Chapter 6: Group Actions and Climate Change

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June 9, 2025

Abstract. If groups can have projects, then plausibly they can have vague projects. In one particularly difficult scenario, the costs and benefits of vague and precise projects are distributed across different individuals. I'll argue that unless those individuals are absolutely impartial, this can lead to an undesirable outcome. Focusing on the case of climate change, I argue that as a descriptive psychological and political matter, it may be difficult for governments to enforce emissions restrictions—more difficult than agreeing them. Pessimistically, I argue that we might keep turning the carbon dial.

1 Tuck's Argument and Group Practical Sorites

I've made much use of Richard Tuck's example of a shepherd who wants to build a single cairn. This shepherd has a vague project because her goal—to move just enough stones, without wasting any extra effort—inherits the vagueness of 'cairn'. Whereas I've spent most of this book on individuals and am now turning to groups for this chapter, Tuck's focus was the opposite.

His argument about group practical sorites was first presented in a pioneering 1979 paper, and developed in his 2008 book.[1] In the latter, he aims to vindicate the rationality of voting and the like (via a discussion of causation *without* vagueness that's outside the scope of my project), and to extend this vindication to practical sorites (via a discussion of vagueness that's very much in-scope). The in-scope argument builds on the earlier paper, arguing that *negligibility free-riding*, as I'll call it, is simply an instance of paradoxical sorites reasoning and so we should set it aside for groups as we do for individual actions and for heaps.

Negligibility free-riding is troubling because it can seemingly make even a group of wholly benign agents wreck the grass for everyone:

> up to a certain 'threshold' it will be legitimate for us as utilitarians to walk on it, while at the threshold it will not be. Circumstances change

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[1] Tuck (1979); Tuck (2008). The latter covers much more ground incuding voting, prisoners' dilemmas, and the history of free riding, largely in a response to the classic argument of Mancur Olson (1971) that in large groups where the contribution of each to some public good is small or negligible, it's irrational for individuals to contribute to that good at some cost to themselves.

beyond the threshold: once the grass is wrecked, it is wrecked, and there is no reason why we should not march all over it. (Tuck 1979, 151)

If a soritical tolerance principle ('one journey across the grass won't wreck it') is paradoxically true, then the grass can be wrecked even when all agents are completely impartial utilitarians. Each agent gains some pleasure from walking across the grass, and since they don't wreck the grass they do no harm to anyone else's pleasure. So each promotes net utility by walking across the grass, even if this predictably ends up with the grass being wrecked and this is knowably the worst outcome for all.

To illustrate the parallel with the sorites, the cairn makes its first appearance:

imagine a society of utilitarians who wish to have a cairn built by co-operative labour to guide them in their wanderings in the mountains. Each person has to put on one stone – but because of the vague nature of the criterion for achieving a *cairn*, each member of the society can rightly argue that *his* stone is not necessary. (Tuck 1979, 152. Emphases in original.)

(Tuck 1979, 154) argues that since negligibility free-riding rests on the paradox of the sorites, it can be ignored or at least not taken seriously, because 'the essence of paradoxes is that their conclusions should not be believed (for if they were, they would cease to be paradoxes, and become merely good arguments)'. This is bolstered by *individual* analogue, our old friend the lone shepherd. He claims that the shepherd *will* build her cairn despite soritical temptations to skip this one stone, and that we can apply this optimism to groups too. In particular:

We would think it extraordinary if individuals started to go to elaborate lengths to ensure that they were forced to perform these kinds of iterative tasks: surely it should seem just a extraordinary that societies go to such lengths. (Tuck 1979, 155.)

The central idea of the later (2008) presentation is largely the same: we must not make the mistake of treating a sorites series as a good argument. One way or another we must reject the soritical tolerance principle and at least *act as if* there is a final walk that will wreck the grass. In Tuck's terminology, once vagueness is eliminated we have a 'threshold' case, where there is a determinate number of acts we must complete or avoid. (This is an unfortunate terminological clash, since what I mean by a 'single-threshold' case allows that that single threshold could be vague, and it is in most of my examples.)

