNRAVELING OF CIVILIZATION-INTERCONNECTEDNESS OF WORLD PROBLEMS'

Source: Capra & Luisi (2014: 364)

APPENDIX E: THE ECOLOGICAL CEILING AND ITS INDICATORS OF OVERSHOOT

Earth-system pressure	Control Variable	Planetary boundary	Current value and trend	Current value as % of the planetary boundary
Climate change	Atmospheric carbon dioxide concentration, parts per million	At most 350ppm	400ppm and rising (worsening)	169%
Ocean acidification	Average saturation of aragonite (calcium carbonate) at the ocean surface, as a percentage of pre-industrial levels	at least 80% of pre-industrial saturation levels	~84% (worsening)	78%
Chemical pollution	No global control variable yet defined	-	-	-
Nitrogen & phosphorus loading	Phosphorus applied to land as fertilizer, millions of tons per year	at most 6.2 million tons per year	~14 million tons per year and rising (worsening)	229%
	Reactive nitrogen applied to land as fertilizer, millions of tons per year	at most 62 million tons per year	~150 million tons per year and rising (worsening)	217%
Freshwater withdrawals	Blue water consumption, cubic kilometres per year	at most 4000 km^3 per year	~2600 km^3 per year (intensifying)	61%
Land conversion	Area of forested land as a proportion of forest-covered land prior to human alteration	at least 75%	62% and shrinking (worsening)	152%
Biodiversity loss	Rate of species extinction per million species per year	at most 10	Around 100-1000 and rising (worsening)	1,000%
Air pollution	No global control variable yet defined	-	-	-
Ozone layer depletion	Concentration of ozone in the stratosphere, in Dobson Units	at least 275 DU	283 DU and rising (improving)	47%

Source: Steffen W, Richardson K, Rockström J, *et al.* 2015. All percentages are rounded to the nearest decimal

Figure 2.3: The Ecological Ceiling and its indicators of overshoot (Source: Steffen et al., 2015a).

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