

2. THE IMPORTANCE OF ANALYSING POLITICS IN THE ECONOMIC SPHERE.

Overshoot: de-growth or steady-state?

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This paper assumes that humanity is entering a transitory situation of overshoot, as a consequence of having exceeded the natural limits to growth. After that, it maintains that degrowth, a phase of economic and demographic contraction, must follow this transitory situation of overshoot, instead of theoretical alternatives as the steady state. Different visions of the degrowth period are then summarized.⁵³

1. Degrowth (foundations)

The degrowth notion is drawn from the perception that natural limits to growth have already been surpassed, that the planet's carrying capacity has either been reached or that we are so close that overshooting it is no longer avoidable. Thus, the inevitable establishment of a new balance at a sustainable scale will take place through a more or less prolonged phase of demographic and economic decline. Alternatively, even if the limits were not yet overshoot or if the overshooting point could be temporarily postponed by means of technological innovations or political changes, a planned and conscious degrowth would be desirable, for it would minimise the costs of the transition: the only alternative possible to an organised voluntary degrowth, one that would occur in the near future and would have lower costs, is a chaotic degrowth imposed by nature, further away in time but with tremendously huge costs.

Degrowth is a necessary perspective once demographic and economic expansion have been pushed to unsustainable limits. And that perspective has become more prominent in recent years precisely because the warning about the threats derived from the environment's degradation –raised quite some time ago– was not listened to. Over the past four decades, the answer to the warning was suspended over and over, always postponed to a later time, always the object of an uncertain future. The problem is that there are

⁵³ Some aspects of the conceptual framework for the research projects *Scientific-technical information, public participation and effects of sustainability in socioecological conflicts* (CSO2008-00291/SOCI), and *Transitions towards a post-carbon society: Redistributive impacts and everyday life in a context of non-fossil energies and climate change* (CSO2011-24275), both of them included at the Spanish National R+D Programme, are discussed here.

signs of the announced future already... we have already exceeded the planet's limits or we are about to inevitably overshoot them... more and more signs are there, in more detail and more mutually consistent.

Those that argue in this direction often rely on sources of information like the ones next:

- The review, thirty years later, of the report to the Club of Rome on the limits to growth, which underlines that the announcement made in the early 1970s (that the continuation of certain trends would result in an overshooting situation by the second decade of the 21st century) is now a matter of fact, even earlier than foreseen (Meadows *et al* 1972; Meadows *et al* 2004).

- Estimations of the world ecological footprint, according to which this footprint surpassed the regenerative capacity of the biosphere in 1985 and, ever since, it has continued being used up non-stop, having already exceeded the sustainable level by more than 20% (WWF 2010).

- The closeness of the “peak oil”: oil is used five times faster than new oil sites are discovered, the gap between the growing demand and the supply of new waning reserves increasing. The situation is now critical and we are very close to the start of an irreversible production drop (Deffeyes 2001; Campbell 2003). In addition, for the time being, no energy alternatives are yet able to maintain the current forms and dimensions of the industrial society, let alone its historic expansive tendency (and no guarantee can be offered that such alternatives will be found or that, if they are eventually found, they will be developed on time).

- The possibility that climate change may have already reached the point of non-return, this meaning that the deployment of non-linear changes would be totally uncontrollable (Pearce 2006; Gras 2007).

- The fact that the relationship between population, food production and fresh water supply has started to move within extremely tight margins (Smil 2003; Pimentel & Pimentel 2008).

- The huge risk levels associated to an out-of-control nuclear proliferation, to the long-term effects of the ‘chemical broth’ in which all the organisms on Earth are now ‘soaked’, and to certain development lines of genetic engineering (Séralini 2003) and nanotechnology.

The de-growth viewpoint is usually associated to the statement that the best available data on the link between the society's physical scale and the planet's recovery capacity, on the unavoidable dissipation of irreplaceable resources, on the condition of ecosystems, and on the flexibility to make up for mistakes (« sustainability »), show that we are already in an overshoot situation... we have gone beyond our limits (Garcia 2007). Or that such a situation is so imminent that it would be better to anticipate it in order to make its effects less unacceptable.