And once the vagueness is eliminated or ignored, for Tuck the case becomes akin to the rationality of voting. If there there is a number of votes we must reach, the question is whether it is rational to add ours to the pile. There are still questions about that of course—Tuck argues earlier in the book that it is rational, but as I say that's well outside my topic—but no longer questions of *vagueness*.

The book argument distinguishes the major theories of vagueness: supervaluationism, epistemicism, nihilism, and the degree theory. The presentation of nihilism about vagueness is closest to his earlier discussion. Even if the soritical

premises are true, we must not act on them. This takes him closer to Andreou's argument (discussed in the last chapter and below) that we may have cyclical preferences but must not act on them.

More interesting for my purposes is his endorsement of epistemicism. Though he admits it is counterintuitive *qua* philosophical theory, (Tuck 2008, 88) is unusual in seeing epistemicism as an intuitively or phenomenologically plausible account of our encounters with vagueness. The mainstream but not universal view is that even if we prefer epistemicism on philosophical (especially logical) grounds, it remains counterintuitive in particular cases.

Tuck's stance puts him at odds with Ruth Chang's argument that evaluative incommensurability cannot be vagueness, for example, because under vagueness 'the resolution of borderline cases can always be a matter of arbitrary stipulation'. Suppose, for example, we are trying to pick the tallest short man in a room. I agree with Chang (and thus not Tuck) that under vagueness the phenomenology is one of stipulation not of a hidden fact we are trying to uncover.[2] In a certain sense, Tuck's endorsement of epistemicism on decision-theoretic grounds looks like a second-order version of nihilism: we adopt this view of vagueness because it dissolves the practical problem.

But what about supervaluationism? (Tuck 2008, 90) claims that it puts us in a dilemma: we either commit to a sharpening and engage in 'obsessive anxiety about hitting a precise target', or we don't so commit and face what he nicely calls 'soritic drift', effectively continuing to turn the dial in the Self-Torturer.

Supersharp puts us somewhere between the two horns of this dilemma. When there are many E-admissible sharpenings and Liberal requires us to settle on one of them (it doesn't matter which), soritic drift *can be* a problem. It is often psychologically compelling to advance to the next E-admissible sharpening. *Pace* Tuck, obsessive fixation is not the only alternative. If we can settle on an E-admissible action—because there are many such actions and they are (at a meta-linguistic level) equally permissible—Liberal can capture the phenomenology as Tuck accurately presents it:

> we characteristically decide that we have done *enough* to reach our target, though we are well aware ... that on another occasion we might make a different judgement (Tuck 2008, 98. Emphasis in original.)

The 'judgements' here are practical. There are many stopping points with borderline-enough stones for a cairn, which are E-admissible and thus permissible. So when we stop at such a point, we need judge only that it is E-admissible, which doesn't preclude stopping at another next time. This is the Razian Basic Belief, as I defended it in Chapter 3. (I must concede, however, that as discussed in chapters 3 and 4 what I called 'mixing and matching'—choosing differently on different occasions—remains slightly awkward for Supersharp.)

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[2]Chang (2002), p. 684. See Elson (2017), pp. 355ff for discussion.

2 Self-Torture

On that picture, dealing with practical sorites does involve an unstable kind of state: we must stop at some E-admissible point, knowing that there are many such, and facing psychological pressure to keep moving to the next.

So what about a comparison between individuals and groups facing practical sorites? *Pace* Tuck (especially the earlier Tuck) I don't think we should be all that consoled by this comparison. The problems of procrastination *are* problems for individuals. Clearly, cairns get built and books get written. We don't *always* fail, and sometimes individuals overcome the soritical temptation to rest a little more. But let's not forget that many cairns *didn't* get built. Nearly all of us have unfinished (or un-started) DIY projects, often having fallen victim to something like the shepherd's soritical reasoning about the cairn. I assume I'm not alone in sitting down to watch a lengthy film at 7pm (plenty of time to watch something good and then go to bed at a decent hour!) then squandering my time in 5- or 10-minute intervals until it's 9pm and too late to put a long film on without staying up too late.

