

Against Future Generations

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Abstract

Future generations are invoked in the United Nations Framework Convention on Climate Change, and increasingly often in climate debate, as a locus of responsibility for present generations. In this article, I argue against this framing. I look at the historical context and rhetorical effects of a generational frame for both present and future generations, dwelling in particular on guiding conceptions of sacrifice and legacy as well as on the construction of future scenarios and the practice of future discounting. I conclude that the appeal to future generations obfuscates, rendering a series of critical boundaries diffuse, and, in doing so, abjures concrete urgent existing responsibilities towards those alive today in the same gesture that nominally assumes them for an abstract unformed future.

1 Introduction

Responsibility is commonly conceived of in two distinct ways: as something one has (or owes) or as something one takes on (or bears). Political and legal debate often centres on the task of aligning these two: assuming the responsibility that is, in fact, already one's due. One way to approach the climate problem is in terms of the profound misalignment between these two kinds of responsibility. Three cleavages are immediately evident: between states, classes and generations. Numerous low-carbon-emitting states find themselves on the front line as the planet warms: a responsibility – an imperative to respond – lands upon them that is not their due. Similarly, despite an immense carbon footprint (since emissions correlate with prosperity), wealthier individuals are far better placed to weather the storm than their poorer

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neighbours (since vulnerability correlates with poverty) – the latter are effectively responsabilized for something that is not their fault. Finally, although present generations fuel the climate crisis today, it is, it seems, future generations that will bear the brunt. In each case, although responsibility attaches to – is owed by – one group, it appears in practice that it is, or will be, shouldered – or borne – by another.

I am concerned in this article with the third of these cleavages, the question as to whether the responsibility to address climate change lies, or should lie, with present generations – a responsibility owed, in this formula, towards future generations. This long-standing framing of the climate problem, with roots in twin arcane worlds – of moral philosophy and United Nations (UN) norm building – has recently gone mainstream.¹ But it is a framing I am here going to argue against. Naturally, one cannot be ‘against’ future generations, if this means opposing, in some sense, the persons who will follow ‘us’ on this beautiful terse planet once we have gone, and, naturally, I am not. Naturally too, I am not claiming that primary responsibility for climate change does not lie with those alive now: I will argue just the reverse. Rather, my inquiry has to do with how responsibility is characterized in this register – the kind of relationship it inaugurates – and the practical consequences of choosing one characterization over another.

At an intuitive level, a future generations register is immensely appealing.² An implicit effect is to invoke children – our children, our children’s children or just ‘the children’ – a visceral rhetorical flourish that marries virtue and pride, altruism and sacrifice. It feels good and right to prioritize those coming after us. And it may also feel pragmatic. One intended effect of a ‘future generations’ frame is presumably an assumption of intra-generational identity or solidarity, aiming to defuse or subsume the often intractable struggles that have come to characterize climate debate. We – present generations – are, in this register, ‘all in it together’. Moreover, a future generations register is potentially empowering, reshuffling agency in two senses: first, climate action is no longer merely a matter for governments, negotiators or scientists but also for us ‘all’; second, counterposed to ‘future generations’, ‘we’, in the present, are in the driver’s seat (or we may believe we are), defining terms, choosing principles, taking action.

¹ Numerous delegates at the closing plenary of the 26th Conference of the Parties (COP-26), in Glasgow on 13 November 2021, of the United Nations Framework Convention on Climate Change (UNFCCC) 1992, 1171 UNTS 107, for example, invoked future generations to justify support for, or concerns about, the final text.

² The literature is extensive. I draw in particular on several of the essays reproduced in H. Shue, *Climate Justice: Vulnerability and Protection* (2014) and H. Shue, *The Pivotal Generation* (2022); several articles by Simon Caney, cited later in this article; several contributions to S. Gardiner (ed.), *Climate Ethics: Essential Readings* (2010); and to A. Gosseries and L.H. Meyer (eds), *Intergenerational Justice* (2009), notably Heyd, ‘A Value or an Obligation? Rawls on Justice to Future Generations’, in *ibid.*, 167; E. Page, *Climate Change, Justice and Future Generations* (2006); Lawrence, ‘Justice for Future Generations: Environment Discourses, International Law and Climate Change’, in B. Jessup, *Environmental Discourses in Public and International Law* (2012) 23. My critique of certain recurring motifs in this literature must be placed in the context of my enormous debt towards, and sympathy for, this impressive body of work.

In legal and political discourse, then, ‘present’ and ‘future’ generations are called forth in a certain manner to a certain effect: we owe a responsibility to them. But it is this very ‘we’ – and so, also, ‘them’ – that I aim to problematize in the following article. Whom do we mean when we speak of ‘future generations’? Whom do we set aside? Who gets to speak on behalf of either the future or the present? Future generations rhetoric calls up a pair of unfeasible trans-historical subjects – a concrete populace in its global entirety facing an abstract multitude across eternity – and posits a relationship between them that is neither feasible nor even plausibly imaginable. Why adopt this impossible subjectivity? Ethically rousing as these capacious signifiers are, I argue, they cannot sustain analytical precision or normative clarity. In the translation to policy, they rather obfuscate. By contrast, deeply compelling reasons to act precipitously on climate change are already clear-cut and extensive in regard to concrete persons alive today – without recourse to these nebulous, if attractive, categories.

To expand on the latter point, a turn to ‘future generations’ risks obscuring much that is already well understood in terms of (‘equitable’) climate responses. The register’s evocative call to solidarity risks papering over deep and substantive differences of interest and perspective, both today and in the future. If a responsibility towards future generations invokes sacrifice, it is coy as to whom, precisely, this sacrifice falls upon. Rather, I will argue, this register performs a reverse double move, abjuring responsibility in the same gesture that nominally assumes it. A generational frame also sweeps in those to whom a responsibility is owed today – those who, for historical and geographical reasons, already bear the brunt of climate inaction – and, in a perverse twist, makes them responsible too, demanding further sacrifice of them. Such a move deflects the urgency and scale of action required to meet the suffering of concrete persons alive now and seems likely to carry forward today’s structural inequities into the future. My title – ‘against future generations’ – thus has a second sense: the adoption of a ‘future generations’ register may, paradoxically, work against generations to come.

Some further short caveats are in order before I enter the argument. I am not arguing against imaginative engagement with the future: quite the reverse. Such is the accelerating pace of climate change that it is increasingly impossible to conceive of a present that is not already infused with the near and distant future. But this requires, it seems to me, a more profound reappraisal of futurity (which I do not undertake here) than the easy formulae deployed in most ‘future generations’ discourse. I am also not claiming that those alive today are not responsible for, and impelled to address, the profound destruction wrought by anthropogenic climate change. Again, quite the reverse. ‘We’ – but really a (sizeable) minority of us – are, in effect, shaping, even colonizing, future lives and lifestyles, just as past generations colonized the lives of (many) of us alive today. My concern is that ‘our’ mode of interpolating ‘them’, as the nominal beneficiaries of an imagined munificence repeatedly postponed, merely repeats this ancient gesture again. A better answer lies closer to home.

2 Rhetorical Ambiguity

Appealing though it is (who, after all, is not ‘for’ future generations!?), I will argue that the rhetorical turn to ‘future generations’ stands to obscure both the agency and vulnerability attributable to climate change, while forgetting or bracketing existing and well-known climate imperatives. It creates a kind of appealing epistemological fog, tending to obscure and diminish the true scale and immediacy of necessary climate action. This is because the language entails, or resorts to, a series of ambiguities that are, I believe, essentially undecidable. I lay these out in the remainder of this section, turning then to the structure of the article as a whole.

A first ambiguity within ‘future generations’ discourse lies in the disconnect between local and global. Moral philosophers generally intend the register to apply universally to all future generations everywhere (though there are exceptions).³ Indeed, it seems plausible that, for some commentators at least, the register intends to pick up the mantle of a kind of global constitutionalism that has largely foundered in other domains. So, for example, Stephen Gardiner – a key and consistently clear climate ethicist – recently made the case for a ‘global constitutional convention focused on future generations ... charged with representing humanity [and] establish[ing] institutions with a broad remit and ongoing responsibility to act on intergenerational threats’.⁴ Henry Shue too has raised the suggestion of the need for new global institutions focused on both ‘international justice’ and ‘intergenerational justice’, and others have made similar suggestions.⁵

A new global constitutional, or even institutional, order seems a worthy goal. It is also one that has long exercised the discipline of international law, wherein, however, it has not fared well.⁶ The ‘fragmented’ field that has long prevailed in place of a global constitutionalism – according to international law scholars – is also implicitly recognized by the Intergovernmental Panel on Climate Change (IPCC) as the problem

³ Such as Rawls. See text at note 43 below; Heyd, *supra* note 2, is also doubtful.

⁴ Gardiner, ‘On the Scope of Institutions for Future Generations: Defending an Expansive Global Constitutional Convention That Protects against Squandering Generations’, 36 *Ethics and International Affairs* (2022) 157.

⁵ Shue, ‘Human Rights, Climate Change, and the Trillionth Ton’, in Shue, *Climate Justice*, *supra* note 2, 297, at 302–303; see also section 7.B. Simon Caney recently put forward 10 proposals of a generally modest nature, ranging from representation within various United Nations (UN) bodies to a ‘global citizens’ assembly. Caney, ‘Global Climate Governance, Short-Termism, and the Vulnerability of Future Generations’, 36 *Ethics and International Affairs* (2022) 137.

⁶ The literature is large and the debate beyond the scope of this article. An excellent account remains M. Koskeniemi, *From Apology to Utopia* (2005 [1989]), especially ch. 7 (noting – albeit with greater nuance than I can supply here – that ‘the formal character’ that allows international law to function in practice ‘makes the law fail as a normative project’; at 475). To wit, a recent collection of essays proposing various institutions for future generations clarifies that they rest ‘on explicit normative grounds belonging to theories of justice and legitimacy’. González-Ricoy and Gosseries, ‘Designing Institutions for Future Generations: An Introduction’, in I. González-Ricoy and A. Gosseries (eds), *Institutions for Future Generations* (2016) 3.

of ‘climate governance’.⁷ More to the point, it is far from clear that states (in the guise of policy-makers and negotiators), where they adopt the language of ‘future generations’, intend it to underpin a new global constitutionalism – especially given the urgency of climate action – and almost certain that, even if they do, they will, for practical as well as legal reasons, tend to retreat to ‘their own’ institutional levers rather than prioritizing any new trans-global and/or trans-historical project – at least ‘at present’ (that is, within a time frame that would shield today’s ‘future generations’ from climate change). This regression to the national is illustrated, in different ways, in the existence of actual (national) future generations commissions, on the one hand,⁸ and in contemporary climate litigation, on the other.⁹ Indeed, anything else would be not merely surprising but close to revolutionary.

To this, one might respond that the sum of ‘future generations’ locally amounts to their aggregate globally – if ‘we’ act for ‘our’ future generations, all future generations everywhere will benefit. But a moment’s consideration will show this to be incorrect, if not dangerously misleading. With their ‘own’ future generations in view, many rich countries will (hopefully) pursue rapid mitigation, but some may decide instead to prioritize adaptation; others again might choose not to force the pace of mitigation since (in a cruel irony) some may actually expect to benefit from a global average temperature rise of two to three degrees Celsius.¹⁰ Whereas for many developing countries (notably, small island states), immediate global mitigation is an existential matter right now, for others, especially those rich in fossil fuels, the trade-offs point towards rapid

⁷ On the ‘fragmentation of international law’, see Report of the Study Group of the International Law Commission, ‘Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law’, UN Doc. A/CN.4/L.682, 13 April 2006. On ‘climate governance’, see Humphreys, ‘Ungoverning the Climate’, 11 *Transnational Legal Theory* (2020) 244.

⁸ See, e.g., Future Generations Commissioner for Wales, available at www.futuregenerations.wales. A 2013 report of the UN Secretary General lists comparable institutions in Canada, Finland, Hungary, Israel and New Zealand, though two had by then been disbanded. Intergenerational Solidarity and the Needs of Future Generations: Report of the Secretary-General, UN Doc. A/68/322, 15 August 2013, paras 39–48.

