

SOLVING PROBLEMS, MAKING CLIMATE CHANGE.
PETER WAGNER'S "CARBON SOCIETIES" ON THE
HISTORICAL ORIGINS OF FOSSIL FUEL DEPENDENCY

Peter WAGNER, *Carbon Societies. The Social Logic of Fossil Fuels*
(Cambridge/New York, Polity Press, 2024, 320 p.)

Usually, the term “carbon society” is used with the prefix “low” to describe an imaginary of the future in which fossil fuels are less important and societies have transitioned to net-zero emissions. Peter Wagner’s new book “Carbon Societies” drops the prefix and adds a world historical perspective by turning our attention to the past, asking how contemporary societies have become so dependent on fossil fuel use.

With that he continues an important line of work trying to explain the social and material causes of climate change historically. To name just a few, Timothy Mitchell’s “Carbon Democracy” explores the connection between the use of fossil fuels and the development of political participation. Seeking to understand how the material qualities of fossil fuels have created political realities, he argues that one reason for the replacement of coal with oil was to avoid labour disputes with unionised miners as oil demands less labour and tends to be located at more remote locations.¹ In a similar logic, Andreas Malm argues in “Fossil Capital” that it wasn’t technological innovation, resource efficiency or price that determined the rise of steam power and the fossil economy.² Instead, the decisive advantage of the steam engine was to allow the property-owning class to increase power and control over workers. More recently, Pierre Charbonnier provided a long-term environmental history of political theory identifying a strong link between affluence and freedom. From mercantile capitalism to today’s climate crisis, Charbonnier traces the various strategies that are embedded in political ideas to increase the control of the environment as the source of subsistence, inhabitation and knowledge.³

Discussing these works, Wagner’s new book sets off by addressing a shortcoming in the historical explanations for climate change—a tendency to monocausal logics of explanation—focusing on three of these: theories of

¹ Timothy MITCHELL, 2011. *Carbon Democracy: Political Power in the Age of Oil* (London, Verso Books).

² Andreas MALM, 2016. *Fossil Capital: The Rise of Steam-Power and the Roots of Global Warming* (London, Verso).

³ Pierre CHARBONNIER, 2021. *Affluence and Freedom: An Environmental History of Political Ideas* [trans. Andrew Brown] (Cambridge, UK Medford, MA, Polity).

population growth that correlate carbon emission with a growing global population and resource scarcity; theories of freedom in which wealth creation through the division of labour and civil rights creates an increasing want for comfort; and political economy critiques of capitalism that consider the profit motive as the central driver of ever more resource exploitation. Against these explanations Wagner develops his own narrative. He suggests a world historical analysis of how fossil fuels became meaningful in the first place, and traces the transformation of biophysical resource regimes and societal self-understandings—a variation of Castoriadis’ idea of societal imaginaries.⁴ According to this perspective, the three monocausal logics fail to capture, on the one hand, how humans are embedded in non-human nature and, on the other hand, how they can shape this embeddedness through their imagination. His long-durée argument about contingency in the development of different societies’ biophysical resource regimes insists on a plurality of logics of fossil fuels.

This material-ideational perspective draws on data and literature from global history and from environmental history, but also on historical sociology and social theory. It allows him to debunk some “main broad-brush explanations” of climate change that assume a logic of “path-dependency”—the uncovering of a certain rationale that imposes itself onto world history. Instead of a deterministic perspective, he pursues a “problem-oriented approach” that focuses on the issues that societies have faced in certain regions and certain times and on the role of elites who have attempted to solve these problems without giving away their power. In this sense, Wagner turns the often-asked question on the connection between fossil fuels and societies on its head, asking instead for the problems that the use of fossil fuels allowed to solve.

Having narrowed down his object of enquiry to biophysical resource regimes and societal self-understandings, he spans a remarkably large historical arch, before reflecting on the consequences of his world-historical perspective on climate change as problem solving.