The point is that practical sorites do often lead us into procrastination, so we *do* go to elaborate lengths to get ourselves to complete our vague projects. We often fail. Completing iterative tasks is for good reason a focus of the enormous productivity literature in the self-help sections of many bookshops. For what it's worth, I particularly enjoy Newport (2019) and Burkeman (2021).

Moreover, these cairn-like cases are not the most threatening or difficult type. In Chapter 5 I distinguished between *single-threshold* and *repeating* practical sorites. The clearest single-threshold cases are where one has a preference about the application of some vague predicate: a preference that the grass not be wrecked, for example. Single-threshold cases are easier because that threshold adds salience, and once the threshold is passed the decision-theoretic ordeal is in one way or another over. Either things can't get any worse—the cairn can't be built, the commons is ruined, it's too late to meet the publisher's deadline—or at least there's no *temptation* to make them worse. In other words, 'at some stage so many people will have acted on [the soritical] principle that there is quite definitely no point in anyone making a contribution' (Tuck 1979, 154).

The Self-Torturer's plight doesn't look like that. A quick recap: every week she (ST) is offered $10,000 to turn a dial one setting on a device, increasing the electrical current flowing through her body. The increase is small enough that it definitely looks worth the money each time, but it is permanent. Foreseeably, if she keeps accepting the deal then she'll end up with a pain-money combination that she strongly disprefers to an earlier one.

The *Puzzle* of the Self-Torturer is that to avoid this obviously unwise outcome, at some point ST must refuse the money even when she (apparently) clearly prefers to take it. Can we vindicate saying No at *some* point whilst at every particular point Yes looks like the right answer?

In Chapter 5 I argued that she is caught in a in a repeating practical sorites. If my arguments have been correct, then she should not turn the dial all the way

to the end, but should stop at a somewhat arbitrary earlier point. And we do often stop turning the dial in the practical sorites we face. I did start to write this chapter, even though just one more email probably wouldn't have stopped it being written.

Repeating practical sorites like the Self-Torturer's are far harder to cope with. In the last chapter I argued that ST has not a single threshold but many. She wants to avoid 'life-altering' increases in pain, but one can undergo life-altering increases many times, and so she is always (or at least for a long time) caught in a vague project involving the *next* life-altering pain-increase. The temptation doesn't stop. Even at setting 900 it looks reasonable to take the money.

Nearly all the examples I'm familiar with in the literature are single-threshold. This is understandable in one sense, because they are clearer and because—immodestly and with apologies if I'm wrong—repeating vague projects are new with me. (Of course they are not fundamentally new because they can be presented as many single thresholds, but I think their existence as a distinctive challenging type of case that captures ST's plight *is* new with this book.) Many of the vague projects we care about have this difficult repeating structure. It's not as if we are indifferent about our pain levels *except* for crossing one threshold, and a cairn can be more or less useful and grass can be more or less pretty.

We often gloss over this complexity for good reason, but some examples in the literature are rather contorted into a single-threshold picture. For example, Tuck's example of spending on a national defence force relies on the claim that 'our criteria as to what is to count as protecting us from foreign attack are essentially vague' (Tuck 1979, p, 153). But I think this misrepresents the case. In public spending negotiations we are rarely confronted with reducing the armed forces to complete ineffectiveness in a single leap, so that we no longer have a defence force. Instead (in the UK at least) the worry is that this round of spending cuts could cause a serious harm to the effectiveness of the forces. And this repeats: once that effectiveness is seriously harmed, it can be seriously harmed again. At least at realistic levels of underfunding, we don't conclude that since the forces are underfunded there is no point in having any at all. Granted, the example of health spending on the same page doesn't seem to assume a single threshold in quite the same way—but the example is not pursued in detail.

Similarly, Jonathan Aldred considers an example of some developers who wish to build on an ancient commons, which no single development will apparently spoil. He makes the case explicitly single-threshold:

> An agent prefers the commons in one state to the commons in another state if and only if the commons is unspoilt in the former state and spoilt in the latter. Otherwise the agent is indifferent between the two states. (Aldred 2007, 381)

Agents will differ of course, but I think we are more likely to see this too as a repeating case: an ancient commons can face many stages of degradation, being spoilt is just one of them—and probably not the only one we care about.

