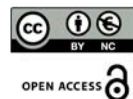


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Macro-sociology of climate change: an anti-deterministic account of fossil fuels-dependency

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Peter Wagner's most recent endeavour is a new chapter in his long-lasting engagement with historical sociology. If his previous *Progress: A Reconstruction* (Polity Press, 2016) was only indirectly linked to political ecology, *Carbon Societies* explicitly tackles the quintessential element of environmental politics, namely global warming. It does so by avoiding an exclusive focus on present dangers linked to the climate crisis. Quite compellingly, Wagner reverses usual interpretations by posing a different question: *to what social issues have climate change drivers been*

an answer to? By providing a detailed and macro-sociological answer, the Barcelona-based ICREA researcher opens up critical avenues not only to originally grasp the issue at hand, but also to politically act upon it. Our review is divided into three parts: the first deals with the anti-deterministic account of energy regimes' development. The second presents and discusses the key notion of problem displacement. The third advances critical remarks by referring to the framework of climate justice.

1. Wagner's analysis aims at understanding how present-day societies have become heavily dependent on fossil fuels. His first step is the individuation of a polemical object, namely omnipresent graphs representing historical carbon emissions (for example, the following one).

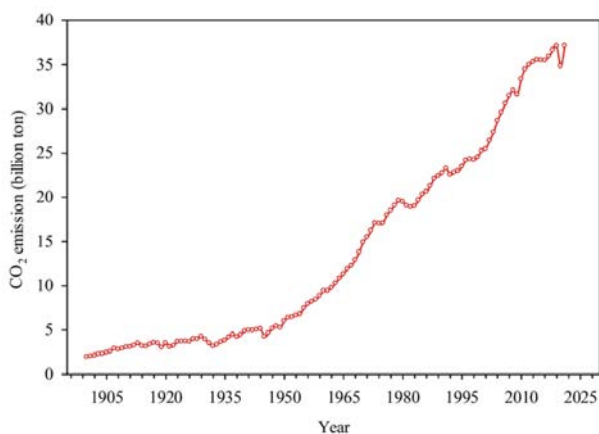


Figure 1. *Our World in Data* (<https://ourworldindata.org>).

In his view, “data curves of this kind tend to be read prematurely as indicating steady and linear evolution” (p. 32) between modernity or capitalism and global warming. Yet, it is possible to argue that fossil addictions were less a matter of linear technological evolution than socially specific processes whereby competing political and economic interests got entangled, with unpredictable outcomes. With this, Wagner rejects determinism in his analysis of three key logics

of history: a general trend towards “unstoppable expansion” (p. 36); situated bundles of “contingency and hierarchy” (p. 43); plural instantiations of “problem solving” (p. 54). Indeed, the climate crisis was not inevitable. It came about due to certain decisions made in large part by identifiable social actors in given political contexts. In Part I and II, Wagner assesses different historical trajectories and several key junctures in which alternatives to fossil fuel consumption were available. Meanwhile, he elaborates on the inter-relationship among modernity, economic systems, and sources of energy.

While industrialization and economic growth were largely seen as inherently good, alternatives were available all along and would have probably been less destructive to the climate. Regardless of this claim, however, what distinguishes Wagner’s approach is the constitutive openness of socio-technological evolution: “We could be looking at a series of historical transformations rather than a linear development. And other than assuming the reign of a single logic as cause of development, we may have to grasp the interrelation of plural logics, if any, at work in those transformations to understand how humankind has arrived to the point where we are now” (p. 32). Thus, Wagner proposes that fossil fuel reliance was a matter of choices made by social groups opposing one another, the dominant ones being the industrial élites, who stood to gain by controlling resources and labour in the interest of minimizing costs and maximizing profits. He further elaborates on this by highlighting instances when energy alternatives were ready at hand but got eventually overlooked. He first analyses the crossing of “horizontal frontiers” (p. 61) through European maritime expansion, then delves into the “vertical frontiers” (p. 83) in relation to the increasing reliance on underground resources – first coal, then oil and gas.

