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Climate change and international political economy: between collapse and transformation

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ABSTRACT


The dynamics of climate change politics have thrown up two fundamental, and entirely contradictory, challenges for political economy in the last 10 years. On the one hand, the new science of ‘net zero emissions’ has produced a growing recognition that a world without fossil fuels is both absolutely necessary and utterly transformative. On the other hand, civilizational collapse (absolute declines in human populations, collapse of food production systems, collapse of social institutions) is now much more widely recognized as an entirely plausible trajectory for the world within living lifetimes. The stakes in climate politics have thus become radically sharper. This paper argues that IPE has some key theoretical arguments and substantive knowledge that it can contribute to understanding the crucial challenge of pursuing the transformative pathway and that the key challenge for IPE scholars is to deploy their knowledge accordingly.

KEYWORDS

Climate change; decarbonization; collapse; transformation; economic growth

Introduction

It would not be fair to charge IPE with ignoring climate change. There have been many strands to the substantial body of work done by IPE scholars on climate change (see Paterson & P-Laberge, 2018 for a full survey). This has included work on transnational corporate power in climate politics (Levy & Newell, 2005; Meckling, 2011; Newell & Paterson, 1998; Wright & Nyberg, 2015); on neoliberalism and climate politics/policy (Bailey, 2007; MacNeil, 2017); on the financialization of climate change (Helleiner & Thistlethwaite, 2013; Lohmann, 2012; Paterson, 2001; Thistlethwaite, 2011); on carbon markets specifically (MacKenzie, 2009; Paterson, 2010, 2012; Stephan & Lane, 2014); on North-South inequalities as ‘unequal ecological exchange’ (Jorgenson, 2012; Roberts & Parks, 2009); and more recently on fossil capital and carbon democracy (Altwater, 2009; Malm, 2015; Mitchell, 2013). There have been occasional attempts to synthesize this work into broad analyses of capitalism’s relationship to climate change (Koch, 2012; Newell & Paterson, 2010; Pelling et al., 2011).

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It would however be fair to assert that climate change has been a blind spot for IPE in two important ways. First, it has simply been a relatively marginal concern within IPE to date – a blind spot in terms of ‘*what we focus on*’, in the terms set out by the editors of this Special Issue (LeBaron et al., this issue). This is amply demonstrated by Seabrooke and Young (2017), Katz-Rosene (2019) and Green and Hale (2017). Second, and more importantly, IPE’s blind spot regarding climate change is that it has failed to come to grips with two absolutely fundamental shifts in climate politics in the last decade and what it means for the theory and practice of IPE. The first of these is the recognition of the depth of the social transformation entailed in addressing climate change adequately. The second is the increasing recognition of the catastrophic costs of failing to do so – at least the spectacular expansion of human misery and degradation, and potentially the collapse of human civilization *per se*. Transform or collapse is now the stark choice for the future of the global political economy. But only a handful of scholars in IPE have engaged in using the field’s knowledge to think about these transformations (Newell, 2019b). In this sense then, climate change is radically a blind spot for IPE regarding ‘*how we analyze*’ it (LeBaron et al., this issue).

IPE is not unique in failing to recognize these shifts and starting to think them through: many academic fields are similar. Denial in the strict psychological sense, as analyzed by Norgaard (2011), might be one reason for this – the implications of both shifts in understanding produce discomfort from which we may reasonably recoil. But in IPE it may be compounded with the onset of the financial crisis and resulting crash, followed by austerity and the rise of populism, which has come to crowd out space for other concerns, financial crises being a long-standing core concern for IPE, even one of its ‘founding’ concerns (Kindleberger, 1973).