Theoretically, the foundations of de-growth are found in the bioeconomics of Georgescu-Roegen (1971) and the philosophy of Ivan Illich (2004, 2005), but de-growth also incorporates elements from the socio-historical and anthropological critique of development (Shiva 1989; Rist 1997), from post-development doctrines (Rahnema & Bawtree 1997) and from other sources. The de-growth perspective is characterised by insistence, on the one hand, on the fact that overshooting is unsustainable and, on the other, that it is therefore necessary to find answers, *outside development*, to social and political problems. This dual position has caused strong, open and persistent criticism of the concept of sustainable development, considering it theoretically contradictory and inconsistent (a lullaby with strong sleeping powers, as Georgescu-Roegen (1993) put it) and, from a practical viewpoint, a mere attempt to inject some credibility into the always deferred and consequently worn out promise of a universal economic development (Garcia 1995). As an example, *La décroissance*, the French magazine, has a regular section devoted to reporting the "nonsense" of sustainable development.

2. Why degrowth instead of zero-growth or steady-state?

Degrowth is not the only conceptual alternative to the productivist paradigm or the economic growth model. It is mostly coherent, however, with the assumption that the overshoot situation has already been reached. I'll discuss this point in relation to steady-state, *id est*, to a strong sustainability conceptual framework (*a fortiori*, a parallel discussion could be made with regards to any idea of sustainable development based on weak sustainability).

The idea of a *steady state* is not new in the history of social thought and, at least in the period of classical economics up to John Stuart Mill, it was the object of different discussions and elaborations. In modern ecological economics, it has been reintroduced and developed by Herman Daly. Daly (1991) described the steady state as a three-dimensional economy: stock (sociomass), throughput (metabolic flow) and service. Stock is the population of people and artefacts (it could also be said 'sociomass', an ugly term but one with sufficient graphic power and precision, sometimes used by Kenneth Boulding with exactly the same meaning: at the end of the day, the *stock* is nothing but the aggregate of everything that has a physical mass in society). Throughput is the metabolic flow of energy and materials that keeps the sociomass going (the human population needs food, water and new births to be maintained; the population of artefacts needs fuel, materials for repairs, and new artefacts to be used as spares for those that are worn or out of order...). Service is the immaterial flow of wellbeing (or, to put it simply, of staying alive) that the human population obtains as a result of the use of all that. Each dimension is aligned with an "economic policy criterion": the sociomass has to be kept constant at a sufficient level; the metabolic flow must be minimised thanks to growing eco-efficiency; the service must be maximised, initially without constraints, as it is an immaterial flow.

Daly formulated this idea in the first half of the 1970s, and he explicitly acknowledged a debt with two of his masters: Boulding and Georgescu-Roegen. At the time, the simple and elegant equations of the steady state offered a more sophisticated economic model, one that was more flexible and less rigid, for the zero-growth proposal launched by the MIT report for the Club of Rome (Meadows *et al* 1972). Years later, in the 1990s, Daly (1996) introduced the set of concepts and rules that had underpinned the steady state under a different, more ‘fashionable’ heading: sustainable development. Were steady state and sustainable development the same thing then? Isn't this too strange an assertion?

Indeed, things sounded so strange that it is not easy to find an explicit formulation of the thesis it necessarily results in: the steady state is the only feasible and consistent form of sustainable development. Yet, for any careful reader of Daly's texts it is evident that the shift of the steady state towards sustainable development had occurred without hardly any modifications. In my account, this shift moves along two lines. One is built from a conceptual distinction -more in line with Boulding (1995)- according to which growth is when a thing becomes bigger and development when a thing gets better. This differentiation allows us to describe improvement as development (obtaining more service) without increasing the physical scale (without growth); and this was precisely the logic of the 1970s steady state. The other one is derived from an apparently unproblematic assumption: since the service is an immaterial flow, it can be increased indefinitely, without any top limits. And the service notion in the economy of the steady state is not too far from that of economic value in the most conventional theories: it is true that its semantic field is broad and vague, half way between a generic idea of life enjoyment and a notion of wellbeing or, simply, of utility; but, whichever the case, through this point, steady state and development come together in harmony (at least in theoretical harmony). The efficient use of natural resources, i.e. eco-efficiency, would make an indefinite growth of the obtained service possible; in other words, the growth of the economic value; or, in other words, an indefinite continuation of economic growth without an increase in the physical scale; or, still in other words, more development without a radical reconstruction of the meaning of this term.

