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Ambivalence, irony, and democracy in the Anthropocene

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ABSTRACT

In ideal-typical terms, there are two ways that the current crisis of environmental sustainability can be resolved, either (1) through the development of advanced technologies that would allow humanity to transcend its planetary boundaries or (2) through the political and economic enforcement of those boundaries. The first option is likely to require massive investments in both people and technology. The second option appears to demand near-absolute epistemological and ethical homogenization in a world as populous as ours. Both options seem to require political determination at a scale far remote from present-day realities which are characterized by a deep-felt ambivalence about the modern condition and irony about the prospects for radical change. This ambivalence is not surprising but its implications for environmental politics are both formidable and under-theorized. Instead of unintentionally slipping into an acute state of unsustainability, this paper aims to make explicit the macro-level choices implicit in the Anthropocene.

1. Introduction

How can long-term environmental sustainability be achieved? On a theoretical level, there seems to be two principle options or "strategies", either (1) through the development of advanced technologies that would allow humanity to transcend its planetary boundaries or (2) through the political and economic enforcement of those boundaries. If neither strategy is pursued with sufficient determination, it is highly likely, but not certain, that the overall rate of environmental destruction will eventually take the global ecological system over a tipping point beyond which the life-supporting ability of the biosphere will be permanently compromised [1,23].

Faced with such grim prospects, our ideological convictions are clearly put to the test. In retrospect, what are we to make of modernity and how can we understand the transformative processes which have made anthropogenic drivers the dominating factors at the planetary level, a state known as the "Anthropocene" [2]? Will it be possible to overcome the traumatic character of our initial encounter with modernity and learn to wield its power wisely in an ever more complex, pluralist and interdependent world? Or does our hope of survival hinge on people everywhere accepting the existence of absolute limits and altering their behaviour accordingly? Even if grand questions of this kind do occasionally surface in scholarly as well as public debates [3,67], they are for the most part merely there as vague echoes or implicit assumptions in discussions about more practical matters. Surprisingly enough, science seems to be of little help in answering these kinds of questions [4] as much depends on how we think that the world actually works and how we estimate a number of key parameters such as the long-term potential of technological evolution and the prospects of social change.

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2. Macro-level social choice

Yet, the Anthropocene does seem to point towards the need for making a kind of macro-level social choice with regards to sustainability. Although there is some unknown probability that a "business as usual" trajectory may be more sustainable than science has given us reason to believe, it appears highly irresponsible to bet everything on that single possibility. If nothing else as a precaution, there seems to be a need to ensure that sufficient "safety margins" are maintained in relation to the natural world. This article situates that need in the context of the two ideal-typical paths to sustainability introduced above. The first "modernization" path would use radical social investments to drive economic growth [5], intensify global trade to lessen the impacts of resource scarcities ([6]:470), and seek breakthrough innovations to more fully separate humanity and nature [7,63]. The second "ecologizing" path would attempt to reverse these processes through degrowth [8,9], facilitate a comprehensive reduction in consumption rates [64], and reconnect people with their local natural environment ([10]; [65]:82). Between these two ideal types, it is of course possible to imagine a whole spectrum of different strategies for sustainability which seek some specific combination of reduced consumption and technological innovation. At the same time, if we take into account the momentum that global capitalism has achieved in the last half century, the billions of poor people who are aspiring for Western living standards and the risk of triggering distracting political conflicts, it becomes less certain what room that actually remains for such middle-of-the-road strategies.

It is for these reasons that effective degrowth [11] would presumably have to include everything from far-reaching restrictions on reproductive rights [12] to near-authoritarian forms of socio-economic steering [61]. Projected onto the international scene, the implementation of such an agenda would require extensive ethical agreement and also a willingness on behalf of the poor to voluntarily forfeit their aspirations to a living standard similar to the one in the rich world.

It does not take an overly critical mind to doubt the plausibility of many of these conditions, especially in a world of interstate competition and conflicting norm systems. Any everyday conversation in, say, the United States or China will reveal what a fundamental shift of all social values it is that is actually implied in the concept of degrowth. Whether such a sea change is at all possible remains difficult to tell but, if anything, recent trends seem to point in the opposite direction with increasing scepticism regarding the science of climate change and a fundamental unwillingness to accept individual sacrifices (such as higher gasoline taxes) on behalf of the global environment [13,14]. Apart from the imagined reversal of all social priorities, a possibly even bigger obstacle is the lack of compelling socio-economic theories which characterizes much eco-socialist thinking. Little if anything is known about how production decisions are to be made without price signals, how processes of functional differentiation and specialization are to be reversed if international trade is wound down and how (if at all) political dissent is to be accommodated. The most common response to such concerns is to suggest that existing constitutional frameworks and market institutions are to be maintained but that they should, somehow, be made less exploitative and environmental destructive in nature. But if that is so, that brings us back to what seems to be a fundamental dilemma confronting any degrowth agenda: if change is not radical, it will most likely not deliver long-term sustainability and, if it is radical, it will also mean a sharp break with existing liberal-democratic practices.

Before turning to the possible implications of this dilemma, it seems appropriate to examine the other principle solution to the problem of sustainability, namely that, instead of trying to enforce the planetary boundaries, we should seek to permanently lift these limits through technological evolution. As a first preliminary observation, it seems reasonable to be extremely careful not to underestimate the magnitude of technological change called for in order to permanently transcend all planetary biophysical limits, especially if we assume a future world of universal affluence with a population similar to ours. In theory we can at a minimum imagine three different necessary elements of such a strategy: (a) a gradual decoupling from the natural world through space colonization, (b) a revolutionary change to the metabolism of our societies through molecular engineering and productive nanosystems and (c) the invention of new technologies capable of providing abundant and inexpensive energy [15,16]. While it is difficult to say in any detail what an optimal balance between these elements would look like, each element seems called for in order to make possible everything from climate stabilization to habitat preservation while allowing an accelerating rate of human development. If we ignore the possible emergence of a technological singularity [17] or other sudden breaks with all previous experience, it should be obvious that we are still many decades away from developing the kind of technology required to make such a future possible ([18]:37). It may even be that, while we are undoubtedly making progress in some areas such as nanoengineering or in the material sciences, we are actually moving further away from such a future as manned space programmes are closed down and funding for energy R&D is directed towards expensive low-energy technologies such as wind power rather than towards technologies that one day hypothetically could provide abundant and inexpensive energy at the scale needed for universal affluence [66].

Just as it seems reasonable to be cautious about the political prospects of radical environmentalism, it seems doubtful that the countries of the world would suddenly embrace any radical agenda for innovation. Not only is the kind of high-modernist imagination which brought about the Manhattan Project or the Apollo Program strikingly absent in contemporary political discourses about sustainability, cash-strapped economies also seem to offer little room for bold and uncertain long-term investments.

For all lip service about the role of innovation in securing environmental sustainability, few politicians tend to look beyond their own national borders and ask how their country could contribute in any substantial manner towards making universal affluence ecologically possible. Likewise, the academic discourse on ecological modernization has predominately emphasized marginal improvements to industrial processes and energy use at home rather than the need to develop entirely