This arch begins with a brief reflection on the continuity of the biophysical regime of early settled agricultural societies which had a relatively stable use of resources per capita. However, his main argument starts with early modernity and the beginning of global trade including the Atlantic triangle and the Columbian exchange. Wagner discusses the expansion of the horizontal frontier as a decisive shift in Europe’s resource regime allowing it to free both space and labour time through

⁴ Cornelius CASTORIADIS, 1987. *The Imaginary Institution of Society* (Cambridge, UK, Polity Press).

the use of slavery and the appropriation of land. But this expansion did not cause a rise in global CO₂ emissions. Instead, in a period around 1600, a decline in average temperatures is observable, which some link to colonial violence and the spreading of disease in the Americas causing a reduction in agricultural activity and forest regeneration. Others argue for planetary reasons such as volcanic eruptions increasing the reflection of sunlight back into space. Human made or not, the cooling is an example for the fact that 15th-18th century mercantile capitalism functioned without causing global warming.

A world-historical rise in CO₂ concentration is only observable from the beginning of the 19th century with the expansion of the first vertical frontier of the fossil fuel coal in the UK. Wagner shows how this event was not predominantly driven by population growth, freedom or profit but rather problem driven: British society reached a limit in its biophysical resources—especially wood but also land—and attempted to solve this problem through the increased use of coal. Here, the fact that coal was easily accessible and close to the centres of production becomes a decisive reason why industrialisation began in Britain.

Wagner observes a similar historical logic of contingency in the transgression of the second vertical frontier—that of oil and gas beginning in the 1870s in the US and Russia. While emissions in the US increased massively, the UK's emissions remained relative constant as oil and gas were not yet driving its economy. This coincided with divided societies split into oligarchic elites that profited from industrialisation and colonial empires and a growing working-class population that saw a fall in living standards, particularly in urban areas. As workers were unable to realise their demands for political participation and the redistribution of wealth in the 19th century, Wagner questions the validity of Charbonnier's thesis of a co-development of affluence and freedom, indicating that the social question was repeatedly postponed and only partially solved on a nation-state level after World War II when a new resource regime appeared that reacted to the rise and fall of totalitarianism in Europe.

Wagner takes this argument from Schumpeter's book "Capitalism, Socialism and Democracy".⁵ Schumpeter considered the lack of willingness by elites to share the wealth created by industrialisation with workers as the key reason for the success of totalitarian regimes, and therefore advocated for welfare policies across Europe. Western elites allowed for

⁵ Joseph Alois SCHUMPETER, 1976. *Capitalism, Socialism and Democracy* (New York, Routledge).

those redistributive measures, Wagner argues, predominantly to avoid an expansion of socialism. Whereas Charbonnier defends a co-development of affluence and freedom at the expense of the environment from the early 19th century onwards, Wagner suggests that it is only after World War II that fossil fuels were properly linked to democratic political systems—kicking off the “great acceleration” of CO₂ emissions. Building on Lipset⁶, Wagner links this welfare expansion explicitly to the use of coal. He argues that the political problem arising out of World War II—how to establish stable and peaceful liberal democracies that do not turn to socialism—was answered with the expansion of the exploitation of fossil carbon reserves driving a new consumer society.

This approach thrives until the 1970s when Western societies found themselves again in a “problem squeeze” caused by the social uprising of workers and students, growing worries about the depletion of fossil fuels (particularly through the publication of the “Limits of Growth” report⁷), and by the oil crisis of 1973. Wagner suggests that Western elites aimed to solve this problem through the relocation of industrial production involving high environmental pollution to locations with less regulated labour markets—in particular East Asia—addressing both a new societal self-understanding and a growing environmental consciousness. On the one hand, this shift helped to weaken labour movements in the West and, on the other, it lowered the prices of production allowing for increasing mass consumption. It caused a slow decline of emissions in Western countries but led to their rapid rise in Asia.