All in all, Wagner’s point is that societal dependence on fossil fuels is not ‘simply’ a consequence of population growth, mass-producing industrialism, or the imperative to accumulate capital. Rather, he emphasizes that this reliance arose from specific societal choices made in response to a variety of socio-economic challenges. Furthermore, the decisions leading to fossil fuel dependence were not merely a reflection

of technological progress. Instead, they were profoundly influenced by political pressures. His analysis indicates that alternative routes, such as investing in renewable energy, were feasible at various historical junctures. However, such alternatives were often disregarded because of powerful interest groups, especially industrial élites, benefitted from centralized control over energy resources like coal and oil. This illustrates the profound connection between resource control and social hierarchies, as well as economic power, thereby rendering fossil fuels the cornerstone of economic progress and material prosperity. Wagner's insights are particularly salient as they compel scholars to consider the social and historical frameworks that persistently influence both the origins and the ongoing deployment of climate crisis. His viewpoint challenges the conventional wisdom that economic progress has inherently required escalating extraction of natural resources. He posits that climate change, along with its associated inequalities, arises from political and social decisions rather than an inescapable historical path.

2. After having shown that there is nothing natural in fossil fuels-dependency, Wagner investigates the dynamics that have led to climate change as we know it today: how have modern social formations become dependent on non-renewable energies, so much so that it is fair to label them *Carbon Societies*? To answer this question, Wagner starts from the following remarks: "Before becoming the highly urgent problem that it is today, those actions that we now know as generating climate change were, on the contrary, intentional problem-solving actions" (p. 4). Moreover: "Examining the critical junctures in human history when resource regimes changed, this historical account aims to identify the social problems that were meant to be solved by burning fossil fuels and the power hierarchies that shaped the decisions to use them" (p. 241).

Wagner produces a detailed historical reconstruction, pointing to Western expansionary thrust on several fronts, namely the already mentioned horizontal and vertical frontiers. In his analysis, the author highlights how changes in resource regimes combined with changes

in societal self-understanding. Persuasive descriptions are provided, of how societies modified their economic, political and social structures as they moved from reliance on one energy source to another. These changes were concomitant to significant shifts in the social interpretations of major challenges, which often reflected ruling élites' perspectives. This kind of transformation can be observed both in the incremental use of coal in the second half of the Nineteenth century and in the progressive adoption of oil during the Twentieth century. Wagner points out how these transitions are reflected in the rise of CO₂-concentration levels in the atmosphere and is accompanied by social adjustments towards an "organised modernity" (p. 111) and a more industrialised society, eventually leading to the "Western" Great Acceleration after WWII (p. 133).

From a theoretical perspective, the author emphasises the need to overcome self-limiting monocausal explanations. In this regard, Wagner's reflection is based on three main explanatory logics: population growth, the quest for profit driven by capitalism, and the quest for freedom and material well-being in the context of modernity (with the concomitant emergence of so-called *imperial mode of living*). It is crucial to consider a broader and more complex picture, in which the different components can be integrated to one another in order to fully understand the phenomenon and recognise dense correlations between apparently monadic events. Wagner's intention, as said, is to go beyond monocausality; rather, he suggests an integration of the three logics, recognising that each of them – if taken individually – lends itself to be mistakenly isolated as playing a deterministic role in the genesis of environmental problems. However, he concedes a certain applicative effectiveness of such singular logics in allowing to identify a focal point on which to concentrate efforts to promote social change.

