1 Introduction

Looming Climate Instability?

That anthropogenic climate change is one of the foremost twenty-first-century global security challenges is a view now firmly, if rather superficially, ensconced within Western liberal public and policy discourse. National security strategies have depicted it as 'an urgent and growing threat' and possibly 'the greatest challenge' there is to global stability, potentially presaging a 'breakdown of the rules-based international system' and a 're-emergence of major inter-state conflict'. Foreign ministers have labelled it 'perhaps the twenty-first century's biggest foreign policy challenge' and 'the world's most fearsome weapon of mass destruction' and claimed that 'the threat that a changing climate presents to . . . international peace and security cannot be underestimated'. Climate change ministers have argued that 'we need to be ready for a world where climate instability drives political instability' and that a 'world where climate change goes unchallenged will be a Hobbesian world, where life for far more people is "nasty, brutish, and short"'. The United States Congress and Pentagon have both described climate change as a threat to US national security. Successive United Nations (UN) Secretary Generals have called climate change 'the defining threat of our time' and 'the pre-eminent geopolitical and economic issue of the twenty-first century'. Activist movements from Extinction Rebellion (XR) to Greenpeace have characterised it as 'an unprecedented global emergency' that puts us 'in a life or death situation of our own making' and as 'the world's biggest threat . . . ranked close to weapons of mass destruction in terms of potential impact' (indeed, one of the co-founders of XR has claimed that climate change is already 'turning whole regions of the world into death zones' and that a climate change–induced 'global holocaust . . . is already underway'). And figures from Barack Obama to Russell Brand, among many others, have suggested that climate change is a bigger threat than terrorism.[1]

[1] The White House, *National Security Strategy 2015* (2015), 12; UK Cabinet Office, *The National Security Strategy of the United Kingdom: Security in an Interdependent World* (2008),

Indeed, such views have a conspicuously diverse array of proponents. Western militaries and defence planners, national security think tanks, intelligence agencies, UN and Bretton Woods organisations, state development agencies, humanitarian and development NGOs, environmental campaigners, mainstream liberal media, eco-socialist commentators and even authoritarian Southern governments: all have in one way or another, and for one reason or another, argued that climate change has sweeping implications for conflict and security. Climate change deniers have often ridiculed claims to this effect, along with more basic evidence on the extent and causes of global warming. Many non-Western and Southern governments, most notably China, India, Russia and Brazil, have also been sceptical, arguing, among other things, that the UN Security Council is not the appropriate venue for addressing the challenge of climate change. And various academics have also expressed doubts about the links between climate change, conflict and security, as detailed below. Yet for all this, the breadth of the contemporary Western public and policy consensus on the question of climate security is striking. On this issue, both the American military machine and its fiercest critics can in broad terms agree, as can neo-liberal economists and their anti-capitalist opponents. Climate security discourse is a space where John Kerry and Naomi Klein, Prince Charles and the Syrian state, George Monbiot and the World Bank, Friends of the Earth and the US Central Intelligence Agency all converge.[2]

18–19; W. Hague, 'The diplomacy of climate change', Speech to Council on Foreign Relations, New York (27/09/2010); S. Denyer, 'Kerry calls climate change a weapon of mass destruction, derides sceptics', *Washington Post* (16/02/2014); M. Wallström, Statement at the UN Security Council Debate on Climate-Related Security Risks (11/07/2018); E. Davey, Speech to a Climate and Resource Security Dialogue for the 21st Century conference, London (22/03/2012); C. Huhne, 'The geopolitics of climate change', Speech to Future Maritime Operations conference, Royal United Services Institute, London (07/07/2011); US Congress, *National Defense Authorisation Act for Fiscal Year 2018*, HR2810, Section 335; Department of Defense, *Report on Effects of a Changing Climate to the Department of Defense* (2019), 2; A. Guterres, 'Remarks at the High-Level Event at COP 23' (15/11/2017); B. Ki-moon, 'Opening remarks to UN Climate Change Summit Plenary' (22/09/2009); Extinction Rebellion, 'The Emergency', https://rebellion.earth/the-truth/the-emergency/; K. Naidoo, 'Nature does not negotiate: climate catastrophe is with us now!', Greenpeace (08/12/2014); C. Baynes, 'Extinction Rebellion founder told he is not welcome in movement after Holocaust comments', *Independent* (21/11/2019); 'Obama: The Vox conversation, part two', *Vox.com* (09/02/2015); R. Leber, 'Obama is right: climate change kills more people than terrorism', *New Republic* (11/02/2015); R. Brand, 'ISIS versus climate change – which kills more?', *The Trews* (05/03/2015), https://www.youtube.com/watch?v=Zrr5BvrAo-Y.