⁹ On the German Constitutional Court ruling of 2021 (*Neubauer et al. v. Germany*), see note 128 below. On the Colombian ‘future generations’ case – surely the exception that proves the rule, with its finding that the ‘environmental rights of future generations are based on the (i) ethical duty of the solidarity of the species and (ii) on the intrinsic value of nature’ and that ‘we are all obligated to stop exclusively thinking about our self-interest’ (*Andrea Lozano Barragán, et al. v. Presidencia de la República et al.*, Sentencia de la Corte Suprema de Justicia del 5 de abril del 2018, MP Luis Armando Tolosa Villabona, STC4360-2018, Radicación No 11001-22-03-000-2018-00319-01), paras 5.1 and 5.3) – see Acosta Alvarado and Rivas-Ramirez, ‘A Milestone in Environmental and Future Generations’ Rights Protection: Recent Legal Developments before the Colombian Supreme Court’, 30 *Journal of Environmental Law* (2018) 519. These cases, and most such to date, are based on the rights of children alive today. See Donger, ‘Children and Youth in Strategic Climate Litigation: Advancing Rights through Legal Argument and Legal Mobilization’, 11 *Transnational Environmental Law* (2022) 269.

¹⁰ See, e.g., Intergovernmental Panel on Climate Change (IPCC), *Contribution of Working Group II to the Sixth Assessment Report* (2021), ch. 13 (‘Europe’) at 13-3, 13-8 and especially FAQ 13.4; ch. 14 (‘North America’), at 14-41, 14-60, 14-77; ch. 10 (‘Asia’), at 10-4. See also the maps produced in S. Bernard *et al.*, ‘Climate Change Could Bring Near-Unliveable Conditions for 3bn People, Say Scientists’, *Financial Times* (1 November 2021), citing Xu *et al.*, ‘Future of the Human Climate Niche’, 117 *Proceedings of the National Academy of Sciences* (2020) 11350.

fossil fuel-based expansion now paired with costly adaptation later.¹¹ The stakes are high and contentious: the point is that many contradictory policies are compatible with prioritizing future generations.

Second, future generations discourse is ambiguous as to where ‘present’ stops and ‘future’ starts. There is, of course, no clear-cut answer to this question – indeed, the very notion of temporal generations resists clarification: our living children or grandchildren are not ‘future’ persons at all, whereas actual future persons transit into the present in a constant stream (or flood).¹² But there are nevertheless two clearly distinct approaches that often appear fudged in a ‘future generations’ register (with some exceptions), particularly when something called ‘intergenerational equity’ (or ‘justice’) is counterposed to its ‘intra-generational’ partner.¹³ The term ‘intergenerational’ is inherently ambiguous, referring both to relations between different current generational cohorts (‘boomers’, ‘millennials’, generations x, y and z and so forth) as well as between those alive now and in the (potentially far distant) future. Understandably perhaps, given the lack of a clear boundary, the literature slides easily between these two,¹⁴ but I think it helpful to maintain a distinction between what we might call a diachronic analysis – one concerned with variation across time – and a synchronic one – viewing variance globally at a certain moment in time.¹⁵

In most formulations, the language of ‘future generations’ intends a diachronic analysis. So Simon Caney, for example, who has made enormous contributions in this domain, suggests that the ‘duties’ of present generations extend ‘as far into the future as the effects of [our] actions (and inactions)’: he asks us to consider the ‘rights’ of those alive as long as carbon emitted today remains airborne, at least 1,000 years hence.¹⁶ Henry Shue also asks us to consider the sixth, seventh and even thirteenth generations beyond the present.¹⁷ Any consideration of cohorts (if that is the correct term) such as these raises well-known problems of abstraction, non-reciprocity

¹¹ For example, the *Financial Times* quotes Macky Sall, president of Senegal and chair of the African Union, as follows: ‘We will not accept that polluting countries, responsible for the situation of the planet, tell us that we are no longer going to finance fossil fuels.’ D. Pilling, ‘Calls for a Just Energy Transition in Africa Carry Echoes of Elite Panic’, *Financial Times* (10 July 2022).

¹² Caney, ‘Justice and Posterity’, in R. Kanbur and H. Shue (eds), *Climate Justice: Integrating Economics and Philosophy* (2018) 157, at 160–161 (‘a “generation,” however, defined, is a somewhat arbitrary and artificial unit that does not have any intrinsic value. Ontologically it is also odd to divide the future of humanity into separate and discrete chunks – a generation 1, generation 2, and so on – rather than see a flow of future people’). Caney nevertheless does speak, in this article and others, in terms of generations broadly conceived.

¹³ The term ‘intergenerational equity’ appears in the preamble to the Paris Agreement on Climate Change, UN Doc. FCCC/CP/2015/L.9/Rev.1, 12 December 2015, whereas Article 3(1) of the UNFCCC, *supra* note 1, refers to ‘future generations’.

¹⁴ But see Heyd, *supra* note 2; Nolt, ‘Long-term Climate Justice’, in Kanbur and Shue, *supra* note 12, 230.

¹⁵ On the distinction between ‘diachronic’ and ‘synchronic’, the *locus classicus* is E. de Saussure, *Cours de linguistique générale*, edited by C. Bally and A. Sechehaye (1916).

¹⁶ See Caney, *supra* note 12, at 163. He notes the criterion might create climate-related duties over 100,000 years, the duration of about 10 per cent of emitted carbon dioxide.

¹⁷ Shue, *Responsibility to Future Generations and the Technological Transition* (2005), reprinted in Shue, *Climate Justice*, *supra* note 2, 225, at 232.

and ‘non-identity’ within a context of profound agnosis about future conditions.¹⁸ ‘Present generations’, by contrast, even in their intergenerational guise, do not raise these difficult questions. I will here reserve the term ‘intergenerational’ for the future (‘properly so-called’, so to speak) and ‘present generations’ for a generational present.¹⁹ (The term ‘intra-generational’ is less problematic, helpfully capturing a temporal radius buffering the present beyond the forever vanishing ‘urgency of now’.)²⁰

A third ambiguity has to do with climate policy. Future generations discourse foregrounds mitigation: adaptation is not entirely absent, but its role is, at best, marginal.²¹ This is unsurprising: the essential motive of this register is rapid ramping down of carbon emissions. What future generations deserve, it is said, is a world as little altered as possible (by climate change at least) from the one present generations have known: this entails mitigation at a very rapid clip, ideally fast enough to render adaptation secondary if not outright unnecessary. For the same reason, presumably, we hear little about ‘loss and damage’ or climate migration in this register: key climate policy concerns, certainly, but of less relevance in a climate-unchanged world.

Given how much is at stake today in these areas (adaptation, migration, ‘loss and damage’) and that these matters exist in symbiotic tension with actual mitigation policy,²² this relative silence is profoundly problematic. Rather more glaringly absent, however, is the policy domain that goes by the clunky term ‘technology transfer’, which is climate law’s name for the idea that, given their historical responsibility and greater wherewithal, wealthier countries should contribute materially – through intellectual property waivers, for example – to the transition of poorer countries to low-carbon and climate-adaptive economies.²³ Even though the international law regarding technology transfer is itself ambiguous, it is difficult to imagine from a political or practical (not to say ‘just’ or ‘equitable’) perspective how rapid mitigation can be global without significant transfers of some sort, but these have not been forthcoming.²⁴ On current trends, global mitigation will either be achieved at the cost of entrenched local poverty and immiseration or (more likely, since affected states will not agree) not at

¹⁸ The ‘non-identity’ thesis, introduced by Derek Parfit, *Reasons and Persons* (1987), points out that the identity of any actual future persons will be contingent upon whatever actions are undertaken in the present: their existential indebtedness to previous generations obviates any potential harms they might be thought to have experienced due to the latter’s actions. See Caney, ‘Cosmopolitan Justice, Responsibility, and Global Climate Change’, 18 *Leiden Journal of International Law (LJIL)* (2005) 747; Page, *supra* note 2, ch. 6; but see Shue, *supra* note 17, at 236.

¹⁹ That is, conceived within a temporal radius comprising a generational buffer of 20-odd years. This aligns with Henry Shue’s ‘pivotal generation’, although my sense is that each succeeding present generation will also be ‘pivotal’ in his sense. Shue, *Pivotal Generation*, *supra* note 2, at 10.

²⁰ David Heyd writes: ‘[W]e usually feel solidarity with the next two generations (of our society). And maybe that is the limit we can expect in the scope of our duties to future people.’ Heyd *supra* note 2, at 187.

²¹ For example, the 24 contributions to González-Ricoy and Gosseries, *supra* note 6, barely mention climate adaptation. An exception – with which I engage below – is Shue’s *Pivotal Generation*, *supra* note 2. See text at note 134 below.

²² See, e.g., text at note 143 below.

²³ See Humphreys, ‘Climate, Technology, Justice’, in A. Proelss (ed.), *Protecting the Environment for Future Generations: Principles and Actors in International Environmental Law* (2017) 171.

²⁴ For an excellent analysis of the extent of interstate transfers that would align with differential responsibility and capacity, see P. Baer *et al.*, *Greenhouse Development Rights* (2009).

all.²⁵ Indeed, the relative silence on this matter in future generations literature risks repeating the heedless West-centrism that prefigured the 1972 Stockholm Conference on the Human Environment: prioritizing the *status quo* for ‘developed’ countries by ‘kicking the ladder’ from beneath the (then newly postcolonial) rest.²⁶ The appeal to ‘future generations’ risks, in this gesture, clothing a parochial interest in universal garb.²⁷

Fourth, ‘future generations’ discourse invokes sacrifice, but, as noted above, it is unclear upon whom it falls. A driving motif is that ‘our’ sacrifice today avoids ‘their’ sacrifice later.²⁸ But framing the climate problem in this way obscures the stakes of a responsibility-sacrifice nexus as it plays out in fact in both present and future alike. This is because both the progress of climate impacts and the exigencies of climate policy distribute real-world sacrifice in radically unequal ways. For some, rapid mitigation – a ‘green deal’, for example – is relatively costless and even beneficial. For others, it risks entrenching endemic poverty. For some, climate impacts are a death sentence even now; for others, they are an adaptation challenge or even an economic opportunity. An apparently expansive concern for homogenous ‘future generations’ – for their supposed autonomy and non-colonization – belies the degree to which the distribution of sacrifice in the present prefigures that in the future. A future generations register has the quality of easy virtue – rapid mitigation is, after all, imperative – but even successful global mitigation that cannot answer the UN Framework Convention on Climate Change’s (UNFCCC) oldest question – the one labelled ‘equity’ – will consign actual future generations to conflict and ‘resilience’.²⁹

To premise action on a responsibility towards future generations implicitly suggests that the extraordinary climate impacts now experienced around the world are not in themselves a sufficient motive for immediate action. However, this begs the question as to what threshold of sacrifice would be adequate. Do we need to fear a coming apocalypse in order to act now (as a surprising amount of the literature suggests)? The problem here is not so much the signalling of an implicit threshold; it is more the creeping relativity that it entails. For while rapid global mitigation serves (and so, in principle, ‘saves’) present and future persons alike, the discourse appears to bracket or forget both the hugely inequitable costs of rapid mitigation for many people in much

²⁵ For an early statement of this truism, see Agarwal and Narain, ‘Global Warming in an Unequal World: A Case of Environmental Colonialism’ (1991), available at <https://doi.org/10.1093/oso/9780199498734.003.0005>; and Shue, ‘Subsistence Emissions and Luxury Emissions’ (1993), reprinted in Shue, *Climate Justice*, *supra* note 2, 47.

²⁶ See section 3, especially text at note 40 below. A. Wu, ‘Sustaining International Law: History, Nature, and the Politics of Global Ordering’ (2018) (PhD thesis on file at London School of Economics, London), at 113–156; Mickelson, ‘South, North, International Environmental Law, and International Environmental Lawyers’, 11 *Yearbook of International Environmental Law* (2000) 52.

²⁷ See, e.g., Heyd, *supra* note 2, at 178.

²⁸ See, e.g., Page, *supra* note 2, at 53 ([the] principles which are integral to Article 3 of the UN Framework Convention on Climate Change often converge in requiring large sacrifices of present persons to protect the environment bequeathed to future generations, but are motivated by very different ethical positions’).

²⁹ See Article 3(1) of the UNFCCC, *supra* note 1. This point is clearly made in the future scenarios literature. See section 5 below.

of the world as well as the actual sacrifice entailed by climate change already. The insidious effect is to prioritize one group's sacrifice (ours, of our lifestyles, here in the planet's wealthier corners) over another's (theirs, of their aspirations, there in 'emerging markets'), both now and in the future. This has the further paradoxical effect of making a future generations literature 'all about us', subject to our changing whims and priorities as to the kind of 'good life' we can imagine for our grandchildren.