In this context, Wagner proposes to mobilize the fundamental notion of problem displacement as a sociological compass. The ninth chapter of the book is entirely dedicated to explaining it, particularly in connection to its application to the social logic of fossil fuels. Wagner analyses how a problem displacement logic has become the

modus operandi for overcoming ecological limits throughout the course of modern societal development:

In our terminology, problem displacement is a reinterpretation of a problematic issue in such a way that a solution becomes possible that places the 'cost' or burden in some to-be-specified sense 'elsewhere' (...). The notion of problem displacement presupposes, on the one side, an agent with objectives and, on the other, a problem as a difficulty or impossibility to reach an objective. The agent can be an individual person or, more typically, a collectivity of some kind (group, organization, class, society or state). The objective or requirement can be more or less narrowly defined, but there will always be some interpretative space to redefine them on the part of the agent (...). *Displacement, then, is a specific form of reinterpretation and related action that enables the agent to reach the objective by overcoming the difficulty. As already indicated, the specificity of problem displacement is the shifting of the burden of solving the problem to somewhere else* (p. 209-10; emphasis added).

According to Wagner, the emergence of environmental issues – from the scarcity of resources at the household level to the relocation of production processes – generates the need to identify solutions. Ruling élites, either unable to identify them or judging it more advantageous to avoid facing the problem, have adopted displacement actions.

The fundamental difference between Wagner's concept and others, such as that of negative externalities, typical of economic analysis, lies in the fact that Wagner emphasises actors' *intentionality* to displace the problem. This conceptual framework is not limited to considering production or resource allocation systems as mere determinants, but includes a spatial and temporal reflection, understood as an analysis of future consequences. Hence, problem displacement implies both the coercive externalisation to other actors (not necessarily endowed with proper resources to deal with that) and the attribution of responsibility to nature: "First, problems have been displaced onto other people: domestically, onto other classes, more specifically onto the working class in the Nineteenth and the Twentieth centuries; globally, onto the indigenous and colonized people. Second, problems have been displaced

onto nature through intensification or extension of resource extraction and use. Third, problems can be displaced into the future, thus leaving their solution to successive generations” (p. 211).

In sketching such a comprehensive historical picture, Wagner describes how underlying this issue-shifting mechanism is the need to respond to the three *problématiques* that, according to him, every society must face. The first is of economic nature and concerns the satisfaction of material needs; the second is political and concerns the rules of life in common; the third has an epistemic dimension and concerns the certainty of knowledge. Economic and epistemic *problématiques* are rooted in resources regimes and in social self-understanding, respectively. With the concept of *problématique*, the author departs from an overly rigid differentiation of societies, based on intellectual divisions reflecting a Twentieth century European society, such as cultural, economic, and political aspects, which are considered less suitable for describing the complexity of the phenomenon. In this perspective, Wagner illustrates how such dynamic has shaped the entire history of the West and, by extension, global history. The oil crises of the 1970s, the emergence of the ecological crisis as a political issue and the publication of the Club of Rome’s *Limits to Growth* in 1972: all these events outlined a period that Wagner calls “problem squeeze” (p. 221), namely a piling up of critical issues (amongst others: the spectre of resource exhaustion, stagflation, the fiscal crisis of the State). Western countries, subjected to a complex and multifaceted set of problems, began to relocate their production activities, and implement neo-liberal policies at the domestic level.

This process, facilitated by the quest for lower labour costs and for less restrictive environmental regulations, entailed the development of countries outside of the West, leading in particular to the recent “Asian” Great Acceleration. In this context, Wagner illustrates how human societies may have reached a point where the possibility of dislocating problems, on a global scale, has come to an end. This change could be attributable, in the first place, to factors related to the concepts of planetary boundaries. In particular, the severity of the

climate crisis raises questions about the reliability of the knowledge needed to dislocate problems. Although one should not lose faith in human development and creativity, Wagner points out that no innovation capable of reducing the accumulation of carbon dioxide in the atmosphere in a timely manner is currently in sight. Furthermore, the concept of knowledge is closely linked to that of agency. The collective agential capacity of Western States has undergone a gradual decline. The notion of problem squeeze has reduced the ability of the displacement strategy to be effective, while paradoxically increasing its necessity. Finally, the issue of normative justification is raised: emphasising the need to embrace “safe and just boundaries” (p. 226), referring to the concepts of ecological justice and redistribution of costs on the one hand, and of resources on the other.