[2] T. R. Bromund, 'Climate change is not a national security threat', The Heritage Foundation (04/06/2015); P. J. Michaels and C. A. Preble, 'Does climate change actually fuel terrorism?', The Cato Institute (18/11/2015); UN Security Council, *6587th Meeting* (S/PV.6587) (20/07/2011), 7–9, 12–13, 18–20; UN Security Council, *8451st Meeting* (S/PV.8451) (25/01/2019), 15–17, 42–3, 61–2; Denyer, 'Kerry calls climate change

For proponents of this climate security orthodoxy, the implications of climate change for global security are abundantly clear: that through its impacts on both short-term environmental shocks and long-term trends, climate change will exacerbate resource pressures and scarcities and in turn feed increased resource competition, economic and social vulnerability, migration and displacement, and civil and political conflict at multiple sites and scales – all aided and abetted by existing patterns of poverty and fragility. The central concern of climate security discourse, in other words, is with climate-induced resource scarcity crises and their consequences, which are typically envisaged as taking place in, and as emanating from, the developing world. The 2010 US National Security Strategy, for example, characterised the changes likely to be 'wrought by a warming planet' as 'new conflicts over refugees and resources; new suffering from drought and famine; catastrophic natural disasters; and the degradation of land across the globe'. UK Foreign Secretary Margaret Beckett introduced the first ever UN Security Council debate on the subject by asserting that an 'unstable climate will exacerbate some of the core drivers of conflict, such as migratory pressures and competition for resources'. 'What makes wars start?' she asked, before answering: '[f]ights over water. Changing patterns of rainfall. Fights over food production, land use.' And during a follow-up Security Council meeting, UN Secretary General Ban Ki-moon couched the issue as follows:

> We must make no mistake. The facts are clear. Climate change is real and it is accelerating in a dangerous manner. It not only exacerbates threats to international peace and security, it is a threat to international peace and security … Competition between communities and countries for scarce resources, especially water, is increasing, exacerbating old security dilemmas and creating new ones. Environmental refugees are reshaping the human geography of the planet, a trend that will only increase as deserts advance, forests are felled and sea-levels rise. Mega-crises may well become the new normal. Those are all threats to human security, as well as to international peace and security.[3]

a weapon of mass destruction'; J. Box and N. Klein, 'Why a climate deal is the best hope for peace', *New Yorker* (18/11/2015); R. Mills, 'Charles: Syria's war linked to climate change', *Sky News* (23/11/2015); ICG, *Popular Protest in North Africa and the Middle East (VI): The Syrian People's Slow-Motion Revolution* (2011), 23; G. Monbiot, 'How fossil fuel burning nearly wiped out life on Earth – 250m years ago', *Guardian* (27/05/2015); World Bank, *Turn Down the Heat: Confronting the New Climate Normal* (2014); C. Bennett, 'Failure to act on climate change means an even bigger refugee crisis', *Guardian* (07/09/2015); D. R. Coates, *Worldwide Threat Assessment of the US Intelligence Community*, Statement to Senate Select Committee on Intelligence (29/01/2019), 23.

[3] The White House, *National Security Strategy 2010* (2010), 47; UN Security Council, *5663rd Meeting* (S/PV.5663) (17/04/2007); P. Reynolds, 'Security Council takes on global warming', *BBC News* (18/04/2007); UN Security Council, *6587th Meeting*, 2.

In all of these formulations and many others besides, it is *resource scarcities* and their socio-economic, especially migration, consequences which are viewed as the key 'intervening variables' between global climate change and worsening instability.