I think that we can now understand better the statement that a reconciliation between de-growth and steady state is fairly problematic. Let us remember a thesis summarizing the proposal for this reconciliation which has appeared in recent debates (for instance II International Conference on Economic Degrowth for Ecological Sustainability and Social Equity 2010): degrowth is the transition to a sustainable steady state. Then, if the steady state is interpreted -as argued by Daly- as sustainable development, we would come to the following presumably equivalent conclusion: “de-growth is the transition to sustainable development”. An ironic confusion after years of controversy! An in-depth and detailed discussion about the historic conflicts and disagreements between the two concepts is in order.

From the viewpoint of intellectual history, the comparison can at least be tracked down to the criticism raised by Georgescu-Roegen (1977) on the steady state concept. This critique was based on the assertion that the inevitable entropic degradation of materials (the irrevocable dissipation caused by the use -a phenomonic point raised by Georgescu-Roegen himself on the condition of a "fourth law of thermodynamics") made complete recycling impossible and, accordingly, also rendered impossible the indefinite extension of a steady state economy driven by renewable energy sources. And so, in the end, the steady state would also be unsustainable.

Although Georgescu-Roegen's criticism undermines the theoretical strength of the steady state to a certain extent, its impact has been rather limited. Surely because of the rather confusing scientific statute of the so-called "fourth law" (which, apparently, I would say, is a bad physical law but a good economic one, with all the endlessly conflictive implications that scientist dualisms of this nature entail). And also because the practical scope of this line of criticism is rather limited: the supporters of the steady state can always readjust their models in terms of quasi-sustainability, arguing that while an indefinite extension remains impossible, the deadlines can be long enough in historical terms.

Without denying the importance of discussions about the entropy of materials, I think that the de-growth/steady-state duality should also be explored along other lines in order to clarify, as much as possible, to what an extent both ideas are (or are not) compatible. These are some of those lines:

a) It is possible that the differences between underlying philosophical principles (pre-analytical, has said Bonaiuti (2010)) may have significant implications. For example, an assertion such as "nothing can grow indefinitely in a finite environment" (nothing *grows* forever) is at the basis of many of the arguments that advocate the need for zero growth, in particular of the reasoning behind the steady state. However, the general principle associated with concerns about the social effects of the law of entropy would be this other one: "nothing *lasts* forever". It is not particularly surprising that the discourse inspired by the second of these philosophies often have a more pessimistic and melancholic tone than those constructed from the first one. The sensitivity to the effects of exponential growth processes heightens the perception of the limits to the increase in scale. Thinking about the social consequences of the law of entropy causes us to perceive limits not only to the scale but also to the duration (I get the impression that, at this point, Daly followed Boulding's footsteps rather than Georgescu-Roegen's, his other master, and that carefully following this track might bring light to some aspects of an intellectual disagreement that is still dragging on).

b) In a way, the thesis that a de-growth process should lead to a socioeconomic situation more or less close to a steady state is trivial. All pre-industrial human societies have been steady-state societies, roughly speaking: societies in which the physical scale has changed fairly slowly, both as regards the population and the stocks of artefacts, in which magnitudes have been oscillating rather than constantly

rising, etc. But they are also societies in which technological, structural, cultural and even political changes have been relatively infrequent. Therefore, the thesis that the characteristic acceleration of industrial capitalism (and of the supposedly informational one) is linked to economic growth might be plausible. And that de-growth, consequently, must also entail deceleration. The old objection according to which the steady state is likely to be rather boring lies on sound foundations. (Of course, the objection is old, but not final. Comforting boredom may indeed be desirable, should it be possible. Basically, the point I want to make now is that the idea of a steady state seems to be associated with structural, institutional and cultural features which could hardly be described as "development": the suggestion according to which the steady state could be a state of rapid and continuous improvement without increasing physical magnitudes seems too abstract and, ultimately, lacks credibility from a historical and sociological point of view). What is slow develops slowly. Improvements in life by way of eco-efficiency are possible (and desirable), but it does not seem reasonable to expect them to be ultrafast, let alone inexhaustible.