Ultimately, the language of future generations repositions the climate imaginary away from the vital, already urgent, stakes that constitute it as a problem here and now, projecting them instead into an amorphous fictional arena in which a notional motley 'we' is produced as agent and assigned a full plenary power, so to speak, to act for an equally notional 'them'. In doing so, this discourse tends to redirect the notion of responsibility away from well-established themes in the known and knowable present – adaptation, 'loss and damage', technology transfer, 'climate migrants' – towards vague abstract entities in a notional unbounded and ultimately unknowable future.

The article proceeds as follows. The next section tracks the background to the rise of a 'future generations' register in the early 1970s. Following this, I ask first 'who are we?' in a fourth section and 'who are they' in a fifth section, focusing in the latter on climate scenarios. A sixth section explores the nexus of responsibility and sacrifice drawing on the work of Jacques Derrida. A seventh section sets out the specific question of 'legacy' – what do 'we' owe 'them' – looking at the seminal work of Henry Shue in light of a 2021 ruling of the German Constitutional Court. A penultimate section examines the practice of discounting before I then conclude.

3 Summoning the Future

The invocation of 'future generations' in climate literature marks the continued indebtedness of climate debate to its early environmentalist framing. The writers and activists – John Muir, Julian Huxley, Rachel Carson – whose work foreshadowed the rise of institutional environmentalism in the 1970s drew on long-standing theological and (later) Romantic imagery casting humankind as stewards of the natural world 'for posterity' or, in later colonial-tinged language, as 'trustees' on behalf of others.³⁰ However, the pivotal events punctuating the emergence of contemporary environmentalism – the 1972 Stockholm Conference on the Human Environment and the so-called Club of Rome's canonical *The Limits to Growth* report published that same year – framed environmental concern in terms of future shock, population explosion, natural resource exhaustion and irreversible pollution.³¹

³⁰ Humphreys and Otomo, 'Theorizing International Environmental Law', in A. Orford and F. Hoffmann, *The Oxford Handbook of the Theory of International Law* (2016) 798; Wu, 'Bridging Ideologies: Julian Huxley, Détente, and the Emergence of International Environmental Law', in M. Craven, S. Pahuja and G. Simpson (eds), *International Law and the Cold War* (2019) 189.

³¹ D. Meadows *et al.*, *The Limits to Growth* (1972); Stockholm Declaration on the Human Environment, 16 June 1972, 11 ILM 1416 (1972); see also Wu, *supra* note 26, ch. 4.

From the outset, it was clear that these global concerns, now framed as ‘environmental’, also constituted long-term threats to what was already, by then, a global economy. This itself was not new – the possibility of resource depletion was regularly confronted in the late colonial period and became a subject of international treaty making by 1900 at the latest.³² But *Limits to Growth*, written by a self-styled ‘invisible college’ of largely private sector analysts, was specifically concerned with the future writ large, projecting catastrophe in order to avoid it, drawing on the then new science of computer modelling, with a view to reorienting investment to facilitate what the authors called ‘the great transition’ from ‘growth to global equilibrium’.³³ This requires, according to the report, ‘weigh[ing] the trade-offs engendered by a finite earth not only with consideration of present human values but also with consideration of future generations’.³⁴ (The repetitive prose gives a flavour of the report’s imaginative constraints.)

Limits to Growth also considered the identity – or, at least, the number – of these ‘future generations’, devoting considerable space to the theme of ‘population explosion’.³⁵ An ominous graph purports to show that ‘urban population is expected to increase exponentially in the less developed regions of the world, but almost linearly in the more developed regions’, with absolute numbers in poor countries set to overtake richer nations in the mid-1970s and then take off.³⁶ The graph seeds the sort of arching linear bloom that is now a commonplace of climate literature.

The ‘world problématique’ animating the report is the expected fact (predicted by the authors’ new digital ‘world model’) that, with future economic growth, ‘the birth rate declines gradually, [while] the death rate falls more quickly’, leading to a global population increase that will ultimately breach the planet’s ‘limits to growth’, causing sudden resource and population collapse – almost certainly by 2072.³⁷ To ward off this trajectory, according to the report, ‘[e]ither the birth rate must be brought down to equal the new, lower death rate, or the death rate must rise again’.³⁸ The latter is our Malthusian fate, the report makes clear, unless something is done. To avoid it requires ‘deliberate action to control the ... birth rate’ and achieve what it calls ‘the desired birth rate’, ideally one that precisely matches the death rate, achieving the golden mean: equilibrium.³⁹

In the same year that *The Limits to Growth* appeared, a nascent post-colonial ‘international community’ struggled towards its first significant environmental conference in Stockholm in 1972. The run up to Stockholm was marked – in a story masterfully

³² Humphreys and Otomo, *supra* note 30. See International Convention on the Conservation of Wild Animals, Birds and Fish in Africa 1900, 188 ConTS 418; see also General Agreement on Tariffs and Trade 1947, 55 UNTS 194, Art. XX(g).

³³ Meadows *et al.*, *supra* note 31, at 24.

³⁴ *Ibid.*, at 182.

³⁵ *Ibid.*, at 25.

³⁶ *Ibid.*, at 27.

³⁷ *Ibid.*, at 125; see also P. Edwards, *A Vast Machine* (2010), at 361–372.

³⁸ Meadows *et al.*, *supra* note 31, at 157–158.

³⁹ *Ibid.*, at 112–113 (‘[t]he *desired birth rate* is the rate that would result if the population practiced “perfect” birth control and had only planned and wanted children’); 159–161.

told by Aaron Wu – by extensive behind-the-scenes machinations to persuade developing governments, many of which had just achieved independence, that the global North's sudden concern about 'the environment' was not aimed merely 'to stabilise the "economic gap between developed and developing countries"' (in the words of the Brazilian UN ambassador) by kicking the ladder of economic development out from beneath the new states.⁴⁰ The compromise, brokered by Canadian Secretary-General Maurice Strong, allowed the conference to proceed by knitting 'development' and 'conservation' uneasily together in the resulting Declaration on the Human Environment.⁴¹ The declaration provided a prototype of the notion of 'sustainable development' and asserted, in its opening breath, that 'Man ... bears a solemn responsibility to protect and improve the environment for present and future generations'.⁴²

In addition, in 1971, John Rawls published *A Theory of Justice*, containing a passage on 'intergenerational justice', comprising an early philosophical treatment of this theme.⁴³ The passage proposes that each generation owes it to 'future generations' not only to 'preserve the gains of culture and civilization, and maintain intact those just institutions that have been established, but it must also put aside in each period of time a suitable amount of real capital accumulation'.⁴⁴ Rawls refers to this as a 'just savings' principle.⁴⁵ Rawls takes an explicitly teleological view of historical progress, in which each generation represents a 'phase of civilization' tending towards a 'last stage of society' in which 'just institutions' will finally have been achieved, at which point the onus on each generation is to preserve them for the next.⁴⁶ This is not the place for a fuller critique of this thesis – which is influential if clearly problematic – but a few points need remarking.⁴⁷ First, Rawls' 'just institutions' exist within a political community; although he is not clear on the matter, the larger context of his work would tend to presume against significant extraterritorial duties.⁴⁸ Second, Rawls prioritizes 'just savings' over his 'difference principle', which is Rawls' term for a limited duty to assist the disadvantaged – that is, to sharpen the point, future 'liberty' takes precedence over present 'equality'.⁴⁹ Third, even so, Rawls rejects the 'utilitarian' view

⁴⁰ Wu, *supra* note 26, at 123 (citing José Augusto de Araújo Castro); see generally 118–131.

⁴¹ Stockholm Declaration, *supra* note 31.

⁴² *Ibid.*, Principle 1.

⁴³ J. Rawls, *A Theory of Justice* (1971), at 284–292; see, e.g., Heyd, *supra* note 2, at 169.

⁴⁴ Rawls, *supra* note 43, at 285.

⁴⁵ *Ibid.*, at 289.

⁴⁶ *Ibid.*, at 287 ('[e]ventually once just institutions are firmly established, the net accumulation required falls to zero. At this point a society meets its duty of justice by maintaining just institutions and preserving their material base'); 289.

⁴⁷ Critiques are put forward in Shue, *Pivotal Generation*, *supra* note 2, at 13–14, 105–111; Lawrence, *supra* note 2, at 40–41 (citing Vanderheiden); Heyd, *supra* note 2; see also Caney, *supra* note 12, at 158–162; Shue, 'A Legacy of Danger: The Kyoto Protocol and Future Generations', in Shue, *Climate Justice*, *supra* note 2, 208, at 216.

⁴⁸ Heyd, *supra* note 2, at 183–185.

⁴⁹ Rawls, *supra* note 43, at 289; Paden, 'Rawls's Just Savings Principle and the Sense of Justice', 23 *Social Theory and Practice* (1997) 27, at 29.

that present generations should make great ‘sacrifices’ today to support larger (and/or wealthier) populations tomorrow.⁵⁰

As a policy matter, the explicit desirability of global population control moved to the margins of international development thinking after *Limits to Growth*, though never quite disappearing (as we shall see).⁵¹ But it hovers unspoken in the spate of references to future generations that appeared subsequently, such as in the canonical textbook definition of ‘sustainable development’ in the 1987 Brundtland report, as that ‘which meets the needs of current generations without compromising the ability of future generations to meet their own needs’ – the implicit assumption being that future ‘needs’ can be anticipated as long as they are bounded.⁵²

Two years after the Brundtland report, Edith Brown Weiss’ *In Fairness to Future Generations*, published by the UN University, developed a sustained polemic arguing that ‘each generation is entitled to inherit a planet and cultural resource base at least as good as that of previous generations’.⁵³ Brown Weiss’ work is synthetic and intuitive, explicitly connecting Rawls to the Stockholm Declaration and the new notion of ‘sustainable development’.⁵⁴ The heart of the argument extends to future generations what some have called the ‘Lockean proviso’ on resource use.⁵⁵ This refers to John Locke’s recommendation that the private acquisition of natural resources from ‘the commons’ be limited to cases ‘where there is enough, and as good, left in common for others’.⁵⁶ Views differ on how to interpret this nostrum, but Locke himself clearly intended the proviso to apply in a supposed ‘state of nature’ (regarding, for example, his personal investments in 1680s Virginia),⁵⁷ being subsequently subordinated to, and subsumed within, the contractual, legal, political and financial institutions of a superseding state or ‘civil society’.⁵⁸ That is, the ‘proviso’ does not govern the actual resource management of a state-based order: rather, as Edward Page underlines, it justifies existing resource allocations on a notional historical basis.⁵⁹ Brown Weiss proposes an intergenerational ‘partnership’ (or contract) that would lock in the Lockean proviso under international law as though the international realm were itself a kind of ‘state of nature’.

⁵⁰ Rawls, *supra* note 43, at 286–287. Though the argument is not crystal clear. See Page, *supra* note 2, at 107.

⁵¹ See Ranganathan, ‘Global Commons’, 27 *European Journal of International Law* (2016) 693. See section 5.

⁵² World Commission on Environment and Development, *Our Common Future* (1987).

⁵³ E. Brown Weiss, *In Fairness to Future Generations: International Law, Common Patrimony and Intergenerational Equity* (1989), at 25; Caney, *supra* note 12, at 159.

⁵⁴ Brown Weiss, ‘In Fairness to Future Generations and Sustainable Development’, 8 *American University International Law Review* (1992) 19, at 21; Brown Weiss, ‘Our Rights and Obligations to Future Generations for the Environment’ 84 *American Journal of International Law* (1990) 198.

⁵⁵ Brown Weiss, *supra* note 53, at 19. The term is Robert Nozick’s.

⁵⁶ J. Locke, *Second Treatise of Government* (1689), ch. 5, s. 27.

⁵⁷ *Ibid.*, s. 49; see generally Welchman, ‘Locke on Slavery and Inalienable Rights’, 25 *Canadian Journal of Philosophy* (1995) 67.

⁵⁸ For an account of the varying views in this debate, see A. Tuckness, ‘Locke’s Political Philosophy’, *Stanford Encyclopedia of Philosophy* (2020).

⁵⁹ Page, *supra* note 28, at 52–53.

In 1992, shortly after the Brundtland report and Brown Weiss' book, the world's states signed the Rio Declaration and the UNFCCC, agreeing to 'protect the climate system for the benefit of present and future generations of humankind'.⁶⁰ So we have present generations and future generations. But who are these people?