However, IPE needs to get to grips with this transformed situation for at least two reasons. First, IPE does have a set of conceptual tools that can help societies understand the dynamics that will drive both *whether* we collapse or transform, and *what sorts* of transformations or collapses might unfold, with what consequences for human flourishing, inequalities, violence, power relations, and possibilities for democratic political life. And second, neither transformation nor collapse is unlikely to leave the central theoretical and normative commitments of IPE unscathed. Leaving aside the (very real) possibility that organized intellectual production as we know it may no longer exist as an effect of societal collapse, the world is unlikely to look sufficiently similar to our various current understandings of states-markets-firms, globalized capitalism, professional networks, imperialism, or whatever other underlying set of premises we base our IPE on. I focus however on the first of these challenges in this paper, with only occasional allusions to the second.

Transformative climate change

Climate change is now widely understood as a challenge that, in Naomi Klein’s (2014) apposite phrase ‘changes everything’. Indeed it changes in fact much more than she suggests: her vision is for a revitalized and greened social democracy, but not really a thoroughgoing transformation of the entire socio-technical and political-economic fabric. Through to 2007, the predominant view was that global GHG emissions needed to be reduced by around 80% to avoid ‘dangerous anthropogenic

interference with the climate system’ (United Nations, 1992, Article 2). By the IPCC Fifth Assessment Report in 2014, echoed in the words of the Paris Agreement of 2015, this had shifted to being a need to get to ‘net zero emissions’ globally and to do so by around 2050. The difference between 80% and ‘net zero’ is more dramatic than it might appear. 80% could probably be achieved by decarbonizing electricity, electrifying ground transport, radical improvements in energy efficiency, some technical improvements in things like steel and cement production, and probably some reductions in ruminant agriculture. Already a challenge of epic proportions. Net zero means that you need to do all of that, much more quickly, but probably eliminate ruminants (dairy as well as beef or lamb), create radical breakthroughs for production of cement, steel, and plastics, and probably to eliminate flying entirely. You also need to develop radically new ‘negative emissions technologies’, on which more or less all IPCC scenarios to keep warming within a 2°C limit depend, and which, apart from afforestation, no one has much of a clue about which ones, of the various speculative options that have been ventured, might have a chance of actually working, and could be deployed within a plausible timeframe (Anderson & Peters, 2016; Grubler et al., 2018).

The shift in this technocratic vision towards this transformational frame has been accompanied by a parallel radicalization of social movement activism on climate. From the mid-2000s onwards we have had a distinct shift to such radicalism, mostly articulated *via* discourses of ‘climate justice’. These have a trajectory from anti-globalization protests in the Hague COP in 2001, to Plane Stupid, Rising Tide, Climate Camp, anti-pipeline protests, fossil fuel divestment and 350.org, to name just a few. The most recent wave of these, since late 2018, has been the school strikes inspired by Greta Thunberg, and Extinction Rebellion. These groups have typically articulated a transformational approach to climate change than more traditional climate change NGOs.

Most political economists will recognize that this sort of transformation is utterly unprecedented in human history, and speaks to some of their core interests. Peter Newell and I claimed in 2010 that ‘Never before has humanity as a whole embarked on a project to radically transform the way its societies work’ (2010, p. 1). That claim still holds, but in a much starker and more dramatic fashion. Everything about how the global economy works, from the minutiae of daily life to the operations of global economic governance and strategies of global businesses, will be disrupted by the transformation, and in many ways is already being so.

Climate collapse

During the same time period, the stakes entailed in failing to effect such a transformation have become dramatically higher. Climate scientists have long known both about critical thresholds in the climate system and that climate changes usually happen rapidly and disruptively as climate tips from one state to another. However, in the 1990s the possibility of a ‘runaway greenhouse effect’ was a distinctly minority view, not even represented in early IPCC reports (Houghton et al., 1990). However, during the early 2000s, climate scientists and many policymakers increasingly accepted that at around 2°C of warming above pre-industrial levels, certain key thresholds might be breached that would trigger significant positive

feedbacks in the climate system that would take climate change beyond human control.

