


BOOK REVIEW

Five Times Faster: Rethinking the Science, Economics, and Diplomacy of Climate Change, by Simon Sharpe

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Perhaps one of the most challenging aspects of teaching climate law is to instil (or maintain) some sense of optimism in your students. Firstly, students are told about one dire scientific finding after another. Global carbon dioxide emissions are still going up.¹ The global carbon budget that would give us a chance to keep the global average temperature increase below 1.5°C is rapidly being depleted.² Across the globe, climate change is already affecting climate and weather extremes and leading to loss and damage.³ Crossing dangerous climate tipping points is becoming increasingly likely.⁴ And so on, and so forth. Next, they are told about the development of the international climate regime, how national targets and pledges are insufficient⁵ to meet the goals of the Paris Agreement,⁶ and that it has taken countries more than 30 years to agree on a simple reference calling for ‘transitioning away’ from the primary driver of climate change – fossil fuels.⁷ At that point, there may not be that many students left who are convinced that all shall be well.

Enter Simon Sharpe, who has been working on tackling climate change from within the United Kingdom (UK) government for 10 years. Sharpe’s *Five Times Faster* injects a healthy dose of optimism into the reader, importantly without watering down the severe risks of the climate crisis. If anything, Sharpe’s book contains a clear warning: namely, that we have been downplaying some of the worst risks of climate change.

¹ P. Friedlingstein et al., ‘Global Carbon Budget 2023’ (2023) 15(12) *Earth System Science Data*, pp. 5301–69.

² R.D. Lamboll et al., ‘Assessing the Size and Uncertainty of Remaining Carbon Budgets’ (2023) 13 *Nature Climate Change*, pp. 1360–7.

³ Intergovernmental Panel on Climate Change (IPCC), ‘Summary for Policymakers’, in H. Lee et al. (eds), *Climate Change 2023: Synthesis Report* (IPCC, 2023), A.2, pp. 5–8.

⁴ D.I. Armstrong McKay et al., ‘Exceeding 1.5°C Global Warming Could Trigger Multiple Climate Tipping Points’ (2022) 377(6611) *Science*, article eabn7950; T.M. Lenton et al. (eds), *The Global Tipping Points Report 2023* (University of Exeter, 2023).

⁵ United Nations Environment Programme (UNEP), *Broken Record: Emissions Gap Report 2023* (UNEP, 2023).

⁶ Paris (France), 12 Dec. 2015, in force 4 Nov. 2016, available at: https://unfccc.int/sites/default/files/english_paris_agreement.pdf

⁷ Decision -/CMA.5, ‘Outcome of the First Global Stocktake’, 13 Dec. 2023 (advanced unedited version), para. 28(d), available at: <https://unfccc.int/documents/636584>.

However, this warning is followed up by a clear call for action that asks the reader to reconsider the way in which we think about the economics of climate change, as well as the way in which states and non-state actors shape and implement transnational cooperation.

The book's title is a reminder of the scope of the challenge ahead: that we 'need to rip fossil-burning out of the global economy roughly *five times faster* this decade than we managed over the past decade' (p. 1). The challenge for this 'critical decade' is clear: we need radically and rapidly to transform all major sectors of the economy – including energy supply, transport, and land use – if we are to have a decent chance of achieving the Paris goal of keeping global warming below 1.5°C.

The book is divided into three parts, discussing the titular science, economics, and diplomacy of climate change. Rather than dwelling on the latest scientific findings from the Intergovernmental Panel on Climate Change (IPCC), the first part gets straight to the point, namely, that we know surprisingly little about the risks posed by climate change. The scientific community, policymakers, research funders, insurers – Sharpe recalls his encounters with these various actors, and expresses his astonishment that few of them consider high-end climate impacts or, more colloquially, 'what's the worst that could happen?'. Sharpe hones in particularly on the risks of what he terms 'runaway tipping points of no return', which he argues have been 'under-researched, under-reported, and under-estimated' (p. 52). Drawing on his own experience of developing a climate change risk assessment with an international group of researchers, his core argument in this part is that scientists, policymakers, and other relevant stakeholders should prioritize such risk assessments, and 'tell the truth' to high-level politicians about their findings (p. 80).