c) It would be interesting to explore the relationship between growth and institutions, the question of what restrictions and conditions would be imposed by the stability of the physical scale upon social and cultural dynamics and organisational forms. In a first book on the contradictions of sustainable development (1995), I made a passing reference to the possibility of finding some analogies in biology, for example in the ideas of D'Arcy W. Thompson (1992) about the relationship between growth and form. However, it is more urgent and possibly more productive to delve into the non-linear dynamics of development in institutions (for instance, the effects of counter-productivity underlined by Illich (2004-2005)), and to give a boost to the old concerns about the optimum scale of cities and other structures of social life –a classic subject but one that has almost been dropped from modern social sciences. In trying to give contents to the proposals for controlled de-growth and a more or less stable situation, these issues – understandably marginalised in an era of rapid change impelled by markets and political adaptations implemented as we go along– become central again.

Let me use the previous points to make a general comment, as a conclusion to this section: We ought to be most cautious when proclaiming the intellectual reconciliation between de-growth and steady state! There are too many unanswered questions, too many unresolved issues, too much friction and too much distance between abstract formulas and sociological concretions... Little can be said beyond the assertion that upheaval in an era of very intense growth and subsequent de-growth will come to an end with a relatively stable historical phase. And the lines of differentiation, from the metaphysical postulates previous to the models to the options relative to technological change and specific organisational forms, are numerous and potentially important.

Putting an end to this digression on basic theory issues, I'm coming back to the degrowth issue.

3. Visions of degrowth

Of all the questions posed by a degrowth process that would lead to an environmentally sustainable and more or less stable state, the most striking issue is that regarding the point or level at which degrowth should stop. What should be the end point of a degrowth process? Should the end state involve population or consumption that is more modest and frugal than current levels but still within the range of standards known to industrial societies? Or should we go even further, to the stone age?

Naturally the problem (as are all the difficulties posed by this paper) has no real technical solution. The future states of a system as complex as society are not predictable. They depend, in a non-linear fashion, on interactions between multiple system states and multiple collective decisions taken by social actors. The dynamics are radically indeterministic. Still, the moral and political burden of the various initial positions is enormous. In effect the debate is configuring itself around two, already rather well-formed basic visions regarding the meaning of degrowth: *degrowth as a path towards extinction* and *degrowth as a transition to a society constructed at the human scale* (Martinez Iglesias & Garcia 2011).

The conviction that the historical cycle of ascending fossil fuel use is reaching its end along with a justified scepticism regarding the existence of alternative sources of energy that are sufficiently cheap and abundant lies at the heart of view that a population collapse on Earth is quite near and cannot be put off any longer. Other versions, such as that by Price (1995) also include a prediction that this collapse will represent the end of civilisation as we know it, not, as one might think, reaching a lower, more sustainable scale; for any survivors, should they exist, will not be able to maintain the complex association of cultural elements that characterise present societies. Societies still existing after the collapse would have to live a simpler life based on hunting and subsistence agriculture (as in the past and present). In many cases, some sociobiological ideas are also invoked here. For example, the thesis that evolution drives any population of organisms to reproduce limitlessly until it uses up the resources that have made its reproduction possible. Other views sustain that a combination of both perspectives, that derived from the decrease in the supply of fossil fuels (imposing a drastic reduction in population and complexity) and that derived from selective pressures existing in a context characterised by scarcity (which implies that the abovementioned reductions will take place via conflict and fight for survival) would mean that degrowth could take on a catastrophic and uncontrollable shape, leading to extinction —a path leading to the Olduvai Gorge, according to the comparison introduced by Duncan (2001, 2005-6).