There is, on one level, very good reason for these concerns. Global average temperatures are already more than 1°C above pre-industrial levels (and temperatures over land around 1.5°C higher). The level of atmospheric carbon dioxide (CO_2) is not just rising but doing so at an ever-accelerating rate (during the 1960s, atmospheric CO_2 was rising at below 0.8 parts per million (ppm) annually; by the 1990s, this growth rate had become 1.5 ppm; by May 2019, the atmospheric CO_2 level was 3.5 ppm higher than twelve months previously). Global greenhouse gas emissions will continue rising through to at least 2030 even if all countries' 2015 Paris Agreement commitments are fully implemented. And, of course, they are not being. As a result, our Anthropocene planet is currently on track to have warmed by 1.5°C sometime during the 2030s or 2040s and by 2°C – the internationally accepted target for avoiding 'dangerous climate change' – not long after that. It is projected that, even with full implementation of the Paris Agreement, the Earth will have warmed by between 2.6 and 3.2°C by 2100. Unless worldwide mitigation policies and implementation efforts are significantly expanded, the warming will be greater still. And, in some regions, average temperature rises are likely to be even higher than these global figures suggest.[4]

Climate change of this magnitude and velocity will undoubtedly have wide-ranging environmental, economic, political and humanitarian consequences. Global heating will transform regional climates and ecosystems. Heat death risks will soar. Precipitation may shift considerably, with some regions becoming hotter and drier, others hotter and wetter. Most forms of extreme weather event will become both more frequent and more extreme. Sea levels will rise – albeit unlikely by more than one metre this century, and with sea levels not fully stabilising for several

[4] IPCC, *Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems* (2019), 44; US National Oceanic and Atmospheric Administration, Earth Systems Research Laboratory, 'Trends in atmospheric carbon dioxide', www.esrl.noaa.gov/gmd/ccgg/trends/data.html; Scripps Institution of Oceanography, 'Carbon dioxide levels hit record peak in May', Keeling Curve blog (04/06/2019); J. G. J. Olivier et al., Trends in Global CO_2 and Total Greenhouse Gas Emissions: 2017 Report (PBL Netherlands Environmental Assessment Agency, 2017); International Energy Agency, *Global Energy and CO_2 Status Report 2017* (2018); IPCC, *Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways*, Summary for Policymakers (2018), 4; J. Rogelj et al., 'Paris agreement climate proposals need a boost to keep warming well below 2°C', *Nature*, 534 (2016), 631–9.

millennia.[5] And population distribution and food production patterns will inevitably be hugely affected and will have to change. It is frankly inconceivable, given all of this, that climate change will not have significant ramifications for patterns of conflict, insecurity and instability. And in these respects it is neither surprising nor particularly troubling that there is such a wide liberal public and policy consensus on the question of climate security.

In other respects, however, the value of climate security discourse is far from clear. The precise *meanings* of climate security claims are, to start with, often inconstant or ambiguous. Sometimes their reference points are 'national' or 'global' security, while at other times their focus is the likely impacts of climate change on 'human security' or even 'ecological security' – which are different matters altogether. Sometimes climate impacts are discussed in determinist and mono-causal terms, while elsewhere climate change is portrayed as but one 'contributory factor' to conflict among numerous others – with the question of how many others (tens? hundreds? thousands?) usually being left open and unaddressed. The *assumptions* underpinning climate security thinking are often questionable, including those about the nature of human–environment relations and about the causes of conflict, instability and insecurity. Moreover, the *purposes* – the aims and agendas – guiding climate security discourse also warrant interrogation. The framing of climate change as a security challenge – its discursive 'securitisation' – has no doubt been motivated above all by a desire to highlight the urgency of the climate change challenge, and through that to help push the issue up assorted social, political and international policy agendas. But other agendas have also often been in play: military interests in identifying new rationales for intervention; economic interests associated with new 'crisis response' technologies; donor and NGO preferences for depoliticised framings of socio-ecological crises; and more. To adapt Robert Cox's pithy phrase, climate security discourse is 'always for someone and for some purpose' – and not all of these purposes are benign. What's more, even allowing for the best of intentions, there remain questions about the *impacts* of climate security discourse on efforts to reduce greenhouse gas emissions. A good case can be made that, far from supporting mitigation efforts, the language of climate 'threats', 'chaos', 'emergency' and 'catastrophe' feeds feelings of helplessness and fatalism and may even provide an excuse for inaction.[6]

[5] C. Mora et al., 'Global risk of deadly heat', *Nature Climate Change*, 7 (2017), 501–6; P. U. Clark et al., 'Consequences of twenty-first century policy for multi-millennial climate and sea-level change', *Nature Climate Change*, 6 (2016), 360–9.