4 Who Are We?

The default subject in writing about future generations is an expansive first-person plural: 'we'.⁶¹ This is in part, of course, a simple effect of grammar: the very invocation of a 'future generation' reflexively collectivizes the present, casting the global population as a whole in the role of subject. This is not the courteous, if vacuous, 'we' that habitually signposts academic papers, as we shall see(!). Rather, this 'we' envisages an agent, a subject of specific rights and duties, a collective – even corporate – entity that makes decisions, represents interests, enjoys discretion and holds obligations. It is easy to see the appeal of this adopted persona. Affectively, 'we' invokes home – a planetary home in this case – but it also signals house rules. At the outset, it seems correct to assume that this constructed agent involves – consciously or not – an invitation to solidarity – one that is irresistible in its inclusivity: to join a universal association, a community of fate, a communion of souls. One does not have to agree with Carl Schmitt to marvel at the sheer scale of this gesture, uniting all of humanity across the globe, now and forever.

Politically, a universal 'we' stands to slice through the seemingly intractable obstacles that have dogged climate action for decades: the ethically irreproachable, but politically thorny, appeals to 'equity' and 'common but differentiated responsibilities' upon which half the world insists; the refusal to cede, or recognize liability or compensation, that characterizes the other half.⁶² An appeal to 'intergenerational equity' promises to override this standoff – or to bracket it at least – with perhaps the background hope that the current paralysis will dissolve in the miraculous solvent of the *longue durée*. Finally, something we can all agree on: a better life for all of our children and our grandchildren, even if that is clearly not what is in store.

If this is correct, the stakes are high indeed. To clarify, I will briefly recount in this paragraph the story of who 'we' have been over the 30-year history of climate talks so far. A group of 'developing' countries (in UN speak), comprising a majority of the global population, have little historical responsibility for climate change but stand to

⁶⁰ Rio Declaration on Environment and Development 1992, 31 ILM 874 (1992); UNFCCC, *supra* note 1, Art. 3(1).

⁶¹ See contributions to M. Düwell, G. Bos and N. van Steenberg (eds), *Towards the Ethics of a Green Future: The Theory and Practice of Human Rights for Future People* (2018). See, e.g., Düwell, Bos and van Steenberg, 'Introduction', in *ibid.*, 1, at 1; Düwell and Bos, 'Why Rights of Future People?', in *ibid.*, 9, at 11; Spangenberg, 'Looking into the Future' in *ibid.*, 48, at 48; Zwarthoed, 'Political Representation of Future Generations', in *ibid.*, 79, at 82; see also contributions to Gossery and Meyer, *supra* note 2; see, e.g., Wolf, 'Intergenerational Justice, Human Needs, and Climate Policy', in *ibid.*, 347, at 347.

⁶² Callieri, Serdeczny and Vanhala, 'Making Sense of the Politics in the Climate Change Loss and Damage Debate', 64 *Global Environmental Change* (2020) 102133, at 4–5.

lose enormously if they abandon fossil fuels without alternative means to ‘develop’ (at the time of writing, almost half the world still lives on less than US \$165 per month in real terms).⁶³ These countries, therefore, have made their participation in global mitigation efforts conditional on support from the wealthier and historically responsible countries: funding towards adaptation, the transfer of technologies, and compensation for actual losses and damages – all contentious elements of the UNFCCC regime.⁶⁴ The 1992 UNFCCC aimed to incorporate these concerns through the principles of reciprocal solidarity (‘common but differentiated responsibilities’) and ‘equity’, the latter term notably carried into the 2015 Paris Agreement.⁶⁵ But in the three decades since the UNFCCC’s entry into force, the wealthier countries have been slow to do their bit: they have not met even their own (grudging and inadequate) promises to fund adaptation in poorer countries, largely blocked technology transfer, and explicitly refused to provide ‘compensation’ for ‘loss and damage’.⁶⁶ For their part, developing countries have begun to accept mitigation targets, while still making their ambition conditional on transfers to meet growing adaptation and technology needs.⁶⁷

The register of future generations also invokes solidarity but on a different basis. The gesture is apparently premised on altruism, though now modelled, it seems, on the parent/child or guardian/ward relation rather than on reciprocity and/or historical responsibility.⁶⁸ This register de-emphasizes past responsibility in favour of future responsibility. It is, then, a language not only of non-reciprocity but also of redemption. As foreshadowed in my introduction, it counterposes the sacrifice of taking action now against the sacrifice later for action not taken now. To speak of ‘future generations’ sets up these two in opposition: ‘we’ (all of us – developed and developing nations alike – in this new solidarity) sacrifice something in order that ‘they’ need not

⁶³ The case was put early and well in Agarwal and Narain, *supra* note 25. For a recent synthetic account, see Grubb and Okereke, ‘Introduction and Framing’, in IPCC, *Working Group III Contribution to the Sixth Assessment Report* (2022) 1-1, at 1-38–1-44. On current poverty figures, see R.A. Castaneda *et al.*, March 2021 Global Poverty Update from the World Bank, 16 March 2021. For commentary, see J. Hickel, ‘Extreme Poverty Isn’t Natural, It’s Created’ (28 March 2021), available at <https://www.jasonhickel.org/blog/2021/3/28/extreme-poverty-isnt-natural-it-is-created>.

⁶⁴ Humphreys, *supra* note 23; Humphreys, ‘Climate Change, Development, and Human Rights’, in S. Marks and B. Rajagopal (eds), *Critical Issues of Human Rights and Development* (2021) 66.

⁶⁵ Paris Agreement, *supra* note 13.

⁶⁶ Humphreys, *supra* note 23. On ‘loss and damage’, see Callieri *et al.*, *supra* note 62. The COP decision accompanying the 2015 Paris Agreement explicitly notes that the parties ‘agree’ that ‘Article 8 of the [Paris] Agreement [on loss and damage] does not involve or provide a basis for any liability or compensation’. See Paris Agreement, *supra* note 13, para. 52. The point was reiterated by key political figures preparing in the run-up to COP 27 in Sharma El-Sheikh in November 2022. See Chatham House, *The Road to COP27: In Conversation with US Special Presidential Envoy for Climate John Kerry*, 27 October 2022, available at <https://tinyurl.com/4fyv4eta>, at 15:20-15:30; A. Quinto and C. Hodgson, ‘COP27: UK Cannot Afford to Pay Climate Change “Reparations”, Warns Boris Johnson’, *Financial Times* (7 November 2022).

⁶⁷ Developing countries have set out their needs in a series of ‘National Adaptation Programmes of Action’, ‘Technology Needs Assessments’ and, most recently, ‘Nationally Determined Contributions’ under the Paris Agreement. All these are provided on the UNFCCC’s website, available at unfccc.int.

⁶⁸ ‘As the Brundtland Report puts it: “We act as we do because we can get away with it: future generations do not vote; they have no political or financial power; they cannot challenge our decisions”’. Zwarthoed, *supra* note 61, at 81.

incur a greater sacrifice. In a different sense now, we are ‘all in it together’ – not just across space but also across time. The question of responsibility, then, is a question of what or whom to sacrifice. In what will sacrifice consist? Is it voluntary? Is it even articulated? I will return to this set of questions in a moment after having looked a little more closely at who ‘they’ are, or might be, in the next section.

5 Who Are They?

The rhetorical invocation of ‘future generations’ is consistently vague, presumably requiring an indistinct cypher to be filled subjectively. They have probably been most thoroughly imagined in future climate scenarios, to which I now turn, though the notional persons that inhabit these proliferating worlds remain essentially bland: featureless, colourless, mostly genderless and characterless. Their key characteristic is their abstract universality: they exist in cohorts and demographics, aggregated in institutions, representing lifestyles, economies, waves of political, economic and social (but not, interestingly, cultural) ‘preferences’. In these areas, ‘they’ are both more and less defined than ‘we’ are: more so in that the contours of their global political and social proclivities acquire greater precision than ‘ours’ can; less so insofar as they are suspended simultaneously in multiple abstract renditions or possibilities.

Scenario building has evolved since *Limits to Growth* into a core branch of climate science, today playing a central role in the IPCC’s assessments. Scenarios supply a narrative supplement to climate modelling, which today has two principal pillars: general circulation models (GCMs) and integrated assessment models (IAMs). GCMs are the familiar data-crunching sources of hard climate prediction: they apply vast computing power to calculate and project the physical consequences of emission concentrations on the climate system over decades and even centuries.⁶⁹ They represent ‘future generations’ – if at all – incidentally, as the hapless faceless victims of climate impacts. IAMs input socio-economic drivers (technology, policy, economic and political variables) of greenhouse gas emissions into simplified GCMs; their imagined future populations are, though anodyne, in the driver’s seat.⁷⁰

Climate scenarios have been through several generations, in each case providing narrative structure to guide climate model inputs. Recent models have centred on five narratives – known as ‘shared socio-economic pathways’ (SSPs) – each of which guides one of six IAMs towards the endpoints foreseen in any of one of seven

⁶⁹ See Edwards, *supra* note 37, ch. 14.

⁷⁰ The IPCC describes integrated assessment models (IAMs) as ‘simplified, stylized, numerical approaches to represent enormously complex physical and social systems’. Clark *et al.*, ‘Assessing Transformation Pathways’, in O. Edenhofer *et al.*, *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (2014) 413, at 422. The shared socio-economic pathways (SSPs) are run through a simplified general circulation model known as the Model for the Assessment of Greenhouse Gas Induced Climate Change.

‘representative concentration pathways’ (RCPs).⁷¹ (Bear with me!) The RCPs each imagine a final concentration of greenhouse gases by 2100 in terms of its ‘radiative forcing’ capacity on the planet (measured in watts per metre squared), ranging from RCP 1.9 (that is 1.9 watts per metre squared) – a 1.5 degree Celsius scenario at the bottom end – to RCP 8.5 at the top, more likely to produce four degrees Celsius or more of global warming above pre-industrial temperatures by 2100 or earlier.⁷² RCP 2.6 is a two degree Celsius scenario, and four others (3.4, 4.5, 6.0 and 7.0) fall in between. The IAMs ‘back-cast’ from these 2100 endpoints, using the SSPs to put some shape on global energy use, land-use change, economic and population growth and so on.⁷³ Current scenarios thus have crude acronymic titles such as ‘IMAGE SSP1-19’ (where ‘IMAGE’ is the relevant IAM, ‘1’ the first SSP and ‘19’ indicates RCP 1.9).⁷⁴

A kind of world construction is undertaken in the five SSP narratives. They are chosen to illustrate future policy environments absent specific climate policies and centred on differing combinations of possible future ‘challenges’ to mitigation and adaptation – so SSP1 (‘sustainability’ – each SSP has a synoptic moniker) represents low ‘challenges’ for both mitigation and adaptation, while SSP3 (‘regional rivalry’) assumes high challenges for both; in SSP4 (‘inequality’), mitigation costs are low and adaptation costs are high, while in SSP5 (‘fossil-fuelled development’) the reverse is true. To these is added a ‘middle road’ (SSP2), which assumes a continuation of contemporary trends and in which the challenges to both mitigation and adaptation are fair to middling (not necessarily a ‘likely’ scenario, as the authors emphasize).⁷⁵

Much about the scenario-building process merits inspection. The knowledge cohort that produces it comprises a small close-knit self-described ‘modelling community’ from a handful of well-established global institutions that have worked within well-defined and somewhat arcane parameters over several decades by now.⁷⁶ They have

⁷¹ Forty scenarios in 1992 were replaced by four in IPCC, *Special Report on Emissions Scenarios* (2000). The IPCC’s Fifth Assessment Report drew on 1,184 scenarios using 31 IAMs (nine of which accounted for 95 per cent of scenarios). See Krey *et al.*, ‘Annex II: Metrics and Methodology’, in Edenhofer *et al.*, *supra* note 70, 1281 (calibrated to four RCPs). The IPCC’s Sixth Assessment Report ‘received submissions of more than 2,500 model-based scenarios published in the scientific literature’. Grubb and Okereke, *supra* note 63, at 1–34. On the RCPs, see van Vuuren *et al.*, ‘The Representative Concentration Pathways: An Overview’, 109 *Climatic Change* (2011) 5.

⁷² Van Vuuren *et al.*, *supra* note 71.

⁷³ Carbon Brief, ‘Q&A: How “Integrated Assessment Models” Are Used to Study Climate Change’ (2 October 2018), available at <https://tinyurl.com/4rwwfn5s>.

⁷⁴ See, e.g., the SSP Public Database, available at <https://tntcat.iiasa.ac.at/SspDb/dsd>. IMAGE stands for ‘Integrated Model to Assess the Global Environment’.