In Chapter 5 I used the Bankrupt Shepherd who sells stones, destroying his infrastructure of cairns, as my example of a repeating practical sorites. Here's a group repeating variant:

> **Shepherd's Co-op.** There are 510 shepherds in a lambing co-operative, who own one stone each, assembled in piles. Sufficienly large piles are cairns and they are public goods, so *everybody each* attaches 15 utiles to each cairn. Utilities are linear in pounds, and nobody attaches utility to spare stones or cares about their neighbour's stones or lack of them. A trader sequentially offers each shepherd £1 for their stone. The trader will buy as many stones as the shepherds are willing to sell. All this is public knowledge.

Here and throughout I'll assume that cairns are 'pure public goods': all members of the group benefit equally from them, and cannot be prevented from doing so. Thus as a member of the co-operative you *qua* stone-seller gain 1 utile from selling. This is in your interest unless you lose 15 utiles *qua* member of the co-operative by wrecking a cairn in so doing.

Of course if you are strictly impartial then you don't favour your own interests. We can see how a repeating puzzle arises if, as in the last chapter, we for the sake of a concrete example imagine that 'cairn' is vague with just three sharpenings:

- s_9 a cairn is 9 stones. There are initially 56 cairns and 6 spare stones, so every shepherd has 56*15=840 utiles;
- s_{10} a cairn is 10 stones. There are initially 51 cairns and no spare stones, so every shepherd has 51*15=765 utiles;
- s_{11} a cairn is 11 stones. There are initially 46 cairns and 7 spare stones, so every shepherd has 46*15=690 utiles.

For each shepherd selling his stone is merely E-admissible. (Ignore numerical oddities where some stones either determinately do or determinately do not wreck a cairn. They are an artefact of the small number of stipulated sharpenings, and removing them would overcomplicate the case.) It's always indeterminate whether selling *this* stone wrecks a cairn. Thus this repeating case is actually a concatenated series of single-threshold cases. This is for clarity. We could instead stipulate a vague predicate such as 'a serious worsening of navigation' applied to the cairn infrastructure as a whole.

The case is simplified in another way too. It posits a single vague threshold—wrecked or not wrecked?—for each cairn. In reality a cairn might require hundreds of stones, so even a *single* cairn could engender a repeating sorites: how many stones would make this cairn appreciably better or worse for navigation?

For tractability, I'll stick with my simplified version. The repeats come from there being many cairns. We have a repeating practical sorites: a precise project of selling stones must be weighed against a vague one of maintaining cairns. As in earlier cases, under Liberal (where E-admissible actions are permissible) this engenders a permissive value-pump, because the sale of each stone is E-admissible. After 510 such permissible sales all the stones are sold so all the cairns are gone, and everybody is far worse off than he began, with only 1 utile.

Here vagueness is the problem.

And it is a problem. I've argued that many of the most threatening individual cases are repeating, and that it's far from obvious how to cope with them. The Self-Torturer has attracted a lot of philosophical attention for good reason. Now let's consider a group version of that case:

> **Group Self-Torture.** A thousand people are fitted with an electrical device like ST's, and they are all centrally controlled. It's currently on setting zero. Sequentially, those thousand people are taken to the control room and offered \$10,000 to turn the central control dial one setting for everyone.[3]

Granting complete impartiality, I think Tuck is correct that such a group case doesn't present any *added* difficulty over its individual variant. But what if we very slightly relax the impartiality assumption? Consider instead

Near-Benevolence. All members of the group attach a small amount of extra weight to their own interests.

To be clear, this is still optimistic because the amount of extra weight can be as small as you like, making the agents morally supererogatory by almost any standard. Assuming this slightly more self-interested motivational structure where each agent gives a tiny amount of extra weight to their own interests, we can make it plausible that the value *will* be pumped.