[6] M. McDonald, 'Discourses of climate security', *Political Geography*, 33 (2013), 42–51; R. Cox, 'Social forces, states and world orders: beyond international relations theory',

Most important, the scholarly *evidence* on the links between climate change and security is weak and divided, and when it departs from dominant policy framings is routinely ignored. For the most part, scientific research has played a formative if far from straightforward role in pushing forward national and international action on climate change. Within climate security discourse, by contrast, it has been defence planners and their scenario reports which have been most influential. Thus, the first major climate security study, commissioned by the Pentagon's leading futurologist, contained very little evidence but nonetheless envisaged large-scale military confrontations over natural resources, a 'flood of refugees' arriving in the United States from the Caribbean (by 2012!) and civil war in China plus the 'near collapse' of the European Union (EU) (by 2025). Likewise, the single most influential report on the subject, a 2007 study authored by a dozen retired three- and four-star US generals and admirals, concluded that climate change will act as a 'threat multiplier for instability in some of the most volatile regions of the world' – though, once again, with only the barest of evidence bases.[7] Only in the wake of these early military-led reports has a significant body of actual research on the subject been conducted. While any discourse always has multiple origins, climate security discourse has clearly been led and shaped more by policy and defence actors, most prominently the US military establishment and its offshoots, than by any weight of scientific evidence.

On the evidence itself, researchers are deeply, and often bitterly, divided – in a manner that cuts across epistemologies and methods. Some quantitative studies have identified striking historical relationships between the climate, weather and conflict, and from that developed projections about the potential conflict and security impacts of climate change. A widely read 2009 study by Marshall Burke and colleagues, for example, identified strong correlations between temperature variations and battle deaths in Africa, and on this basis predicted that by 2030, an additional 393,000 lives may be lost each year across Africa because of global warming. Another more recent study, by Anouch Missirian and Wolfram Schlenker, has claimed to find associations between asylum applications received by the EU and weather fluctuations in source countries, and on this basis suggested that by the end of the century these

Millennium, 10:2 (1981), 128; K. M. Norgaard, *Living in Denial: Climate Change, Emotions, and Everyday Life* (MIT Press, 2011).

[7] P. Schwartz and D. Randall, *An Abrupt Climate Change Scenario and Its Implications for United States National Security* (California Institute of Technology, 2003), 17; Center for Naval Analysis Military Advisory Board, *National Security and the Threat of Climate Change* (2007), 44–5.

applications may have increased by as much as 188 per cent. Both studies, however, have been sharply critiqued, including by fellow quantitative researchers.[8] More broadly, while most quantitative studies do identify some manner of connection between specific environmental and conflict variables, a large minority do not, and among those that do, the findings are consistently contradictory. Of recent studies on the impacts of rainfall variability in Africa, for example, some find *low* rainfall to be associated with increased conflict but others *high* rainfall; still others find high rainfall to be associated with *reduced* conflict; at least one study finds that droughts aid democratic transitions; others conclude that precipitation extremes, of either sign, are associated with increased conflict; and numerous studies have found no meaningful correlations, either in Africa specifically or beyond. Just as striking, even review essays on quantitative scholarship on climate security have not been able to come to common conclusions about the extent of agreement on the subject.[9]

Moreover, qualitative researchers have, if anything, been even more split. Some have agreed with and perhaps even gone beyond the policy orthodoxy, with one leading genocide studies scholar concluding that climate change will probably be 'the biggest trigger of genocide in the twenty-first century' and many others foreseeing 'climate wars' and 'climate chaos'. And yet, on the other hand, many qualitative researchers have been profoundly sceptical and critical of climate security thinking. Case study analyses have repeatedly disputed claims about particular conflicts – the civil wars in Darfur and Syria, for example – and the role of climate change therein. Likewise, discourse analyses of climate security narratives have consistently argued, on a range of

[8] M. Burke et al., 'Warming increases the risk of civil war in Africa', *Proceedings of the National Academy of Sciences*, 106:49 (2009), 20670–4; A. Missirian and W. Schlenker, 'Asylum applications respond to temperature fluctuations', *Science*, 358:6370 (22/12/2017), 1610–14; H. Buhaug, 'Climate not to blame for African civil wars', *Proceedings of the National Academy of Sciences*, 107:38 (2010), 16477–8; A. Bojanowski, 'Asyl-studie entsetzt wissenschaftler', *Der Spiegel* (22/12/2017).