⁷⁵ See O’Neill *et al.*, ‘The Roads Ahead: Narratives for Shared Socioeconomic Pathways Describing World Futures in the 21st Century’, 42 *Global Environmental Change* (2017) 169, at 170. The IPCC’s Sixth Assessment Report relies on five ‘illustrative mitigation pathways’, mostly derived from SSPs. Pathak *et al.*, ‘Technical Summary’, in IPCC, *supra* note 63, at TS-29–TS-41.

⁷⁶ Six institutions are formally involved in SSP scenario building: the National Institute for Environmental Studies (Japan); the Pacific Northwest National Laboratory (USA); the Netherlands Environmental Assessment Agency; the International Institute for Applied Systems Analysis (Austria); the Potsdam Institute for Climate Impact Research (Germany); and the Fondazione Eni Enrico Mattei (Italy).

tended to become less, rather than more, detailed over time.⁷⁷ Also intriguing is the fact that SSPs are unable (as yet) to dynamically factor in expected climate impacts over time in terms of possible policy responses to those impacts: an extraordinary limitation (and the 'next frontier' for the modelling community).⁷⁸ And there is the unique position that the scenarios have within the IPCC process, placing them at the heart of global climate orientation. While each of these attributes opens up fruitful lines of inquiry, this article can merely touch on their broader parameters and assumptions.

Unsurprisingly, the scenarios advance a utopic/dystopic spectrum.⁷⁹ The obvious best case scenario – 'sustainability' (SSP1) – is supplemented by another more surprising utopian (at least potentially) narrative: SSP5 ('fossil-fuelled development'). In SSP1, the 'world shifts gradually, but pervasively, towards a more sustainable path, emphasizing more inclusive development that respects perceived environmental boundaries'.⁸⁰ This keeps mitigation manageable. But adaptation is also manageable because, we are told, 'inequality is reduced both across and within countries' (we are not told how this happens).⁸¹ By contrast, SSP5 might be described as 'staying with the trouble',⁸² flowing with, rather than against, the market and climate alike: the world 'places increasing faith in competitive markets, innovation and participatory societies to produce rapid technological progress and development of human capital as the path to sustainable development'.⁸³ This wealth-generating powerhouse is combined with what is referred to as a 'higher level of equity' – which, as in SSP1, keeps the 'challenges' to climate adaptation low – though, again, we are not told how.⁸⁴ Although (steep) mitigation remains possible in SSP5 (two IAMs even achieve RCP 1.9),⁸⁵ a query arises as to whether somewhat higher temperatures may be bearable in a world with a manageable population, high growth and broad-based adaptation.

These two apparently contrasting utopias share a number of assumptions in common: they have the lowest global populations of the five (achieved, we are told, through higher education levels for women) and the highest global income growth

⁷⁷ Compare, for example, the level of detail in IPCC (2000), *supra* note 71, and in Cork *et al.*, 'Four Scenarios', in Millennium Ecosystem Assessment, *Ecosystems and Human Well-being: A Framework for Assessment* (2003) 225, to that of the later SSPs.

⁷⁸ According to Joeri Rogelj, quoted in 'Q&A', *supra* note 73.

⁷⁹ The authors clarify the scenarios are not intended to be predictive or recommendatory and do not represent a hierarchy of likelihood.

⁸⁰ Riahi *et al.*, 'The Shared Socioeconomic Pathways and Their Energy, Land Use, and Greenhouse Gas Emissions Implications: An Overview', 42 *Global Environmental Change* (2017) 153, at 157; see also van Vuuren *et al.*, 'Energy, Land-use and Greenhouse Gas Emissions Trajectories under a Green Growth Paradigm', 42 *Global Environmental Change* (2017) 237.

⁸¹ Riahi *et al.*, *supra* note 80, at 157.

⁸² With apologies to Donna Haraway.

⁸³ Riahi *et al.*, *supra* note 80, at 157; see also Krieglner *et al.*, 'Fossil-fueled Development (SSP5): An Energy and Resource Intensive Scenario for the 21st Century', 42 *Global Environmental Change* (2017) 297.

⁸⁴ O'Neill *et al.*, *supra* note 75, at 176.

⁸⁵ See Carbon Brief, 'Explainer: How "Shared Socioeconomic Pathways" Explore Future Climate Change' (2018), available at www.carbonbrief.org/explainer-how-shared-socioeconomic-pathways-explore-future-climate-change/, especially the chart adapted from Rogelj *et al.*, 'Scenarios towards Limiting Global Mean Temperature Increase below 1.5 °C', 8 *Nature Climate Change* (2018) 325.

(both per capita and absolutely).⁸⁶ Both narratives also feature continuing globalization and steady or increased trade liberalization.⁸⁷ By contrast, the dystopias – notably, the worst-case SSP3 (‘regional rivalry’) – expect lower economic growth, heightened barriers to international trade and larger populations.⁸⁸ As at the Club of Rome a half-century earlier, a principal feature of thriving future generations is that there are fewer of them. But, unlike *Limits to Growth*, there is no scope in the SSPs for what we have since come to refer to as ‘degrowth’.⁸⁹ Future generations thrive by thriving.

The faith in globalization, growth and trade – the very engines of climate change – in creating conditions for its overcoming may seem surprising at first glance. Noticing this obliquely in its Fifth Assessment Report, the IPCC pointed out that IAMs were initially constructed within the field of mainstream economics – the first social science to enter the climate field – and embed basic assumptions from that discipline: ‘[T]he scenarios tend towards normative, economics-focused descriptions of the future’ since ‘the models ... typically assume fully functioning markets and competitive market behavior’.⁹⁰ The same logic informs the IAMs’ approach to trade: ‘In general’, the IPCC observes of the models’ assumptions, ‘greater [openness] to trade will result in lower-aggregate mitigation costs because the global economy is more flexible to undertake mitigation where it is least expensive’.

These observations remain intuitive rather than analytic – in fact, it is not easy to locate anywhere in the SSP literature an argued justification for the economic premises that appear fundamental to their world building. Whereas considerable space is devoted to the *assumptions* upon which the SSPs sit (for example, ‘globalization continues ...’), less is given over to what we might call the ‘underlying assumptions’ (for example, ‘... thus reducing emissions’) that explain the ‘pathways’ set in train by them.⁹¹ This appears to be because the latter assumptions are found not in the SSPs themselves but, rather, in the less transparent IAMs.⁹² The notion that more trade, globalization and growth is environmentally beneficial may seem an extravagant assertion to smuggle

⁸⁶ Kriegler *et al.*, *supra* note 83, at 306; ‘Explainer’, *supra* note 85, at 313.

⁸⁷ O’Neill *et al.*, *supra* note 84, at 175; Kriegler *et al.*, *supra* note 75, at 305; van Vuuren *et al.*, *supra* note 80, at 240.

⁸⁸ KC and Lutz, ‘The Human Core of the Shared Socioeconomic Pathways: Population Scenarios by Age, Sex and Level of Education for All Countries to 2100’, 42 *Global Environmental Change* (2017) 181–192, at 185; Dellink *et al.*, ‘Long-term Economic Growth Projections in the Shared Socioeconomic Pathways’, 42 *Global Environmental Change* (2017) 200, at 206.

⁸⁹ See J. Hickel, *Less Is More: How Degrowth Will Save the World* (2020); but see O’Neill *et al.*, *supra* note 75, at 178.

⁹⁰ Clark *et al.*, *supra* note 70, at 422 (‘factors such as non-market transactions, information asymmetries, and market power influencing decisions are not effectively represented’).

⁹¹ O’Neill *et al.*, ‘A New Scenario Framework for Climate Change Research: The Concept of Shared Socioeconomic Pathways’, 122 *Climatic Change* (2014) 387, at 400. For a table of the ‘assumptions’ used in the SSPs, see O’Neill *et al.*, *supra* note 75, at 176.

⁹² See ‘Q&A’, *supra* note 73.

in without debate or explanation, but it is worth recalling that the UNFCCC contains precisely the same assumption in its section on ‘principles’.⁹³

In these respects, the future worlds of SSP1 and SSP5 may look quite familiar. To observe the obvious, SSP5 shows the world continuing much as it is but with the injection of something unexplained and magical called ‘equity’. SSP1, in which the Sustainable Development Goals are met, shows the world not as it is but, rather, as it has been imagined in a reiterated environmentalist vision extending back at least to the Stockholm Declaration’s compromise: growth continues but more ‘sustainably’ and (again) equitably. Both visions are redemptive fantasies, it seems, not only saving us from ourselves but also fulfilling our better natures, while polishing away, in the future, the apparent contradictions of our present. What ‘equity’ is or how it is achieved remains mysterious.

It is, however, SSP3 and SSP4 – the dystopias – that will look most familiar to contemporary eyes. In SSP4 (‘inequality’), ‘unequal investments in human capital’ and ‘increasing disparities in economic opportunity and political power, lead to increasing inequalities and stratification both across and within countries’, creating an abyss between ‘an internationally connected society’ and ‘a fragmented collection of lower-income, poorly educated societies’. SSP4’s authors refer to it as representative of ‘barbarization’ scenarios: ‘The core theme of barbarization is that extreme poverty, income inequality, and lack of opportunity lead to social and environmental ills, especially for the poor.’⁹⁴ In SSP4, mitigation challenges are low due to technological advance, but warming is still high enough to cause real pain for the majority who cannot adapt – presumably, a higher level of warming is bearable for the well-heeled, tech-savvy, geographically mobile, and ‘internationally connected’ minority.⁹⁵ Worse still, however, and most vulnerable to climate extremes, is SSP3 (‘regional rivalry’), in which ‘resurgent nationalism ... and regional conflicts push countries to increasingly focus on domestic or, at most, regional issues’, resulting in the lowest economic growth and highest population growth.⁹⁶ Nationalism – including, in any form, protectionism, mercantilism and going forth and multiplying – here appears as the crucible of worst-case scenarios. The scenario narratives do not explain why a political vehicle that has historically been somewhat successful is now so catastrophic: again, it seems almost a matter of faith in global market integration.

So, to pose my earlier question, where does sacrifice lie in these visions? In mirroring the present in so many ways, the scenarios, at first glance, do not obviously require much at all in the way of sacrifice – not least in terms of ‘our’ lives and lifestyles as they are usually conceived. And yet two clear loci of sacrifice are evident: first, the

⁹³ UNFCCC, *supra* note 1, Art. 3(5) ([t]he Parties should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties, particularly developing country Parties, thus enabling them better to address the problems of climate change’).

⁹⁴ Calvina *et al.*, ‘The SSP4: A World of Deepening Inequality’, 42 *Global Environmental Change* (2017) 284, at 286.

⁹⁵ Riahi *et al.*, *supra* note 83.

⁹⁶ This scenario, it is reported, appeared highly unlikely when adopted in 2014, but much less so by 2016.

birth rate. To exercise a responsibility towards future generations today apparently implies, in effect, taking steps now to prevent their existence altogether – at least for some – particularly in today’s ‘developing’ countries.⁹⁷ We face again the Club of Rome’s neo-Malthusian dilemma but with the stakes ever heightening. The second locus of sacrifice resides in the magic wand of ‘equity’, which, whatever else it means, presumably expects to cut something from somewhere and deliver it somewhere else. But here the stakes are not obviously different in the future than they are now. Their particular stamp in climate talk is still, as it has always been, found in familiar terms: loss and damage, adaptation, technology transfer, migration – those long-standing areas of blockage or fast-falling expectations. But the scenarios reach far beyond these climate-specific technicalities, apparently seeking a wholesale global levelling up and wealth redistribution.⁹⁸ Indeed, this second locus of sacrifice seems to assume that the salient attribute of a better future is that by then ‘we’ will have overcome precisely the hurdle that the invocation of a ‘future generations’ register itself aimed to bracket. It is surely disappointing to travel so far into the future and find there, staring back at us, as blank and pitiless as the sun, the very conflicts that we had hoped to escape by going there.

For the purposes of this article, it is less the reflexive mirroring of the present in future climate scenarios (idealized in the utopias; realist in the rest) that concerns me than the inevitable recursivity of present intra-generational conflict in the future. It is not just that the present-future boundary is blurry (if not outright inconceivable) nor even that intractable present concerns cannot simply dissolve in a fantasy future: rather, it is that to neglect current ‘inequity’ in a motivated projection of imaginary future solidarity surely stands to set in train an actual future trajectory in which those inequities become constitutive rather than merely intractable – what the scenarios refer to as ‘barbarization’.