As we live in a system prone to entropy, the continued use of problem displacement strategies can lead to increasing chaos and the degradation of available resources. Moreover, those who suffer most from the effects of the climate crisis are often the very ones who contribute least to global pollution and who have the fewest resources, both material and non-material, to protect themselves and respond effectively. Thus, Wagner concludes with these words: “The scenarios of technologically driven attempts at self-defeating prophecy will lead to a more unequal and unjust world, which will not immediately become uninhabitable for human beings in general but is already becoming uninhabitable for many” (p. 260-61).

3. Peter Wagner’s analysis in *Carbon Societies* has notable strengths, particularly in his examination of non-inevitability of historical logics and in his account of problem-displacing strategies (now to be ruled out). He presents a fresh viewpoint on how issues like global warming are socially constructed and perceived. Instead of seeing climate change as an unavoidable result of economic growth and technological advancement, Wagner argues that it stems from specific conjunctural decisions and socio-political power dynamics. This perspective paves the way for the sociological recognition of both alternative paths that

could have been less harmful to the environment (in the past) and sustainable policies that may regenerate the biosphere (in the future).

However, in our opinion, the book also contains some notable shortcomings. Amongst them are the somewhat abstract nature of Wagner's examination of global inequalities: while he effectively illustrates how inequality is rooted in resources' violent appropriation and unequal distribution, he sometimes falls short of providing a thorough, concrete analysis of current economic and political strategies that either perpetuate or mitigate these inequalities. Consequently, parts of his analysis come across as more theoretical than applicable to ongoing debates – both tactical and strategic – about climate politics. Moreover, Wagner devotes particular attention to power dynamics and hierarchies, yet this topic is nowhere to be fully explored. Considering the author's emphasis on the need to find solutions that interrupt the problem displacement strategy and generate not only technical or economic alternatives to eliminate fossil fuel dependency, but also concrete socio-ecological transformation paths, it would have been appropriate – we find – to include more concrete references to such alternatives in the analysis.

Even when such references to social movements engaged in tackling global warming are more explicit (p. 258), the general framework under which they mobilize is not discussed. Such framework is climate justice, and the neglect is surprising precisely because it discloses a perspective that, exactly like Wagner's, sees rising temperatures as a symptom of inequality on a planetary level. This inequality can take two forms: between the Global North and South (that is, between the countries that have more responsibilities for creating the problem and those that are most exposed to its detrimental consequences) and between the social classes (the responsibilities for investments in fossil fuels, similarly to their impacts, are not equally distributed in this respect too). The earliest versions of climate justice – in the late 1990s – emphasised the first form. Since 2019, however, there have been more attempts to articulate both forms in an international and social critique of fossil capitalism. It is not clear to us why Wagner avoids a

direct discussion of these issues, as they precisely provide the political culture in which the end of problem displacement can be assessed and overcome. In our view, a sociological engagement with climate justice would have made his arguments even stronger and would additionally defused the excessive abstractedness we just mentioned.

One last note: the lack of referencing to Feminist critiques of the climate emergency is quite striking. For example, the discussion about “safe and just boundaries” would have been deeper if inclusive of Kate Raworth’s insights about the *Doughnut Economics* (Penguin, 2017). Similarly, the historical analysis of energetic regimes would have benefitted, we believe, by engaging with Carolyn Merchant’s *Ecological Revolutions* (North Carolina University Press, 1989), Ariel Salleh’s *Ecofeminism as Politics* (Zed Books, 2017) and Stefania Barca’s *Forces of Reproduction* (Cambridge University Press, 2020). We believe that exploring the gender dimension of problem displacement is definitely a promising line of development for further research.