[9] J. Selby, 'Positivist climate conflict research: a critique', *Geopolitics*, 19:4 (2014), 829–56 provides further detail on these disparate findings. See also I. Salehyan, 'From climate change to conflict? No consensus yet', *Journal of Peace Research*, 45:3 (2008), 315–26; J. Scheffran et al., 'Disentangling the climate–conflict nexus: empirical and theoretical assessment of vulnerabilities and pathways', *Review of European Studies*, 4:5 (2012); O. M. Theisen et al., 'Is climate change a driver of armed conflict?', *Climatic Change*, 117:3 (2013), 613–25; S. M. Hsiang and M. Burke, 'Climate, conflict, and social stability: what does the evidence say?', *Climatic Change*, 123:1 (2013), 39–55; I. Salehyan, 'Climate change and conflict: making sense of disparate findings', *Political Geography*, 14 (2014), 1–5; M. Burke et al., 'Climate and conflict', *Annual Review of Economics*, 7 (2015), 577–617; H. Buhaug, 'Climate–conflict research: some reflections on the way forward', *Wiley Interdisciplinary Reviews: Climate Change*, 6:3 (2015), 269–75; J. Busby, 'Taking stock: the field of climate and security', *Current Climate Change Reports*, 4 (2018), 338–46.

historical, evidential and normative grounds, against attempts to link climate change and security.[10]

The treatment of climate security issues within the reports of the Intergovernmental Panel on Climate Change (IPCC) broadly reflects these disagreements and uncertainties. The IPCC's Third Assessment Report of 2001 conformed clearly to the popular and policy orthodoxy, foreseeing a 'destabilization of international order by environmental refugees' and the 'emergence of conflicts as a result of multiple climate change impacts' – even though little by way of supporting evidence was provided. The IPCC's 2007 report was rather different in tone but still suggested that, in Africa at least, 'climate change may become a contributing factor to conflicts in the future, particularly those concerning resource scarcity, for example, scarcity of water'. By contrast, the IPCC's Fifth Assessment Report of 2014 was both far more strongly evidence-based and much more equivocal, concluding that 'collectively the research does not conclude that there is a strong positive relationship between warming and armed conflict' and that '[c]onfident statements about the effects of future changes in climate on armed conflict are not possible'. While it is sometimes claimed that there now exists agreement that climate is a 'risk factor' in conflict, the measure of agreement is in truth exceedingly thin. Unlike within Western policy and media circles, among researchers there is at present no consensus on the question of climate security.[11]

[10] J. Zimmerer, 'Foreword', special issue on climate change, environmental violence and genocide, *International Journal of Human Rights*, 18:3 (2014), 263; G. Dyer, *Climate Wars: The Fight for Survival as the World Overheats* (Oneworld, 2008); J. Mazo, *Climate Conflict: How Global Warming Threatens Security and What to Do About It* (International Institute for Strategic Studies, 2010); H. Welzer, *Climate Wars: What People Will Be Killed for in the Twenty-First Century*, trans. P. Camiller (Polity, 2012); A. Alvarez, *Unstable Ground: Climate Change, Conflict and Genocide* (Rowman and Littlefield, 2017). Discourse critiques are discussed later in this chapter; the evidence on Darfur and Syria is interrogated in Chapter 3.