6 Sacrifice

I have raised several times a connection or even identity between responsibility and sacrifice – a nexus that Jacques Derrida draws out in his 1992 text *The Gift of Death*.⁹⁹ Derrida refers in this text to responsibility as ‘the injunction to respond ... the call to explain oneself [*répondre de soi*], one’s actions or one’s thoughts’.¹⁰⁰ He then relates this very personal matter of accounting for oneself to the ‘most ancient’ experience – the uniquely subjective endpoint that is, for each of us, death: ‘My first and last responsibility ... is that responsibility ... that relates me to what no one else can do in my place. ... Everyone must assume his own death, that is to say the one thing in the world that no one else can either give or take: therein resides freedom and responsibility.’¹⁰¹ The ‘most fundamental’ – or prototypical – mode of accepting responsibility, he then says,

⁹⁷ KC and Lutz, *supra* note 88.

⁹⁸ Dellink *et al.*, *supra* note 88, at 210.

⁹⁹ J. Derrida, *The Gift of Death*, translated by D. Wills (1995 [1992]).

¹⁰⁰ *Ibid.*, at 3 (in this passage, ‘responsibility’ is defined negatively).

¹⁰¹ *Ibid.*, at 44, 48.

would be a readiness to die for another, and it is this ‘most ancient’ vocation that ‘institutes responsibility ... in the ethical dimension of sacrifice’.¹⁰² The point for Derrida is, in part, to distinguish what he calls an ‘economy of sacrifice’ from the everyday exchange economy: the former is indifferent to rational calculus and non-reciprocal – it does not expect a reward, being grounded in an ethic of love.¹⁰³ This is not to say that an act of sacrifice entails no reward but, rather, that any reward is both incalculable and incidental. Moreover, in this economy of sacrifice, to enact my responsibility in sacrifice does not bind, but liberates, the person to whom I am responsible.¹⁰⁴

It is presumably here that the register of responsibility towards future generations implicitly situates itself. Not that ‘present generations’ are expected to give their lives for the formless abstractions of the future but, rather, that this background relation of responsibility/sacrifice provides the non-reciprocal ground for taking actions today to benefit others tomorrow. We would not need, as we move beyond self-interest, to know anything at all about these others to whom we are responsible, other than that they will someday exist.¹⁰⁵ They are self-constituted and autonomous beings beyond our understanding. Derrida’s anchoring of responsibility in the fact of death matters not only because the stakes in climate action and awareness entail actual death – for many already and in the future and for others if this or that decision is taken or not. It also matters because, in approaching future generations, however conceived, we are at the same time approaching our own mortality and, with it, the question of *répondre de soi*: how to account for our lives; what will we have lived for; to what will we have given our lives in the end?

However, there is a difficulty with responsibility in this register for Derrida – which resides in contending with competing loci of responsibility and in the difficulty or impossibility of choosing between them.¹⁰⁶ Derrida worries that the ultimate determination of where sacrifice lands – and, thus, the final locus of responsibility – may remain inexplicable or inarticulate, grounded not in reason or love but, rather, in fear or secrecy.¹⁰⁷ Here, Derrida turns to the much-rehearsed biblical story of Abraham’s readiness to sacrifice his son Isaac at God’s behest, perhaps best known from Søren Kierkegaard’s extended meditation *Fear and Trembling*, with which Derrida dialogues.¹⁰⁸ In this story, although God had previously promised Abraham that he would be the progenitor of multitudes – and although he and his wife Sarah were old and Isaac was their only child – Abraham agreed to God’s command. Derrida points out that Abraham’s ‘absolute’ responsibility to God entailed a betrayal of his

¹⁰² *Ibid.*, at 48; see also 46.

¹⁰³ *Ibid.*, at 101–102, 105–107; see also at 96–97.

¹⁰⁴ *Ibid.*, at 49–51.

¹⁰⁵ A view frequently raised in the ‘future generations’ literature. See, e.g., Gardiner, ‘A Contract on Future Generations?’, in Gosseries and Meyer, *supra* note 61, 77; Lawrence, *supra* note 2; Shue, *supra* note 17; Caney, *supra* note 18; S. Vanderheiden, *Atmospheric Justice: A Political Theory of Climate Change* (2008), at 132.

¹⁰⁶ Derrida, *supra* note 99, at 58.

¹⁰⁷ *Ibid.*, at 56; see also 64.

¹⁰⁸ The discussion is lengthy. *Ibid.*, at 58–81, 82–98; see also S. Kierkegaard [Johannes de Silentio], *Fear and Trembling*, translated by W. Lowie (1941 [1843]).

(responsibility towards his) own son as well as towards his wife and, indeed, towards an entire ethical order. Abraham's sacrifice is a test of faith, but it is equally grounded in 'fear and trembling' before God's power.¹⁰⁹ The paradox for Derrida is that the imperative to respond in faith (or fear) is inexplicable: 'There is no language, no reason, no generality or mediation to justify this ultimate responsibility which leads me to absolute sacrifice.'¹¹⁰ Abraham's readiness to sacrifice Isaac is, he says, abominable, unspeakable, criminal. And, yet, the imperative that impels sacrifice in response to one rather than another, or to find one locus of responsibility 'higher' than another, remains inexplicable, unjustifiable or irrational (faith, fear, love). If there is an explanation, it remains, at some level, mysterious.¹¹¹

Not only that, Derrida adds, but this imperative to sacrifice in service of a more imposing, absolute or ultimate responsibility is 'ubiquitous', much more prevalent than the rare extravagance of Abraham's horrific dilemma might imply. At this juncture, Derrida provides a list of the atrocities of the world in which he was writing in 1991–1992 – the moment, as it happens, in which the UNFCCC was agreed, with its exhortation to act for the benefit of future generations, as well as the time of the first Iraq (Gulf) War, with its 100,000 civilian deaths.¹¹² Although there is no mention of climate change in Derrida's text, it feels close by in his description of a world in which so many are dying of preventable hunger and disease, an 'incalculable sacrifice', as he puts it, made 'to avoid being sacrificed oneself', a sacrifice that 'we' not only participate in but 'actually organise'.¹¹³

Those who are dying now due to climate inaction are, of course, on this reading, being sacrificed due to our ongoing responsibility to something else, something higher. But to what? The choice of what to sacrifice – at an individual or societal level – itself indicates, so Derrida hints, where responsibility truly lies. But whereas Abraham chose his sacrifice, Isaac did not: voluntary self-sacrifice is counterposed to the involuntary – a sacrifice that falls on a victim. This crime, and the keenly paradoxical affront to God's promise to Abraham to father multitudes, is averted only when God stays Abraham's

¹⁰⁹ Kierkegaard portrays this story as a series of possible alternative choices and consequences.

¹¹⁰ Derrida, *supra* note 99, at 71.

¹¹¹ That Isaac's sacrifice remained a secret between Abraham and God plays a key role in Derrida's larger argument.

¹¹² On the civilian cost of the war, see Normand and af Jochnik, 'The Legitimation of Violence: A Critical Analysis of the Gulf War', 35 *Harvard International Law Journal* (1994) 387, at 388–389.

¹¹³ Derrida, *supra* note 99, at 86 ('[w]e are not even talking about wars, the less recent or most recent ones, in which cases one can wait an eternity for morality or international law (whether violated with impunity or invoked hypocritically) to determine with any degree of certainty who is responsible or guilty for the hundreds of thousands of victims who are sacrificed for what or whom one knows not, countless victims, each of whose singularity becomes each time infinitely singular ... whether they be victims of the Iraqi state or victims of the international coalition'). *Plus ça change*: as I first drafted this passage, 'we' were inviting the starvation of 'at least a million Afghan children under five', as the foreign-held assets of the Afghan government were frozen abroad – 'our' responsibility lying elsewhere apparently, and the sacrifice falling where it will. L. Miller, director of the International Crisis Group's Asia programme, 'Afghanistan: What Then? What Now?' *The Briefing Room*, 9 December 2021. By July 2022, this figure had doubled. Z. Samir, 'Is This a New Taliban?', *London Review of Books* (7 July 2022) ('UNICEF estimates that two million Afghan children require treatment for acute malnutrition').

hand at the last minute. In this foundational story, then, the coming into being or not of future generations is a matter of sheer chance – a wager – subject to the irrational mechanics of a jealous God. The impossible choice facing Abraham is not between present generations (his son and wife) and future generations (his progeny): rather, it is between one kind of annihilation (in obedience to God) and another (in God's foreseeable wrath).¹¹⁴ Their fates are bound together. The fact that Abraham chose obedience to God against both present and future generations and that – in the event – both nevertheless survive (his son and their progeny) is, for Derrida, aleatory: there is no rationale to justify it. Abraham acts on the imperative of a responsibility he is unable to choose against, and the sacrifice falls where it will. For Derrida, Abraham is no model – to choose faith or fear over love, and to be rescued by the vagaries of chance, is execrable. Yet Derrida asks us to notice the ubiquity of the dilemma Abraham faces and the choice he makes.

What Derrida aims to recall, I suggest, is that the choice is rarely between responsibility and none, between sacrifice or no sacrifice. Rather, everywhere we turn, there are others to whom we are potentially responsible, there are sacrifices to be made and they are non-reconcilable. But we must choose. An imperative locus of responsibility may be known or named – it may be God or ego,¹¹⁵ or the nation, or 'the markets', or 'the economy' (Derrida's apparent reading), or the nostrums of globalization and trade,¹¹⁶ or science, or it may even be fidelity to the rule of law itself. It may be obscure or inarticulate. But, even if known, the choice of what to sacrifice, or where it is to fall, often remains at some level unexplained and unjustified, and its logic, if that is what it is, undisclosed.¹¹⁷ What presents as altruistic may turn out to be sacrificial. Meanwhile the choice, or fall, of sacrifice now orients the future.

Viewed from this perspective, the fact and possibility of sacrifice runs throughout the climate problem. There is the sacrifice already made: the physical loss, the deaths, the species extinction – the daily due of the onward march of climate change – and of so much more in the past, as this problem has surged forward across two centuries. Then there is the sacrifice implicit in ongoing inaction: the foreseeable loss, or giving up, of lives, lands, livelihoods, cultures, relationships, homes – expectable now and escalating with time, as we know. But there is also sacrifice for many in taking action now: we all depend on fossil fuels still, but for much of the world, its removal – unless some affordable alternative is quickly made available – will ensure that poverty and inequality calcify and extend. There is sacrifice in the building of a new energy infrastructure: where it will arise; where it will not; its cost and the means of payment.

¹¹⁴ Kierkegaard, *supra* note 108 ('in the world of the finite ... this was and remained an impossibility ... so the only thing that can save [Abraham] is the absurd, and this he grasps by faith'; 'when I have to think of Abraham, I am as though annihilated. I catch sight every moment of that enormous paradox which is the substance of Abraham's life, every moment I am repelled').

¹¹⁵ *Ibid.* ('[f]or he who loved himself became great by himself, and he who loved other men became great by his selfless devotion, but he who loved God became greater than all').

¹¹⁶ See Orford, 'Beyond Harmonization: Trade, Human Rights and the Economy of Sacrifice', 18(2) *IJIL* (2005) 179.

¹¹⁷ 'The current system of sovereign states', Henry Shue writes in the context of permissible climate 'externalities ... is wildly irrational'. Shue, *Pivotal Generation*, *supra* note 2, at 44–45.

There is sacrifice in the burden of adaptation in countries facing an unbearably hot future, its cost, and whether to fund it from an emissions-based economy or instead to blindly mitigate and trust to fate or law. There is the irreparable sacrifice reframed euphemistically as ‘loss and damage’. Indeed, for many there is sacrifice in both action and inaction: an invidious choice between the damage wrought by a changing climate and the loss of a viable pathway to a more prosperous life hitherto presumed by many, even most alive today, and for their children and beyond, as a hope if not a destiny.

7 Legacy

A further pivot upon which ‘future generations’ discussion frequently turns is the idea of legacy: what to bequeath. The very notion of a legacy is intergenerational, though that need not entail that ‘generations’ leave legacies (if they do, on what scale: familial, national, global?). As I noted in section 3, much of the future generations literature – including the very idea of sustainable development – holds it as self-evident that ‘we’, in the present, have an obligation to pass something – characterized by Brown Weiss and others in terms of ‘resources’ – on to future generations.¹¹⁸ It is a compelling intuition that, in this penultimate section, I will not so much argue against as supplement.