During the 2010s, this frame expanded, to increasingly emphasize that failing to keep warming within 2 °C limits would be catastrophic for human civilization, and even to fail to limit it to 1.5 °C would be highly destabilizing. There were a number of specific elements to this shift – revised estimates of melting rates for Greenland and Antarctic ice sheets and thus of sea level rise, revised analyses of the rate of increase of incidence and/or severity of extreme weather events, notably. These were complemented by new observations about the former, and confirmation of the latter, with Hurricanes Katrina, Sandy and Harvey all devastating different metropolitan areas just in the US within a decade (to say nothing of more devastating storms elsewhere, such as Typhoon Haiyan in the Philippines), each of which was supposed to be a 1 in 100 year storm at worst.

Prognostications of a 3 or 4 °C world, or worse, started to abound and become taken more seriously. The possibility of total collapse, triggered by various processes – collapse in food production systems, emergency management systems being overwhelmed by ‘cascading’ extreme weather events, inundation and abandonment of major cities, and so on, have become widely accepted. At the very least the *possibility* of a major collapse of global human civilization can no longer be discounted, within living timeframes, even if the timing or character of such collapse cannot be predicted. And even if such collapse does not occur, it became clearer that the severity of climate impacts beyond 1.5 or 2 °C would entail progressively growing forms of human degradation and insecurity, as popularized effectively by Wallace-Wells’ *Uninhabitable Earth* (2019). The politics of thinking about such collapse is of course deeply problematic and dangerous, but so is the politics of *not* thinking about it.

While the specifics of how such collapse unfolds cannot be precisely predicted, we can be confident that its impacts will be highly uneven, following and intensifying pre-existing lines of inequality, violence and colonial power: lines of class, gender, and racialization (on these, see contributions by Bhambra, Prügl, and Singh, this issue). Indeed, for many, the idea of civilizational collapse may not be a novel experience: indigenous peoples’ round the world have seen their civilizations destroyed by colonialism, destruction which is ongoing in many places, and of course is intersecting increasingly with climate change itself.¹ Specific civilizations such as the Mayans, Harappans or most famously on Easter Island, have also collapsed for other, mostly socio-ecological, reasons, popularized most prominently by Jared Diamond (2011). Nevertheless, while we can learn much from the collapse of particular civilizations, with their specific languages, cultures, and economies, it is a different proposition to face the possibility of the end of human civilization *per se* – that is, of the existence of large-scale human societies with advanced institutional and technical apparatuses, within the lifetime of those alive today.

At least for a time, transformation and collapse are likely to co-occur. Many elements in transformative processes are already underway, such as the dramatic rise of solar and wind energy, the early stages of a shift to electric vehicles, or the crisis of the coal sector in many parts of the world. But however fast they scale up, some aspects at least of collapse are now more or less inevitable given the time-lags in the climate system. Increasingly devastating storms, floods, droughts, are now more or less certain to continue and intensify. Significant sea level rise inundating coastal

areas is similarly just a question of time, and parts of major cities like Miami are becoming indefensible against this. At some point, collapse may overwhelm our systems and thus the way societies are transformed is driven by climate impacts rather than our collective attempts to mitigate climate change. But they will nevertheless co-exist for at least a period of time until one or the other becomes the dominant trajectory.

IPE's challenges

This way of understanding climate change as a social and political challenge raises various theoretical challenges for IPE. Just to take a few examples, debates about financial regulation, trade relations, multilateral economic governance, the rise of the BRICs, or labor regimes, will all be transformed both as decarbonization of the global economy increasingly transforms what is produced, where, by whom, and by the need for new systems to adapt to sea level rise, extreme weather, the collapse of food production, or new waves of climate-induced migration.