In the second part of the book, Sharpe pulls no punches when targeting the 'dismal science'.⁸ In particular, he takes issue with the models used by neoclassical economists such as Nobel Prize Laureate William Nordhaus, which continue to have a major influence on climate policymaking. Sharpe agrees with critics who call such models 'worse than useless' (p. 89), and suggests that economic analysis that compares the costs of mitigation action with the costs of inaction (i.e., the costs of climate change) to identify an 'optimal' response is 'unhelpful to the public, to policymakers, and to the economic profession itself' (p. 87). Rather than viewing the economy as a machine the responses of which can be modelled ('equilibrium economics'), Sharpe argues that in the era of the Anthropocene we should see the economy as an ecosystem ('evolutionary economics'). If we do so, he posits, '[w]e are not mechanics, fixing the machine when it fails. We are something more like gardeners, tending and shaping the ecosystem so that it grows in a way that we find beneficial' (p. 111).

Sharpe continues by underscoring the implications of this type of thinking for the role of governments and the choice of policy instruments. He finds that the benefits of carbon pricing are overstated, and that traditional regulation as well as public investment ought to be more strategically leveraged in climate policy to bring about 'self-

⁸ See similarly S. Keen, 'The Appallingly Bad Neoclassical Economics of Climate Change' (2021) 18(7) *Globalizations*, pp. 1149–77.

accelerating transitions’ (p. 165). This thinking is applied to several cases, in which Sharpe suggests that, in addition to the negative climate tipping points he warned about earlier in the book, we can also think about positive, social tipping points,⁹ where small changes lead to large-scale breakthroughs in the development and deployment of low-carbon technologies. He offers several examples, including the very rapid uptake of electric vehicles in Norway and the phase-out of coal-fired power in the UK. The examples offer reason for hope, as they show that targeted interventions may have outsized effects in the transition to net zero.

Legal scholars and practitioners should pay particular heed to these chapters. Sharpe is not alone in calling for new thinking about economics in the context of the net-zero transition.¹⁰ These calls point to a larger and different role for national governments, a reconsideration of conventional wisdom in regulatory instrument choice, and the need for adaptive law and governance.¹¹ The chapters also underline the potential value of applying the growing body of literature on socio-technical transitions to an area of law that inevitably has to deal with profound transitions.¹²

Having said that, Sharpe’s examples – as he acknowledges himself (p. 170) – remain limited to countries in the global north. Perhaps more importantly, although he encourages a ‘search for [positive] tipping points’, it actually remains rather unclear how such tipping points can be identified *ex ante*. This broader critique has been eloquently phrased by Manjana Milkoreit, who claims that:

We need to exercise caution when offering social tipping points as potential solutions to the temporal squeeze of climate change. We might be promising a solution that (a) does not exist, (b) exists, but much less frequently than current studies suggest, (c) exists, but not in the kinds of systems or at the kinds of scales that would make a difference, or (d) exists but is not open to deliberate control.¹³

In short, before we pin too much hope on social tipping points, a much better understanding of their dynamics is required.

The final part of the book, focusing on climate diplomacy, should be of particular interest to those working on international climate change cooperation. Here, Sharpe’s experience working with the UK government in the run-up to the Glasgow Climate Conference in 2021 offers interesting insights into the strategies pursued by a host country for a United Nations (UN) climate summit. More importantly, following a discussion of the Paris Agreement and its discontents, Sharpe offers his thoughts on alternative architectures for transnational climate change cooperation. Specifically, he

⁹ See also T.M. Lenton et al., ‘Operationalising Positive Tipping Points Towards Global Sustainability’ (2022) 5 *Global Sustainability*, article e1; Lenton et al., n. 4 above, section 4; J.D. Farmer et al., ‘Sensitive Intervention Points in the Post-carbon Transition’ (2019) 364(6436) *Science*, pp. 132–4.