I invite you to share my feelings. In the individual ST's position, I'd feel somewhat uneasy. I must be careful not to turn the dial too many times and ruin my life, or even just damage it. But I'm reasonably confident I can avoid going *much* too far. Maybe I won't do a perfect job—perhaps I'll be too cautious and miss out on a lot of money, or perhaps I'll go a few stages too far and deal with a nasty ache for the rest of my life—but disaster doesn't await.

As one of the thousand in Group Self-Torture, my main emotion is dread. Whatever pain I must endure, there will be less money to ease it (since I'm offered a maximum of \$10,000). But even inreasing that amount tenfold, wouldn't ease the dread very much. Dread is connected to a felt lack of control, and my pain levels will be determined almost entirely by others. But most importantly, I simply find it unlikely that I and my fellow group self-torturers will escape extremely serious pain.

The way we cope with such cases is *political*. If possible, we might either come together in a coercive manner to limit dial-turns, or perhaps (for example) impose taxes: if all revenue must be shared equally then the incentive for each individual to turn the dial is much reduced, and I will at least be partially compensated for any pain increases. If we are a democratic group, the only way for us all to escape agony is likely for us to come to some kind of agreement along these lines, backed up by coercion—and stick to it. Let's be optimistic, and assume that would happen, that as a group we would engage in something like Tuck's 'obsessive anxiety about hitting a precise target'.

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[3]This case is similar to Derek Parfit's 'harmless torturers', but here they are torturing themselves. See (Parfit 1984, chap. 3, section 29).

3 The Climate Analogy

The UK touched 40 degrees Celsius for the first time in 2022, and London's Mayor says that the city's Fire Brigade had its busiest day since the Second World War.[4] We were and are repeatedly offered air conditioning or air travel at the cost of a small increase in atmospheric greenhouse gases ('carbon'). These gases increase the amount of energy retained in the air, warming the planet as a greenhouse warms tomatoes. Each increase in global carbon levels looks negligible, so accepting this deal looks rational. But eventually we will face either terrible impacts of a ruined climate or huge costs of mitigating or avoiding such impacts. It'll cost money when London needs a bigger Fire Brigade.

Our cumulative emissions are changing the planet in ways that will make it clearly, observably less habitable for us in 2052 than it was in 1952. Comparing the planet across a century we'll be able to see higher and more variable temperatures, more flooding, more intense storms, and so on. All being well, I'll turn 70 in 2052, which leaves plenty of time for truly disastrous effects of climate change to become apparent.

To avoid the worst environmental consequences, we must sacrifice some comfort by refusing some products and services. This is a slightly pessimistic assumption—that technological progress won't get us out of this mess at no cost—but I think it hard to deny. There is a lot of coal in the ground, so any technological advance would have to make leaving it there no sacrifice. (Which doesn't mean the hypothetical technology would have to be perfect; fossil fuels have other costs too.)

The sacrifices required depend on which emissions we must avoid and whether we can offset them. I've elsewhere defended the morality of carbon offsets, and if offsetting is both effective and just then we might not have to sacrifice *all* intercontinental flights, but even then we must sacrifice whatever else we'd have bought with the cost of the offset. Famously, offsets are so cheap only few people buy them, so if the price rises we might have to give up the flight after all.[5]

Most of us care about climate change. I'm assuming Near-Benevolence and thus that we care on moral grounds, but nearly all of us also have some self-interested (in a broad sense) preferences that are promoted by keeping climate change under control. We have some single-threshold vague projects. We don't want our children to cope with food-scarcity or resource conflict, future generations to condemn us, or the human race to go extinct in the near future; I don't want to spend later life in a wrecked, food-scarce environment. We have some repeating vague projects. I don't want large losses of biodiversity or my descendants to endure significantly increased resource conflict (or risk thereof). These can happen again and again: there will be other species to worry about after the polar bears have gone, and resource conflicts can repeatedly multiply.