A more important challenge however for scholars in IPE is to use the theoretical, methodological and substantive knowledge they have to apply it to advancing understanding of how to go about pursuing rapid transformation towards decarbonization and thus to avoid the worst of the implications of collapse. I focus on the transformation question here, largely for normative reasons. Since various phenomena that IPE scholars already study are central to how this dynamic of transformation or collapse are both caused and will play out – corporate power, financialisation, geopolitical rivalries, resource competition, inequalities and injustices of various sorts, but also thinking generally about transformation (Blyth, 2002) – then we have a corresponding responsibility to explain how these phenomena shape the potential for either a relatively benign transformation (often framed as a ‘just transition’, e.g. Healy & Barry, 2017) and/or an adaptation to the sorts of system collapse that may retain some elements of a humane social form.

Thinking about transitions

There is plenty of existing research on such transitions. However, much of this work is couched variously within conceptual frameworks that largely abstract from the dynamics of global political economy (for some exceptions, see Malm, 2015; Scoones et al., 2015). Specifically (and I simplify enormously here), they tend to be couched either in terms of complex adaptive systems (e.g. Bernstein & Hoffmann, 2018; Geels et al., 2017; Levin et al., 2012; Meadowcroft, 2009; Unruh, 2000), using the language of ‘tipping points’, ‘lock-in’, and so on, or it arises out of various combinations of Foucauldian, STS, or other cultural politics forms of analysis, focusing variously on new forms of climate governmentality, socio-materialities, subjectivity and practice, or imaginaries (e.g. Bulkeley, 2016; Bulkeley et al., 2016; Milkoreit, 2017; Stripple & Bulkeley, 2014, 2019).

While there is a lot to learn from these various bodies of work, there are surely important contributions to be made by scholars within IPE. The question is then what tools do scholars in IPE have to engage and contribute to these debates?

IPE's contributions to transitions thinking

First, we could identify those *specific* aspects of the transformation agenda where IPE may have the most important contributions to existing debates. I highlight finance here for reasons of space, but other key contributions could come from political economy accounts of the State, of the nature of power in capitalist society, or of regulatory politics (see e.g. Breetz et al., 2018).

To date, to the extent that IPE scholars have engaged the financial dimensions of climate change, it has focused the implications of climate change policy for finance and the roles and interests of the financial sector in climate policy (see references in the introduction). Where climate policy is the object it is only recently that some in IPE and closely related fields have framed it as a transformational problem, turning their attention to how finance might help accelerate low carbon transitions (Bridge et al., 2020; Christophers et al., 2020).

Yet there is a very significant literature on climate finance, as well as attention to it by policy-makers, that is crying out for IPE analyses, but to which IPE scholars have for the most part been blind. Most of this analysis has a thin understanding of finance, often simply crudely in terms of 'how much money is needed to fund low-carbon development in the global South, and how can that be channeled in an institutionalized manner?' (e.g. Steckel et al., 2017, for a similar criticism, see Bridge et al., 2020). Finance is not understood well either in terms of the specific financial processes that are the bread and butter of IPE studies of finance, or in terms of a specific economic sector with particular forms of power and particular interests.

IPE scholars of finance could overcome this blind spot by making major contributions to the understanding of transformation dynamics through, among other things: their understandings of the specific qualities of various sorts of financial instrument and their potential for use to accelerate low carbon transformations (such as the differences between green bonds, project finance, or carbon trading, see e.g. Bridge et al., 2020); their analyses of policy or governance interventions and how they shape the incentives for financiers to engage in specific investment strategies; their understanding of the spatial or scalar qualities of finance and thus the potential to take advantage of the spatial qualities of renewable energy or other low carbon infrastructure; understanding of the political dynamics of central bank regulation and novel forms of public financing (such as 'Green Quantitative Easing', see Dafermos et al., 2018); or their analyses of the shift to 'assetization' (Langley, this issue). Each of these could make important contributions to understanding the key types and sites of intervention that could accelerate transformative action on climate.