¹⁰ L. Diaz Anadon et al., *Ten Principles for Policymaking in the Energy Transition: Lessons from Experience* (Economics of Energy Innovation and System Transition, 2022).

¹¹ *Ibid.*

¹² F.W. Geels et al., ‘Sociotechnical Transitions for Deep Decarbonization’ (2017) 357(6357) *Science*, pp. 1242–4.

¹³ M. Milkoreit, ‘Social Tipping Points Everywhere? Patterns and Risks of Overuse’ (2023) 14(2) *WIREs Climate Change*, article e813, p. 8.

looks at climate diplomacy again through a transitions lens,¹⁴ suggesting a more focused approach that targets transitions in particular sectoral systems, such as the power sector, road transport, and land use. The chapters offer convincing arguments as to why such sectoral cooperation may offer a good complement to the snail-paced intergovernmental negotiations at the UN Framework Convention on Climate Change (UNFCCC).¹⁵ For instance, with regard to the shift from internal combustion engines to electric vehicles, Sharpe notes that '[t]en countries account for three-quarters of global car sales, and the rules for over half the global market are written by just three regulators: those in Brussels, Beijing, and California' (p. 250). In such circumstances, it makes more sense to pursue cooperation with a limited set of relevant sectoral state and non-state actors than to wait for an ambiguously worded global signal.¹⁶

Sharpe discusses a range of relevant international cooperative initiatives that emerged in recent years, such as the Powering Past Coal Alliance.¹⁷ Indeed, in recent years the number of statements, targets, and pledges adopted on the sidelines of the intergovernmental UNFCCC negotiations has increased significantly, including initiatives such as the Global Methane Pledge,¹⁸ the Clean Energy Transition Partnership,¹⁹ and the Breakthrough Agenda²⁰ (in which Sharpe himself was involved). Although such initiatives can be welcomed following the sectoral transitions logic put forward in this book, they also raise questions about accountability – that is, how to avoid such initiatives being all talk and no action. Again, Sharpe acknowledges this concern, but his response that '[t]he challenge ... is not so much to hold each other to account, as to help each other' (p. 247) is not entirely convincing. The onus should be on proponents of new initiatives to convince the public, civil society organizations, and countries not involved in these initiatives that such initiatives have effects in practice, given that the results of previous cooperative initiatives have, at best, been mixed.²¹

Overall, though, *Five Times Faster* should be compulsory reading for anyone looking for fresh ideas on how to tackle the climate crisis. Sharpe's 'can-do' attitude to the problem, as well as his systematic application of transitions thinking to domestic regulation and international cooperation, can offer inspiration for legal scholars and practitioners who are willing to think beyond the mainstream approaches to climate action.

¹⁴ Again, lawyers should take note of the potential to apply transition theory to international law in the area of energy transitions. For a recent example see O. Hailes & J.E. Viñuales, 'The Energy Transition at a Critical Juncture' (2023) 26(4) *Journal of International Economic Law*, pp. 627–48.

¹⁵ New York, NY (United States), 9 May 1992, in force 21 Mar. 1994, available at: <https://unfccc.int>.

¹⁶ To get an idea of how such a global signal would appear, look no further than Decision -/CMA.5, n. 7 above, para. 28(g) (which very broadly calls for '[a]ccelerating the reduction of emissions from road transport on a range of pathways, including through development of infrastructure and rapid deployment of zero- and low-emission vehicles').

¹⁷ Available at: <https://poweringpastcoal.org>.

¹⁸ Available at: <https://www.globalmethanepledge.org>.

¹⁹ Available at: <https://cetpartnership.eu>.

²⁰ Available at: <https://breakthroughagenda.org>.

²¹ S. Chan et al., 'Assessing the Effectiveness of Orchestrated Climate Action from Five Years of Summits' (2022) 12 *Nature Climate Change*, pp. 628–33.