Why don't we do something about it? We are doing some things, but we're in

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[4]https://www.bbc.co.uk/news/uk-62232654

[5]Elson (2024). More accurately, I've defended Broome's defence of carbon offsets against criticisms that they are unjust.

a practical sorites. Walter-Sinnott-Armstrong asks a pointed question: should I skip my Sunday pleasure drive in my 'gas-guzzling' SUV on environmental grounds? Doing so would impose a large (or at least extant) cost on my well-being or preferences for negligible environmental benefit. This is the inefficacy problem: insofar as we evaluate actions in terms of their consequences, there is no serious atmospheric reason not to go for the drive, but there is a pleasure reason to go. So, argues (Sinnott-Armstrong 2005, 312) climate change is 'not *my* fault' and 'finding and implementing a real solution is the task of governments'.

Broome (2012) distinguishes between reasons of goodness and of justice to reduce net emissions. Unlike Sinnott-Armstrong, he thinks we have reasons of justice not to impose expected harm by burning petrol for fun, but agrees that promoting the good by minimising the badness of climate change is the business of governments not individuals. Because governments have so much more causal influence over emissions, they can escape the inefficacy problem for goodness but are subject to the non-identity problem for justice.[6]

So despite their differences, Sinnott-Armstrong and Broome agree that reducing carbon emissions is (at least in large part) a matter for governments. Let's turn to governments. I said that I want to make optimistic assumptions in order to strengthen my pessimistic conclusion. Besides Near-Benevolent individuals, I assume a unified global political community. There are no international attempts to offload the costs of climate change mitigation onto other countries, for example. The global political community has in mind the interests of all humanity (at all times) in mind and the ability to escape the inefficacy problem: unlike an individual, the global political community can settle on a policy that meaningfully reduces emissions levels.

4   The Carbon Code will be Arbitrary

Such a unified global political community composed of Near-Benevolent individuals. It must settle on a carbon budget.

At the extremes, we could either stop all carbon emissions now or burn it all as fast as we can. The latter of these two is preferable; a wrecked climate is better than *immediate* mass starvation and social collapse.

That the 'far end' extreme is preferable to the 'near end' marks a disanalogy with the original Self-Torturer. ST would prefer to never take the deal than to end up in rich agony. But a superficial disanalogy, because in both cases there's an intermediate stage preferable to both extremes. Some intermediate level of carbon emissions in line with a sensible carbon budget—imposing emissions reductions compared to a free-for-all, but allowing us to live reasonably well—will, we hope, avoid *both* a wrecked climate and mass starvation.

Other analogues of Self-Torture also favour the far end. It's better to eat all the food we can than starve to death. To consider the simplest example, the Inverse

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[6]For the non-identity problem, see Parfit (1984), chapter 16.

Self-Torturer begins in filthy rich agony and is repeatedly offered a negligible decrease in pain for $10,000.

That example shows how some of these 'far end preferred' cases are even more difficult than the classic Self-Torturer. If simply refusing to take part engenders a terrible outcome, then we can't simply opt out of the puzzle. Such opting out is a common (though, I think, naive) suggestion in the classic case. Augustine claimed that for many, complete abstinence from some worldly goods is preferable to or easier than ideal self-control—'many, indeed, more easily abstain from them so as not to use them at all, rather than control themselves so as to use them well'—but in far-end preferable cases such as eating, abstinence is not an acceptable option.[7] The Inverse Self-Torturer must not only refuse to take part: she must repeatedly *pay* a lot of money for a negligible pain decrease. This is psychologically difficult.

Since total carbon abstinence is not yet an option, the global community must settle on a carbon budget. More realistically, we must settle on what I'll call a carbon *code*: even if we've determined an ideal carbon budget, there will be many ways to reach it. To take a terrible example, the same amount of GHG could be emitted by providing either a subsistence diet to millions or private jet flights to hundreds whilst the rest starve. (Is it disrespectful to casually use such an example? Perhaps—but these are the real stakes of climate change.)