The question of growth

Beyond *specific* literatures such as finance or regulatory politics, IPE has some *general* underpinning assumptions that are worth re-exploring, to enable us to extend existing work on low carbon transitions (see also Newell, 2019a,b). Perhaps most obvious of these is the question of economic growth. The process of growth is central to the empirical matter of IPE. With a few notable exceptions, all major perspectives in IPE have a, mostly unstated but presumed, normative commitment to

economic growth – the failure to question growth could itself be considered a blind spot. The same is of course true for policy makers, corporate leaders, and even most environmental NGOs. The normativity of growth has been challenged again recently by the rise of the degrowth movement (e.g. D’Alisa et al., 2015; Kallis, 2011), and climate change provides an important part of the argument of degrowth advocates. But it would be a wild exaggeration to say that degrowth is anything but marginal politically or within IPE.

This widely held commitment to growth has functioned as a powerful constraint on even timid climate action. It also remains the case that, at the global level, there is a pretty strong correlation between the expansion of GDP and continued increases in carbon emissions. To think about transformation without reflecting on the commitment to growth is hazardous.

The point here is not whether there are in the abstract sense ‘limits to growth’ (Meadows et al., 1972). It is more to think of the impact of growth as a broad social imperative on the possibility and shaping of transformative climate action. Quantitatively this is reasonably easy to understand. To have any chance of meeting a 2°C target, the global economy needs to reduce emissions absolutely by around 3% per year (and every year that emissions keep going up, the decline needed after emissions peak is faster still). If the global economy grows at 2%, then in relative terms, the global economy needs to decarbonize by 5% annually. The historical rate of relative decarbonization is around 1%. So with existing rates of GDP growth, we need to increase the historical rate of socio-technical change five-fold, while with zero economic growth, we ‘only’ need to triple it. And even with degrowth, we would still need to accelerate it substantially.

This observation provokes many debates. The most obvious tension to explore is that the transformation will require, among other things, massive investment in alternative forms of energy, transport, food system, and building infrastructure, investment that within capitalist conditions at least will be seeking a return and thus generating future economic growth. Ideas about a ‘Green New Deal’ or similar package (Luke, 2009) have arguably not yet dealt with the underlying tension raised by this.

Focusing debates on the question of growth ought to provide IPE scholars with opportunities to contribute in important ways to thinking about the dynamics of transformations towards decarbonization. In particular, political economists have the theoretical tools both to explain why the commitment to growth is so widely held, and how the politics of growth is central to understanding in particular the pursuit of ‘tipping points’ that enable rapid transformations.

But raising the question of growth also raises the question of capitalism, since the most common explanation within political economy (especially but not only ones derived from Marx) frameworks for the question of why we live in a world that is obsessed with growth, is because that world is capitalist. That is, it has some fundamental institutional features – wage labor, commodity production, market competition – that create dynamics that both generate growth in a highly dynamic way, but also depend on that growth for its stability.

This is of course one of the underlying reasons for the existence of a large literature arguing that capitalism has a basically contradictory relationship to climate change. At one level, it is an easy story to tell about the contradictions between capitalism and the climate. The contours are well known (see Malm, 2015; Newell

& Paterson, 2010; notably DiMuzio, 2015). Clearly, a broadly convincing story can be told that the origins of climate change are in specific patterns of industrial development whose logics can be readily explained in terms of the dynamics of capitalism. Malm's *Fossil Capital* (2015) is perhaps a central starting point for such an exercise, as it shows in meticulous detail how the class dynamics of Lancashire mill operations in the early nineteenth century were central to how coal came to be the dominant power source in the industrial revolution, with huge structuring effects across the history of the global economy. He shows how the decisive movements in the shift from water to coal were to do with undermining labor activism, failures of inter-capitalist coordination, spatial contradictions between the availability of water and effective supply of labor, among others.

One complicating factor in focusing attention on potential transformations away from capitalism in response to climate change is the temporal question. If we have, as the current climate movement slogans tell us, 12 years (by the time this is published it will be more like 10) to make the key decisions to get us on the transformation rather than collapse trajectory, then how does this interact with a claim that capitalism needs to be transcended? For some (e.g. Monbiot, 2019) this urgency intensifies the need to replace capitalism. But at the same time, it raises the question of whether or not such a broad change in political-economic system is possible in such a timeframe. Arguably, capitalism took something in the region of 500 years to become globally dominant, so how would transcending it occur so much more quickly?