[11] J. B. Smith et al., 'Vulnerability to climate change and reasons for concern: a synthesis', in J. J. McCarthy et al. (eds.), *Climate Change 2001: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2001), 950; M. Boko et al., 'Africa', in M. L. Parry et al. (eds.), *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2007), 443; W. N. Adger et al., 'Human security', in C. B. Field et al. (eds.), *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press, 2014), 772–3; R. Nordås and N. P. Gleditsch, 'Climate change and conflict', *Political Geography*, 26:6 (2007), 627–38; R. Nordås and N. P. Gleditsch, 'IPCC and the climate–conflict nexus', paper presented at the International Studies Association annual convention 2009; N. P. Gleditsch and R. Nordås, 'Conflicting messages? The IPCC on conflict and human security', *Political*

Our Approach and Argument in Brief

This book is intended as a contribution to this simultaneously orthodoxy-dominated and scientifically contested intellectual and political terrain. It asks whether the public and policy climate security orthodoxy is well founded or is built instead on foundations of sand. It considers whether climate change– and resource scarcity–induced civil or inter-state conflicts are on the cards or not. It explores what sort of dynamics of conflict, instability and insecurity climate change and the responses to it might bequeath. And it reflects, in passing, on the diverse purposes, interests and agendas served by climate security discourse.

Our approach to these issues is qualitative and loosely comparative, focused on a specific aspect of the climate change challenge as well as on specific geopolitical spaces – and through that, seeking to tease out broader, more general conclusions. Our analysis focuses on water as a particularly crucial site of, and 'intervening variable' in, the claimed climate change–security relationship. It explores these water, climate change and security dynamics in relation to five contemporary 'divided environments': Israel–Palestine, Syria, Cyprus, Sudan–South Sudan and the Lake Chad region. It investigates not just the future but also the past and present links between climate, water and conflict within these five geographical spaces, and seeks to identify and explain similarities and differences across them. It is also theoretically informed, specifically by the tradition of political ecology and by what we label an 'international political ecology' approach to our subject matter, and takes periodic forays into theoretical debates on human–environment relations, conflict and security, international relations and the nature of our global capitalist order. Through all this, the book is intended to serve as a contribution not just to research on climate change and security but also to research on water politics and environmental security, and within the broad field of political ecology.

Our central argument, developed right through the book, is that the conflict and security implications of climate change are very different from those typically imagined within the climate security orthodoxy. Comparing across our five cases, we show that there exists no correlation between environmental resource scarcities on the one hand and water- and climate-related conflicts, vulnerabilities and insecurities on the other. Comparing across time, we show that in many respects the risks of climate, water and environmentally induced chaos are in historical decline and that this dynamic is unlikely to go into reverse in the

Geography, 43 (2014), 82–90; K. Mach et al., 'Climate as a risk factor for armed conflict', *Nature*, 571 (2019), 193–7.

foreseeable future, even under conditions of accelerating human-induced global warming. We demonstrate that while environment-related insecurities, vulnerabilities and conflicts are unfortunately all too real, these are much more determined by political and economic forces and power relations – by processes of state-building, war-making and development – than by environmentally defined resource scarcities, and that this is unlikely to change anytime soon either. We argue, by extension, that the conflict implications of climate change relate less to resource scarcities than to how climate change may transform, contribute to or legitimate new projects of state- and nation-building, development, appropriation and dispossession. We contend that the resource- and environment-centrism of most scholarship on climate security, and within some critical scholarship too, is both analytically and politically problematic. We argue for a very different, political ecology–informed approach to reflecting on the conflict and security implications of climate change – one which both recognises the irreducibly political character of contemporary environmental insecurities and views climate change, and the challenges it poses, as much more than a climatic or environmental problem. And lastly, as a theoretical contribution to political ecology, we stress the importance of international structures and relations within all these processes – adopting, illustrating and arguing for an 'international political ecology' approach to the study of environmental conflict, crisis and insecurity.

We are at risk of getting ahead of ourselves, however. For, before wading in too deep, we need first to explain and justify our approach, methods and premises. The remainder of this introductory chapter seeks to do just that. How, we need to ask, have others sought to investigate the conflict and security implications of climate change? What approaches have they adopted, and how have these approaches fared? What options are available to us? What methods are appropriate? Or, in short, how can we possibly know?

Questions of Method

There can be few objects of analysis where this 'how can we know?' question – this question of method – is more daunting than in the case of the claimed links between climate change and security. For, with the exception of the possible direct connection between high temperatures and aggressive behaviour, any climate change effects on patterns of conflict and instability would only be indirect, mediated via impacts on assorted environmental conditions and socio-economic structures and dynamics. Indeed, there are innumerable possible causal pathways between climate change and security, many of which involve long chains