We might initially have thought that the political community could start with a 'burn it all' code and then compare the marginal costs and benefits of loosening it at each point, allowing a more emissions and proceeding along the spectrum from restrictive to permissive codes (ignoring for a moment that at each point there are *many ways* to loosen the code). Since the far end involves ecological collapse which is definitely bad for welfare, the thought goes, at *some* point one of the loosenings of the carbon code has negative marginal expected welfare. So we shouldn't turn the dial past that point, because the additional emissions won't be worth it, and we should settle on that code. If the welfare benefits of a limited adoption of air-conditioning in Northern Europe are outweighed by its environmental costs, for example, then we say No and settle, turning the dial no more. (And parallel reasoning for other construals of the problem, of course, such as impartial goodness.)

Air-conditioning will be my animating example. Table 1 shows a range of potential carbon codes concerning air-conditioning in private homes in Northern Europe.

Table 1: Four carbon codes about air-conditioning in private homes.

NoCon	SomeCon	MoreCon	AllCon
No air-conditioning	Air-condioning permitted but highly taxed	Air-conditioning widely available	Air-conditioning freely available and subsidised

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[7]Augustine et al. (1955), Chapter 21 paragraph 25.

The intial thought was naive in the case of the individual self-torturer and it is naive here. I don't wish to illicitly assume anything about the task of carbon budgeting, so I'll argue that the best carbon code is somewhat arbitrary on four ways of construing the task. By 'somewhat arbitrary' I mean that though there is no knowably optimum or best carbon code, there are nevertheless some constraints and many carbon codes are clearly inadmissible. But there remains a wide range of not-clearly-inadmissible codes amongst which choice is arbitrary.

4.1 A Practical Sorites

On the view I'm defending, the political community is caught in a practical sorites. Let's assume for the moment that vagueness is indeterminacy, because I'll consider uncertainty below.

The community must balance the benefits of carbon emissions against the costs to the environment and the resulting harms, and it's indeterminate where this balance is optimal. This indeterminacy could arise in many ways, but as a general point if you accepted my examples of indeterminate preferences for individuals, then you should also accept that it will be indeterminate which set of carbon policies has optimal expected value for the entire population.

Indeterminacy could arise, for example, from indeterminate preferences amongst the population about landscapes versus air-conditioning. Imprecise credences about the location of climate tipping points will also engender imprecise *expected* welfare. The expected welfare of a certain level of carbon emissions depends on how likely it is to make enough ice melt to flood coastal cities; if that likelihood is unsharp then so is the expected welfare at that emissions level. IPCC reports are famously open about the levels of confidence they attach to their claims, and the markers—'very low', 'low', 'medium', 'high', 'very high'—in part denote imprecise credences.

We must aggregate the preferences or welfare of all. Raising and slaughtering cows and pigs is carbon-intensive but culturally significant for many. The pleasures of smoking meat and the close personal relationships nurtured by BBQ competitions must be weighed against expected environmental damage and the consequences thereof. This is not to mention the the potential natural value of forests cut down for livestock, the preferences of the animals, and any indeterminacies of population ethics (insofar as more carbon emissions allow for a larger population).

If the parallel with ST holds, it's indeterminate which code in a 'safe zone' penumbra is optimal. The penumbra consists of those codes which are at least *not determinately sub-optimal*. But in a repeating practical sorites whichever carbon code we consider, it's indeterminate whether a slightly looser one would be preferable. Turning the dial is never (or at least, rarely) determinately dispreferred.

That's what makes repeating cases so difficult. At each stage most synchronic decision-rules will say that a slight loosening is not impermissible (and it will be psychologically compelling), because the costs don't determinately outweigh

the benefits: we typically advance from one E-admissible code to another. So as we've seen in other foolish sequences, such decision rules could lead us to disaster. We must settle on a code even though loosening it wouldn't be determinately dispreferred.

4.2 Cyclic Preferences

Chrisoula Andreou has drawn the most explicit parallel between self-torture and climate change, arguing that even a unified community faces a self-torture scenario.