A related issue is to ask whether we can legitimately infer from the historical dependence of capitalism on fossil energy, whether this is a structural requirement or rather a (deeply embedded and powerful) historical contingency. There are good reasons for believing it might be structural (Altwater, 2009) but there are perhaps similarly good reasons to think that innovation, constant change, 'all that is solid melts into air', is just as strong an intrinsic dynamic of capitalism and that the investment and technological dynamics of capitalism mean it can in principle shift to non-fossil energy rapidly. Many capitalists believe this genuinely, and there is *prima facie* evidence that the solar and wind revolution is occurring much quicker than many thought possible, stimulated by such dynamics.

One of the things this focus does however in relation to IPE is to call attention to capitalism's materialities in ways that perhaps much work in IPE neglects, and which taking more seriously would enable IPE to contribute more effectively to thinking about transformative action on climate change. In part this entails recognizing more fully how to understand the global economy as a material and energy system (Katz-Rosene & Paterson, 2018), with the history of the global economy being structured by coal, oil and gas, and then the implications of this for what a post-petroleum global economy might look like.

But it also entails thinking through the specific socio-technical, or socio-material, qualities of the various sectors and practices entailed in the transformation, recognizing significant variation across them. This is something that much existing transitions literature does well (e.g. Barry, 2013; Geels et al., 2017; Stripple & Bulkeley, 2019). Nevertheless, IPE's particular strength here is to emphasize the ways that such transformations are driven and constrained by key capitalist dynamics such as those analyzed by Malm in the transition to a coal economy. IPE scholars could make distinctive contributions to understanding how, for example, a

rapid transition to electric vehicles will be shaped by questions of labor relations, inter-capitalist competition, intellectual property rights politics, and interstate competition, all features often neglected in existing research. At the same time, such research ought to contribute to attempts within IPE to understand more fully the socio-material dynamics of the global economy.

A final point to make regarding IPE's challenges, is to underscore that some forms of IPE scholarship are more likely to be able to engage this research and action agenda than others. It needs an ontological starting point of capitalism rather than the market, in order to be able to understand dynamic forms of change, the grounding of the economy in material processes, questions of inequality and power. It needs to be able to think in terms of transformation and change rather than seeking stability. Much of the existing focus on global governance needs at least to be significantly retooled, since its origins are distinctly in attempts to understand the conditions for producing forms of governance designed to generate stability, not to contribute to transformative change (much of the recent work on the post-2007 crisis has focused on stabilizing global finance through novel regulatory arrangements). It needs to be attentive to questions of inequality and its effects. But it needs also to be capable of considering the materialities of the global economy in the ways hinted above.

Conclusions

This piece does not pretend to have offered any 'solutions'. Rather, it has tried to provoke IPE scholars to step up to the challenge of using their knowledge to contribute to the challenge of dealing with the climate crisis, to recognize their blind spot in using their expertise to contribute to these crucial questions for the future of humanity. Either the world economy will be totally transformed by the abandonment of fossil fuels and the emergence of a renewable economy, the shift from ruminant agriculture, the shift to electric transport systems, the elimination of almost all aviation, and the financial and other infrastructure that underpins these transformations. Or it will collapse as a cascade of climate impacts overwhelm our social institutions and daily practices. More likely, we will experience some combination of these two processes, both of which are likely to dwarf anything human societies have experienced, at least on a global basis. IPE is particularly important to the attempt to chart a course towards the transformative dynamic and away from the collapse one, since many of the core concerns of political economists are precisely the drivers both of the underlying crisis but also of the potential for transformative action.

Note

1. I am grateful to Gurminder Bhambra for making this point particularly well in the workshop at Sheffield that led to this collection of papers.

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Notes on contributor

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