In the climate context, the question of legacy takes on urgency and distinctiveness across two dimensions. First, the resource most evidently at risk of depletion is what Larry Lohmann has helpfully called ‘the global carbon dump’ – that is, the planet’s capacity to absorb greenhouse gas emissions.¹¹⁹ Second, there is the much broader question of the ‘planet or cultural resource base’ (using Brown Weiss’ language) that future generations will ‘inherit’. The list of loss here is already extensive: species, ecosystems, land, livelihoods, cultural traditions – all these and many other phenomena are in the course of disappearance as I write, with climate change a principal cause among several. These two dimensions are conceptually distinct, if interrelated – I must restrict myself here to the first (though I believe the second follows a similar structural logic). My aim here is not to challenge the ethical case for swift action (with which I fully agree) but to investigate how a ‘future generations’ rhetoric translates into the existing legal and institutional context within which climate policy is situated.

A *Allocating the Global Carbon Dump*

One might argue that, even were we to accept as a general matter a ‘modified Lockean proviso’ (that ‘we’ should ‘leave enough and as good’ to future generations), this is inapplicable to the ‘global carbon dump’ given that it is already essentially depleted. After all, the ‘carbon budget’, beyond which the planet will warm by more than 1.5 degrees Celsius, and even two degrees, will be exhausted within the lifetimes of present

¹¹⁸ See text at note 43 above on Rawls and text at note 53 above on Brown Weiss and Locke.

¹¹⁹ L. Lohmann, *Carbon Trading* (2006); see also Hickel, *supra* note 89, at 243–245.

generations.¹²⁰ The ‘equitable use’ (or technological replacement) of this scant resource is therefore an essentially ‘intra-generational’ matter. There is nothing left for future generations.

Henry Shue, however, in an influential intervention, reaches the reverse conclusion: ‘A single budget for carbon emissions, whatever its total size, is shared by us and every foreseeable generation to come. Consequently ... what is fair is a pervasively intergenerational issue.’¹²¹ Shue is, of course, correct, in the sense that the ‘carbon dump’ – unlike say the blue whale – is not something that disappears through over-exploitation. Rather, it can continue to be ‘overused’ after its notional depletion, albeit with devastating consequences. Indeed, in the case of the carbon dump, we might say that something like the Lockean proviso is the problem: new ownership claims continue to be staked wherever new reserves appear (hence, new oil investments in, for example, Mozambique).¹²² Continuing private acquisition of the carbon dump is, from this perspective, the climate crisis. Responsibility in this case would appear not to mean, as a loose reading of Brown Weiss might have suggested, conserving the resource for use by future generations but, rather, placing it off bounds for them altogether: binding future generations too into giving it up. For there is little point in ‘us’ (to adopt the register) taking the difficult step of constraining carbon rapidly if some future generation was simply to undo that step.¹²³ If, then, this really is about something we are doing ‘for’ future generations, it quickly also becomes something ‘they’ must do for their successors and also, arguably, for us: they presumably owe us the self-restraint we have shown them – something like intergenerational reciprocity then.

In his article, Shue implicitly recognizes this idea in proposing an institutional mechanism that would not only be global in its mandate (of a kind still lacking) but also intergenerational (of a kind unknown): groping, indeed, towards some institutional binding between generations.¹²⁴ The proposal is intuitively appealing if theoretically extravagant, but it also feels oddly inadequate. For one, it might be argued that any agreement reached now already extends into the future – after all, this is what international law does by default: it binds the future. The attempted binding of the future through law, then, requires neither an ‘intergenerational’ extra nor any concrete notion of reciprocity. At the same time, it is surely hubristic to imagine that we can bind future generations forever: those born after us remain free.

¹²⁰ Riahi and Schaeffer, ‘Mitigation Pathways Compatible with Long-Term Goals’, in IPCC, *Working Group III Contribution to the Sixth Assessment Report* (2022) 3–1, at 3–5 ([m]itigation pathways limiting warming to 1.5°C with no or limited overshoot reach 50% reductions of CO₂ in the 2030s, relative to 2019, then reduce emissions further to reach net zero CO₂ emissions in the 2050s. Pathways likely limiting warming to 2°C reach 50% reductions in the 2040s and net zero CO₂ by 2070s’).

¹²¹ Shue, *supra* note 5.

¹²² Pilling, *supra* note 11; see also K. Bryan and T. Wilson, ‘Congo Expands Oil Auction Round after West’s Crude Production Push’, *Financial Times* (19 July 2022). As I write, in the autumn of 2022, these sorts of investments are multiplying globally, including in Europe.

¹²³ See the thoughtful discussion in Page, *supra* note 2, at 99–131.

¹²⁴ Shue, *supra* note 5, at 300–303, 304–305.

Beyond these notions, though, lies a more profound inadequacy, to which I have drawn attention already. Important as rapid mitigation is, it is unlikely in itself to be sufficient to meet today's climate-driven needs: absent significant international transfers, steep global mitigation is a formula for entrenched inequity.¹²⁵ To be sure, this is an 'ethical' shortcoming – a failure of responsibility – but it is also a deeply practical obstacle: global mitigation is simply unlikely to be embraced if it depends on keeping half the world poor.¹²⁶ In essence, this is the story of the dystopian scenarios SSP3 and SSP4 in different ways, recounted in section 5. By contrast, if 'we' (to retain the register) were to foreground our responsibility to present generations in administering the fast-vanishing global carbon budget – by meeting long-flagged cross-border adaptation and replacement technology needs – the effects would flow into future lives globally too, which, in short, is the thrust of SSP1.

The distinction between these positions is illustrated in a March 2021 ruling of the German Constitutional Court, widely hailed as a 'historic victory' in the protection of future generations.¹²⁷ In this ruling, the court follows a Shue-vian 'pivotal generation' type of examination of the burden distribution of a tight carbon budget,¹²⁸ ultimately ordering more stringent climate mitigation policies in Germany in order to 'afford protection against the greenhouse gas reduction burdens ... being unilaterally offloaded onto the future' (that is, the plaintiffs aged between 15 and 32).¹²⁹ The ruling focused on those alive today since – the court is crystal clear – actual 'future' generations 'either as a whole or as the sum of individuals not yet born – do not yet carry any fundamental rights in the present'.¹³⁰ This synchronism matters: of interest for my present purposes, though, is the court's treatment of a conjoined complaint from Bangladeshi petitioners. While the possible positive knock-on effect for Bangladeshis of future German mitigation policy was flagged, the court did not recognize any German responsibility for current impacts in Bangladesh nor any concrete obligation to assist present (much less future) generations there through adaptation, technology or otherwise:

It is true that by reducing the greenhouse gas emissions produced in Germany, the German state could protect people living abroad ... just as it could protect those living in Germany. ... However, with regard to people living abroad, the German state would not have the same options at its disposal for taking any additional protective action. Given the limits of German sovereignty under international law, it is practically impossible for the German state to afford

¹²⁵ See text at notes 22 and 63 above.

¹²⁶ See, e.g., Caney, 'Climate Change and the Future: Discounting for Time, Wealth, and Risk', 40 *Journal of Social Philosophy* (2009) 163, at 173–174; Shue, *supra* note 5, at 315, 303–304.

¹²⁷ K. Connelly, "'Historic' German Ruling Says Climate Goals Not Tough Enough", *The Guardian* (29 April 2021); K. Rall, 'Germany's Top Court Finds Country's Climate Law Violates Rights', *Human Rights Watch* (29 April 2021).

¹²⁸ *Neubauer v. Germany*, Bundesverfassungsgericht [BVerfG] [Federal Constitutional Court], Order of the First Senate, Case no. BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20, 24 March 2021, paras 1–270, especially paras 186, 192.

¹²⁹ *Ibid.*, headnotes, para. 4.

¹³⁰ *Ibid.*, para. 146; see also para. 109.

protection to people living abroad by implementing adaptation measures there (...). Rather, it is the task of the states concerned to select and implement the necessary measures.¹³¹

So, although these foreign complainants 'are particularly exposed to the consequences of global warming' and have standing, the Court found that even German mitigation policy was not examinable for possible impacts in Bangladesh precisely because adaptation measures there (in Bangladesh) were not within the court's purview (assessment of the two being, the Court said, sensibly if insensitively, 'inextricable').¹³² None of this is surprising: courts generally present as territorially bounded creatures, unprepared to prioritize foreign persons even in the present, much less in the future.¹³³

B 'International Justice'

Since I have characterized the German court's stance as 'Shue-vian', I should be clear that, on this latter question, Shue himself stakes out a somewhat different position.¹³⁴ In *The Pivotal Generation*, published in 2022, Shue argues, taking India as his example, that countries with a historical responsibility for climate change also have a 'negative responsibility not to exploit the vulnerability of the poor and weak' through higher carbon prices and should therefore provide 'financial support for India's transition to alternative energy sources'.¹³⁵ Not to do so, he points out, would amount to what he calls 'compound injustice' as it adds to the injustice of inflicting climate change on vulnerable peoples the further injustice of rendering the development needed to meet this exigency prohibitively expensive.¹³⁶ To do this, he says, would produce an 'upward redistribution of wealth from the poor to the rich' (though Shue appears not to entertain the possibility that poverty is already, in effect, just such an upward redistribution).¹³⁷

¹³¹ *Ibid.*, para. 178 (the Court refers to the possibility of obligations under international law to assist financially with adaptation abroad, but these vague matters are not pursued; para 179); see also para. 181.

¹³² *Ibid.*, paras 90, 174 ('in terms of fulfilling duties of protection arising from fundamental rights, emission reductions and adaptation measures complement one another and are inextricably linked'; para. 18).

¹³³ The Court further stuck to the 'territorial principle' by failing to include in its 'national' carbon budget those emissions produced outside Germany but consumed in Germany, amounting to half again of the total considered. See J. Krüßmann, 'Das Bundesverfassungsgericht betrachtet die falschen CO2-Emissionen', *JuWissBlog* (11 November 2021), available at www.juwiss.de/100-2021. At the time of writing, a separate case underway in a German regional court foregrounds the question of extraterritorial climate harms. See *Saul Lliuya v. RWE*, Regional Court of Essen, AZ. 2 O 285/15, 15 December 2016.

¹³⁴ Shue, *Pivotal Generation*, *supra* note 2, at 68–75. To be clear, with Shue, I am treating 'India' in what follows as a heuristic device and do not claim to be outlining actual policy in, or with regard to, India.

¹³⁵ *Ibid.*, at 73. The argument seems to assume that a functioning global carbon cap including India as a party would be in place before the question of transfers arises – which would render the question essentially ethical – whereas, in fact, this problem is better characterized as political, as it has hitherto effectively blocked global agreement on mitigation. By 'negative responsibility', Shue means one premised merely on 'not causing harm', where a 'positive responsibility' would mean providing something concrete.

¹³⁶ *Ibid.*, at 74; Shue, *supra* note 47, at 223 (who makes a similar case with regard to the Kyoto Protocol's Clean Development Mechanism). Kyoto Protocol 1997, 37 ILM 22 (1998); see also Caney, *supra* note 126, at 173–174.

¹³⁷ Shue, *Pivotal Generation*, *supra* note 2, at 73. On this, see Marks, 'False Contingency', 62 *Current Legal Problems* (2009) 1.

Thirty years earlier, Shue had put forward a similar position – compellingly – in his seminal essay ‘Subsistence Emissions and Luxury Emissions’.¹³⁸ I will point out two worrying wrinkles within the more recent casting. First, Shue prefaces his India passage as follows: ‘The Indian government is entitled to give high priority to reducing poverty in India. India, which is arguably of all the countries in the world most threatened by climate change, *will cut its own throat*, however, if it injects large additional amounts of CO₂ into the atmosphere.’¹³⁹ This, it seems to me, is a critical aside, amounting (no doubt unintentionally) to the same veiled threat that the West has long made to ‘the rest’ ever since the Club of Rome: you *must* do this, regardless of whether we assist or not. It is an argument based on necessity – beside which the whole constructed edifice of ‘moral’ responsibility can simply fall away. India must mitigate, the claim goes, for the sake of its own future generations regardless of what we do. The locus of sacrifice matters here. (Needless to say, ‘India’ will conduct its own analysis as to what is best for India, present and future.)