The point of view of the extinction (die-off), that announces an inevitable and catastrophic collapse of the industrial society and discards the possibility of choosing a peaceful descent, usually depends on some kind of strong determinism, energetic or biological. The following fragment is very characteristic of this type of approaches:

- “(1) We are genetically driven just like any other animal. We have no mind other than the body, and we lack behavioral choice...;
- (2) Most environmental damage is the inevitable by-product of overpopulation and is a necessary part of the plague cycle;
- (3) The environmental problems we now face do not have a technological solution. All human activity—“good” and “bad”—adds to our environmental debt. The more technological the attempted solution, the greater our environmental debt...;
- (4) The plague cycle is a vital component of the evolutionary process and an essential evolutionary escape clause in the case of a fertile, high impact species like *Homo sapiens*” (Morrison 1999: 242).

Hanson (2001; 2007) has synthesized the basic arguments of this type of approach. His arguments refer to a particular reading of the basic principles of thermodynamics and the theory of evolution. The inescapable entropic degradation which it is the result of all productive activity, he states, implies that the concept of sustainability is theoretically consistent only if it means a continuous reduction of the whole energy requirement of the human species. Maximizing durability, then, implies less population, of human bodies as well as of artifacts (or in other words, maximum sustainability entails population so reduced as it is possible and so technologically modest as it is possible). The recognition of this condition was blocked because, as it maintained Morrison (1999), a genetically driven predisposition to inhibit self-knowledge with respect to the social issues, and to delude ourselves with false hopes about the reach of our actions, was positively selected in early phases of the human evolution in order to favor survival (and it is now a solid pre-programme of our behaviors). Hanson added to it that natural selection compels to violate social norms whenever it offers some adaptive advantages. As a consequence, the capitalist system—that obtains stability only through continuous expansion—is led towards a state of disorganization and chaos once the natural limits are reached. Like any other animal species, a transitory abundance takes humans to exceed the carrying capacity and, thus, to end up in anarchy and war, in an extremely painful collapse. In the author’s view, in its considerations on the laws of energy, Hanson took a reading that was not the only one that made sense. The practical recommendation that should be associated to the inescapable entropic degradation is not one of maximum diminution in population and the economy, but rather a criterion of parsimony and prudence, of avoiding extravagant consumption. The rationale for this criterion, relatively more moderate, is that maximum reduction of entropic degradation does not have to be an objective of the human action. Sustainability does not fit maximum physical scale nor minimum physical scale: a too small population with too primitive technology is also very vulnerable to environmental perturbations and, consequently, it is scarcely sustainable. Sustainability is rather associated to an intermediate scale, an intermediate value of the main variables, so that flexibility and the capacity of adaptation are optimized. On the other hand, there are good reasons to consider the predominance of *cultura* in social life as a true

emergent phenomenon, not as a simple cover for the operation of genetically determined programs (Ehrlich 2000). Jointly, intermediate scale and predominance of culture imply some possibilities of choosing, some margin to organize a controlled way-down, even being pessimistic, as I am, about the probability of this soft outcome.

The assumption of human freedom, and the progress of history through collective, conscious decisions, lies at the heart of opposing views which consider degrowth to be an opportunity to adapt societies to a more sustainable scale. Some of these proposals offer an explicit answer to why the continuity of growth is becoming counterproductive. It is the case of a book by Howard and Elisabeth Odum. Their argument, in synthesis, maintains that a cycle with four phases (growth, climax, descent, slow recovery of the resources previous to a new ascending phase) is common to ecosystems and civilizations. They add that the industrial society now lives its climax and that, therefore, descent is imminent and inescapable. That maintaining growth-phase policies beyond the climax, despite the fact that these policies (great scale, speed and competition) are well adapted to the ascending phase, leads to a deterioration in life conditions and, finally, replace the ordered descent by collapse. And that applying principles which are more suitable to a situation of limited resources (reduced scale, efficiency and cooperation) can do the decrease benign and compatible with the maintenance of a sufficient degree of wellbeing. Odum's utopia, then, is not apocalyptic at all, rather to the contrary: "Precedents from ecological systems suggest that the global society can turn down and descend prosperously, reducing assets, population, and unessential baggage while staying in balance with its environmental life support system. By retaining the information that is most important, a leaner society can reorganize itself and continue making progress" (Odum & Odum 2001: 3).