Wagner identifies this form of problem displacement as the actual social logic of fossil fuels. Societies—particularly in the West—have historically faced limits and boundaries. To cope with those, they tried to find solutions allowing them to transgress frontiers—first horizontally through the expansion of territory in early modernity, then vertically first through coal and later through oil and gas. The different regional contexts he touches upon illustrate that population growth alone cannot explain rising carbon emissions as, for example, in the 1960s, emissions rose in countries such as Germany while its population remained relatively stable. The profit motive, though of high importance in accelerating carbon emissions, does not provide a logic of fossil fuels as the significant increase in emissions in the great acceleration in the latter half of the 20th century is also shaped by an imperial logic of two competing political economic systems each

⁶ Seymour Martin LIPSET, 1959. “Some Social Requisites of Democracy: Economic Development and Political Legitimacy”,

American Political Science Review, 53 (1): 69–105 [<https://doi.org/10.2307/1951731>].

⁷ Donella H. MEADOWS *et al.*, 1972. “The Limits to Growth—Club of Rome”.

claiming hegemony. Finally, the drive to an increase of political freedom and more affluence only materialises after World War II, when oligarchic elites were forced to share their wealth more intensely with workers within their own national context. However, as the example of France shows—which predominantly used nuclear energy for its economy and welfare state—this was not necessarily linked to fossil fuels alone.

My broad-brush summary of the argument does not do justice to the detailed discussion the book provides, but it provides a glimpse of the idea Wagner is after. Even though he accepts that all three monocausal explanations play an important role, none of them provide the deterministic *logic* directing historical development. Instead, when societies face problems, they mobilize different forms of allocative, authoritative and ideological forces in search of a solution. Which one of them will be decisive is not a question of respective logics, but rather of a power struggle between different societal actors—from elites and labour unions to states and businesses. Whereas many world-historical accounts have either focused on specific decades and centuries, or on specific objects⁸, Wagner tries to synthesise this scholarship to advance a historical perspective that uncovers a logic of problem displacement, geographically, temporally and socially. With this, he hopes to advance an argument against linear and progress-oriented understandings of history and emphasise the importance of contingency, which he considers is ignored by the critiqued monocausal approaches.

Wagner's successful attempt to write a long-term and global perspective on the plural social logic of fossil fuels, nonetheless, has some shortcomings. Generally careful to provide geographic diversity and specificity, he drifts at times into a generalisation of the European and Anglo-Saxon contexts or uses humanity as an undefined category instead of differentiating its social contexts. Working class resistance and the struggle for decolonisation as political forces appear as little more than an impulse to which elite actors eventually react. Those shortcomings are not mentioned as a moral critique; they illustrate where the book could have gained in analytical acuteness.

For example, beyond asking the question of what kind of problems the use of fossil fuels solves, Wagner does not go into the detail of the question for whom those problems are solved and at whose expense. He mentions elites and workers but remains vague about what their respective interests

⁸ e.g., Jürgen OSTERHAMMEL, 2014. *The Transformation of the World: A Global History of the Nineteenth Century (America in the World)* [trans. Patrick Camiller] (Princeton/

Oxford, Princeton University Press); Andrew F. SMITH, 2015. *Sugar: A Global History* (London, Reaktion Books).

actually are and how they have changed over time. Historical variations in both groups throughout the centuries of Western industrialisation remain unaddressed. Working class interests in Britain at the end of the 19th century are different from those in France in the 1950s. Over the same period, a shift from a predominantly land-owning aristocracy to industrial capitalism has reshaped the ways in which elites defend their power positions. Similarly, Wagner's approach would have profited from more detailed attention to the actual techniques with which interests were defended and powers exercised. Discussing, for example, the general strike in the UK in 1926 would have allowed him to explore in more depth how political events themselves are shaped by different political interests beyond the dichotomy of elites and working-class populations. Using case studies that surface those interests and techniques would have allowed him to complexify the general argument and take away some of its purity.

All in all, "Carbon Societies" is an important and original contribution to the growing debate on the entanglement of societies and climate change. From a social theory perspective, Wagner's historical reading of climate change as the result of problem-solving emphasises contingency in social and material change and provides a challenging argument against the simplification of causal explanations. Beyond this theoretical quality, his historical perspective raises important new questions not only for the logics of history but also for more applied research, for example in the study of why certain decarbonisation approaches might succeed or fail, depending on what problems they solve and for whom. His tour de force through the history of resource regimes and societal self-understandings will certainly provide a productive framework for future detailed and contextual studies of socio-ecological transformations.

JAN GILLES 