Second, this case has historically been made (including by Shue himself) in regard to ‘present’ rather than future generations. And, indeed, in making it again, Shue switches registers to one that he terms ‘international justice’ – as distinct from, and independent of, ‘intergenerational justice’. But, for Shue, whereas ‘international justice’ supports ‘intergenerational justice’, the reverse is apparently not the case: future generations’ interests appear to redirect those of the present essentially into rapid mitigation. In this, Shue follows Rawls, for whom ‘just savings’ for future generations act as a constraint on the ‘difference’ principle (that mandates that ‘social inequality be arranged ... to the greatest benefit of the least advantaged’).¹⁴⁰ And, indeed, in the remainder of Shue’s book, focusing on ‘intergenerational justice’, these ‘international justice’ matters appear to fall away. For example, consider the following quotation: ‘More ambitious mitigation will clearly impose some costs on some segments of current generations. Nevertheless, if any sacrifices necessary for the sake of more ambitious mitigation are shared fairly ... no life in current generations that is satisfactory now need become unsatisfactory because of the costs of ambitious mitigation.’¹⁴¹

The reference to ‘satisfactory’ lives appears to set aside the problem of poverty that features in his earlier passage on India. In these later passages, Shue highlights the ‘sacrifices’ of those whose livelihoods are currently tied to fossil fuel production or use (such as ‘coal miners’), but it is also clear that in these passages the local case – future generations in the USA – commands the foreground.¹⁴² It is difficult to avoid the impression that, in keeping with Rawlsian ‘just savings’, future generations discourse tends to subordinate global intra-generational equity to local intergenerational equity.

¹³⁸ Shue, ‘Subsistence Emissions’, *supra* note 25.

¹³⁹ Shue, *Pivotal Generation*, *supra* note 2, at 69 (emphasis added).

¹⁴⁰ See note 49 above and accompanying text.

¹⁴¹ Shue, *Pivotal Generation*, *supra* note 2, at 105.

¹⁴² *Ibid.*, at 106; see also 38, 46, 79, 134. Shue expressly notes that the book’s argument primarily targets his compatriots – a thoroughly justifiable stance, given USA’s historical and current responsibility.

The latter point is again illustrated in the German Constitutional Court's ruling of March 2021, wherein the Court explicitly balanced mitigation costs today against adaptation costs in the future, finding that a target of two degrees Celsius, rather than 1.5 degrees, may be 'sufficient' if 'alleviated by supplementary adaptation measures'.¹⁴³ Moreover, current mitigation policy itself is subject to balancing between different (local) interests: '[T]he legislature has considerable leeway in deciding how to strike an appropriate balance between the interests of property owners exposed to risks from climate change and the interests opposing more stringent climate action.'¹⁴⁴ In this analysis, a climate assessment involves (i) balancing the costs of (local) mitigation today against (local) adaptation in the future and (ii) balancing the costs of (local) climate impacts in future against the (local) costs of mitigation today. The consequences of a possibly looser German mitigation policy for future generations *outside* Germany (outlined in the same IPCC report upon which the Court relies) are, in this analysis, essentially removed from view.¹⁴⁵

8 Discounting the Future

In this final section, I sketch and critique a common existing register for the incorporation of future generations into current policy: the notion, unremarkable in welfare economics and central to policy-making far beyond climate matters, of discounting. A discount rate attempts to factor the preferences and circumstances of future persons into the cost-benefit analysis of policy choices, assuming future generations will necessarily be wealthier than present generations and more technologically sophisticated. Recourse to a discount rate already presupposes a relation between generations: a high discount rate signifies that future generations are better placed to absorb costs; a low discount rate that 'we' are. Thus, for example, sanguine expectations about future redemption through carbon dioxide removal – a key element of RCPs 1.9 and 2.6 and, indeed, almost all SSPs limiting warming to 1.5 degrees Celsius – embed a significant discount rate.¹⁴⁶ We can, in short, only meet this target if future generations have some clever technology up their sleeve.

Discount rates have long been controversial in climate change. The influential 2006 *Stern Review* drew fire for settling on a low discount rate on the basis that the scale of future costs was potentially enormous and irreversible.¹⁴⁷ Stern explained his choice

¹⁴³ *Neubauer et al.*, *supra* note 128, para. 167; see also para. 163.

¹⁴⁴ *Ibid.*, para. 172.

¹⁴⁵ The Court bases its analysis on IPCC, Special Report on Global Warming of 1.5°C (2018).

¹⁴⁶ One of the five 'illustrative mitigation pathways' used in the IPCC's Sixth Assessment Report (entitled 'IMP-neg') is premised on carbon dioxide removal.

¹⁴⁷ I am here drawing on the following texts: N. Stern, *The Stern Review: The Economics of Climate Change* (2006), at 28–37, 41–52; Broome, 'Discounting the Future', 23(2) *Philosophy and Public Affairs* (1994) 128; Broome, 'Should We Value Population?', 13(4) *Journal of Political Philosophy* (2005) 399; Rendall, 'Discounting, Climate Change, and the Ecological Fallacy', 129 *Ethics* (2019) 441; Nordhaus, 'A Review of the "Stern Review on the Economics of Climate Change"', 45(3) *Journal of Economic Literature* (2005) 686.

by reference to the notion of ‘equity’.¹⁴⁸ The question of an appropriate discount rate in climate change remains alive today. In the United Kingdom (UK), for example, where the government applies a standard discount rate of 3.5 per cent per annum to ‘future benefits and costs’, the Treasury, in a 2020 review, ‘recognised the standard discounting technique may not be appropriate for projects with long time effects, such as those addressing climate change [which] raise “fundamental ethical issues concerning the responsibility of the current generation to future generations”’.¹⁴⁹ However, a further review, in the run-up to the 26th Conference of the Parties (COP-26) in late 2021, decided against reducing the discount rate, choosing instead to find ways to better calculate future ‘environmental’ costs and benefits.

Discounting is, like scenario building, a form of fictionalizing the future for the purposes of the present. It operates by extrapolating current trends and making informed guesses about future directions: the process is inherently subjective, as the UK Treasury’s recommendations implicitly acknowledge. Rather obviously, the whole notion of a discount rate plays out Derrida’s Abrahamic drama, with the national offspring potentially sacrificed in a mysterious act of faith-based responsiveness to some greater imperative (such as the ‘pure time preference’: the assumption that ‘people’ value consumption in the present over that in the future).¹⁵⁰ The UK Treasury, in its initial review, had argued that environmental damage due to climate change might lead to ‘irreversible wealth transfers from the future to the present’ (though, of course, the true costs are not well captured by the term ‘wealth transfers’).¹⁵¹

To argue for ‘our’ responsibility towards future generations might, as the UK Treasury’s aside hints, take aim at this whole corrupt edifice. But the difficulty I have attempted to clarify here is that the bald current work of responsabilizing the future cannot simply be overturned by the rhetorical reversal of the arrow of responsibility, so to speak, between present and future generations, while maintaining the arbitrary ruse of the distinction itself. This is because the other cleavages I identified at the outset of this article – between states and classes – do not simply dissolve in the soup of time. As I have endeavoured to show, they play out as the terms of sacrifice.¹⁵²

¹⁴⁸ Stern, *supra* note 147, at 23, 41. Stern cites the economist Frank Ramsey as describing discount rates as ‘ethically indefensible’ in 1928 (at 31). Less discussed is why the Stern review accepted the applicability of a discount rate to international policy at all: it is not obvious how the analysis is to be conceived beyond the state.

¹⁴⁹ N. Winchester, *COP26: Changes to the Green Book*, House of Lords Library, October 2021, available at <https://lordslibrary.parliament.uk/cop26-changes-to-the-green-book/>.

¹⁵⁰ Broome, ‘Discounting’, *supra* note 147; Stern, *supra* note 147, at 31. Simon Caney quotes Roy Harrod’s 1948 description of the ‘pure time preference’ as ‘a polite expression for rapacity and the conquest of reason by passion’ and ‘a human infirmity’. See Caney, *supra* note 126, at 165. The article as a whole makes a persuasive case for a ‘zero pure time preference’.

¹⁵¹ Winchester, *supra* note 149.

¹⁵² Kierkegaard, *supra* note 108 (‘it is great to grasp the eternal, but it is greater to hold fast to the temporal’).

So, on the one hand, for example, when the European Union (EU) delegate at COP-26 in November 2021 exhorted those present to ‘keep 1.5°C alive’, he may have claimed to be acting for future generations.¹⁵³ But future generations in the EU can afford steep mitigation costs and stand ultimately to benefit from economic transition: the EU’s donation of €24 billion in 2020 towards mitigation and adaptation in the rest of the world offers relatively little in terms of achieving the vertiginous 1.5 degree Celsius goal or meeting their historical responsibility.¹⁵⁴ On the other hand, the Indian delegate at COP-26 who stood for phasing coal ‘down’ rather than ‘out’ might also have claimed to be acting out of a responsibility to future generations – those in India – balancing the risk of entrenched poverty against the promise of autonomous adaptation.¹⁵⁵ For if those with past and present responsibility refuse to own it or submit to the sacrifice entailed thereby – which can still be found in terms such as technology transfer, adaptation, loss and damage, climate refugees – their counterparts elsewhere, faced with inordinately greater sacrifices, will presumably be right to conclude that they have not in fact received an invitation to a future (or any other) solidarity to which they might respond.

Examples such as these reveal, I suggest, that lines of responsibility and corresponding sacrifice run from deep in the past through our fraught present and continue indefinitely before us. The question, then, is not whether ‘we’ are responsible – some, but, crucially, not all, of ‘us’ clearly are – but, rather, to what or to whom there is responsibility. It is not a question of present generations *tout court* having a responsibility to the future, but of distinct collectivities that exist synchronically and between whom responsibility subtends, even as we/they – and our/their responsibility *inter se* – extend diachronically. It is a question of whether or how they or we can imagine our responsibilities to one another in the present and future alike. And it is not a question of future generations *tout court*, but of which, or perhaps whose, future generations. It is not whether there is sacrifice – there must be – but of what form sacrifice takes: whom to sacrifice, and who will choose sacrifice.

9 Conclusion

Numerous responsibilities attach to climate change. An appeal to the responsibility towards future generations is attractively simple: an exhortation to act, drawing on a

¹⁵³ See European Commission, EU at COP26 Climate Change Conference (undated), available at https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/climate-action-and-green-deal/eu-cop26-climate-change-conference_en.

¹⁵⁴ *Ibid.* This is the largest individual donation, but still less than 0.2 per cent of the European Union’s gross domestic product of €14.45 trillion (in 2021).

¹⁵⁵ In fact, India stood not on ‘future generations’ but on the principle of ‘equity’. See G. Ghosh, ‘India at COP 26’, *The Times of India* (27 November 2021); H. Ellis-Petersen, ‘India Criticised over Coal at Cop26 – but Real Villain Was Climate Injustice’, *The Guardian* (14 November 2021). Contrast Shue, *Pivotal Generation*, *supra* note 2. See Indian Ministry of Environment, Forest and Climate Change, *India’s Stand at COP-26*, 3 February 2022. India’s attempt, at the subsequent COP 27, to extend the language of ‘phasing down’ coal to all fossil fuels was rebuffed. See, for one account, S. Mishra, ‘“Tactical” demand to phase down fossil fuels is dropped ahead of final Cop27 agreement’, *The Independent* (18 November 2022).

powerful imagery of obligation, an altruistic duty towards our children and grandchildren, an invitation to global solidarity. I have argued here, however, that the appeal to future generations instead stands to elide numerous existing loci of responsibility in climate matters that are more concrete, more coherent, more demanding, more easily understood and more effectively articulated in law. It tends to fold those to whom responsibility is owed in the present into those owing responsibility and so annihilates the former's claim to a present and a future alike. Responsibilities towards those alive today surround us; they swell, if we choose to see them. And, if acted upon, the consequences will flow into the future, just as future generations themselves flow into our present. As things stand, however, the colonizing metabolism of climate consumption is already underway. The future, as Shue writes, is not inaccessible or unborn: 'it is not even future.'¹⁵⁶

¹⁵⁶ Shue, *Pivotal Generation*, *supra* note 2, at 4: 'The future is not inaccessible—we hold its fundamental parameters in our hands, and we are shaping them now. In this respect the future is not unborn—it is not even future.' Shue is deliberately inverting a line of William Faulkner's ('the past is never dead. It's not even past'). Compare Kierkegaard, *supra* note 108 ('if one generation arose after another like the leafage in the forest, if the one generation replaced the other like the song of birds in the forest, if the human race passed through the world as the ship goes through the sea, like the wind through the desert, a thoughtless and fruitless activity ... how empty then and comfortless life would be!').