In most of the versions, peak oil is seen as the point of departure for a prolonged crisis, its most characteristic feature being a chronic and generalised contraction, seen also as an opportunity for change towards a smaller, slower and more local state of affairs, and a movement from competition to cooperation and from unlimited growth to self-limitation (Odum & Odum 2001; Heinberg 2004; Kunstler 2005; Latouche 2006; Colectivo Revista Silence 2006; Sempere 2009). Indeed, an opportunity is not the same as a certainty. People who state that degrowth could open the doors to desirable social re-organisation usually also state that it is just one of many possible paths. And after all it is probable that a series of erroneous decisions could also result in permanent economic regression and increasing social conflict. The following text is characteristic of the reasoning of those who locate themselves in this open-to-choice line: "For the next half-century there will be just enough energy resources left to enable either a horrific and futile contest for the remaining spoils, or a heroic cooperative effort toward radical conservation and transition to a post-fossil-fuel energy regime. The next century will see the end of global geopolitics, one way or another. If our descendants are fortunate, the ultimate outcome will be a world of modest, bioregionally organized communities living on received solar energy. Local rivalries will continue, as they

have throughout human history, but never again will the hubris of geopolitical strategists threaten billions with extinction. That's if all goes well and everyone acts rationally" (Heinberg 2003).

The more optimistic views that see degrowth as an opportunity to enact a change for the better, have, for the most part, rooted in Southern Europe—France, Italy and Spain—specifically as part of an intellectual movement based around the *Institut d'Études Économiques et Sociales por la Décroissance Soutenable* (<http://www.decroissance.org>) and the various publications under its influence either directly or indirectly. They have developed a visible coherence as a current of thought and their own programmatic dimension through campaigns and regular opinions, including the incipient characteristics of a social movement. It should be added that similar groups and currents of thought, many of which not using the term “degrowth”, exist in many countries all around the world. The more “pessimistic” views generally do not have practical projections, unless one wants to view certain “survivalist” groups as such.

Overshoot should be followed by collapse. And so, collapse is the object of a growing literature (Diamond 2005; Gowdy 2005; Orlove 2005; Costanza et al 2007; Bunce et al 2009). The fact, however, is that, as a sociological category, collapse is rather elusive. The term is open to many lines of interpretation and then its very meaning has something to do with the fuzziness of the differences between visions of degrowth. Because, as it has been said, collapse “is not a fall to some primordial chaos, but a return to the normal human condition of lower complexity” (Tainter 1995:198). “A complex society that has collapsed is suddenly smaller, simpler, less stratified, and less socially differentiated. Specialization decreases and there is less centralized control. The flow of information drops, people trade and interact less, and there is overall lower coordination among individuals and groups. Economic activity drops to a commensurate level...” (Tainter 1995: 193). Reduction of scale, less inequality, smallness, relocalization... Under this point of view, collapse is not very different from the old environmentalist advice. Maybe the question is not so much the goal as the costs of achieving it.

4.Catastrophe or opportunity?

The visions of social change in degrowth (the era of decline, past the Earth's limits, post-carbon society or whichever term one wishes to use) are not interesting because of what they say about the future—who knows how the future will be!—but because they free up the imagination and allow us to think outside the constraints of the maddening dogma of growth, beyond the dying paradigm of development. When we speak of prophecies, we must stress that uncertainty is the key word. There are no deterministic laws of social evolution (Juan 2006). The future is not written. Yet it would be useful to ask what lessons we can learn from an examination of the boundary conditions present in the various possible paths of degrowth.

Generally speaking, this question is related to the disjunctive premise mentioned above: Degrowth, catastrophe or opportunity? It is interesting that one of the oldest and most fundamental problems posed by philosophy and social theory regarding freedom and self-determination powerfully condition the answers. The visions of degrowth as an inevitable catastrophe tend to be based on deterministic considerations, within which a choice between various alternatives is not possible ("We are genetically driven just like any other animal. We have no mind other than the body, and we lack behavioural choice," is what Morrison writes (1999:242) as he sets forth his arguments on the inevitability of an ecological disaster). Visions of degrowth as an opportunity tend, on the contrary, to stress that we are facing an important, decisive moment, but that the decision, after all, is ours to make.

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