Andreou claims that ST has cyclic preferences—genuinely preferring to take the money and the current each week, but dispreferring some later settings to earlier ones—and similarly the political community *always* prefers to pollute a little more. The benefits always outweigh the costs when we pairwise compare adjacent emissions levels. Moreover, these preferences are a rational response to this kind of situation, but we shouldn't *act* on them. Though not focused on climate change in particular, Aldred also claims that vague goals engender intransitive preferences.[8]

I criticised the cyclic preferences view in Chapter 5. But here we focus on its upshot: we must 'settle, somewhat arbitrarily, on an option that is within the range of the acceptable'.[9] An arbitrary code within this safe zone is the only way to avoid the disaster that always following our preferences to always emit more would engender. This construal is the most threatening, because unlike the merely permissive value pumps of the other three, cyclic preferences *demand* that we always turn the dial.

4.3 Evaluative Incommensurability

On the third construal, the political task is evaluative, finding the impartially best—or most just, or fairest—trade-off between carbon emissions and other goods, but many of these goods are likely *incommensurate*. I've argued elsewhere that incommensurability is vagueness, but I've already considered the indeterminacy case so I'll not rely on that argument. I'll focus on putative 'hard' incommensurability which is *not* vagueness. In classic cases of such, the options—a career as a lawyer and one as a musician, for example—are better along different dimensions and 'too different' to be compared against each other by betterness or equal goodness. Partisans of hard-incommensurability then argue about whether *no* comparison holds between the options, or if something other than betterness or equal goodness does.[10]

Comparing coral reefs versus air-conditioning is at least as difficult as comparing two bourgeois careers. And if two carbon codes are hard-incommensurate, then neither is better than the other and there's no uniquely best trade-off

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[8]Andreou (2006); Andreou (2023); Aldred (2007).

[9]Andreou (2006), p. 107.

[10]Elson (2017). For classic defences of hard incommensurability, see Raz (1986) and Chang (2002).

between the competing goods. This is why (as we saw in Chapter 3) hard-incommensurability is often thought a plausible explanation of the Basic Belief, that many choices are arbitrary in that several options are consistent with reason. If neither option is worse then neither is impermissible, because neither is choosing the worse over the better. I'm arguing that the Basic Belief applies to the carbon code, too.

Even if adjacent codes are incommensurate, the last in a series may nevertheless be worse than the first: this intransitivity of 'neither better nor worse' is a hallmark of hard-incommensirability. We again have a permissive value-pump, because the next code is never worse. To avoid disaster, at some point the we must pick a code, but arbitrarily. Any particular candidate will be one of many incommensurate with both its neighbours.

4.4 Ignorance

Finally, let's make sure that I'm not rigging the game by assuming the presence of vagueness or intransitivity or incommensurability or some other funny business. What if we face a very difficult but fundamentally ordinary and orthodox choice, and there indeed is an optimal carbon code? One that maximises welfare, fairness, justice, or whatever the correct criterion is—let's assume optimistically that there's no arbitrariness in *that* question—or perhaps several equally good ones each better than all others?

Finding this optimal code will be difficult, for much the same reasons that the presence of indeterminacy or incommensurability was plausible. The global political community is a political idealisation but finding the ideal code would require superhuman *epistemic* idealisation. We are talking about aggregating the interests of everyone on the planet, including at least the present and future human population, and perhaps also the past population (since past emissions by certain groups may be relevant to how much emissions they should be allowed today), nonhuman animals, and natural value.

As in many difficult decision situations where there is a determinate correct answer we can't be certain of, we must estimate. Excluding the obviously unacceptable options, there will be a range of plausible 'candidate' codes. But for any particular such code, it'll be extremely uncertain whether a looser or tighter code would be preferable. Though there *is* a fact of the matter, we don't know whether the benefits of cool air in Northern Europe outweigh the costs of air-conditioning. And it's hard to see how we could know this, if we are far from any atmospheric tipping points.

We will thus have to choose arbitrarily from amongst the candidate codes. Aldred (2013), for example, argues that given such complexity we should be extremely conservative about how much carbon we emit. But such conservatism will involve arbitrariness: staying safely back from the edge means accepting that you almost certainly *could* get closer. (Tuck 2008, 86) argues that on his favoured epistemic view the correct response to a practical sorites is 'to pull one's horses up short of the cliff', and I think similar would be the practical upshot of Rebecca Livernois's claim that because the marginal costs of emissions are 'uninforma-

tive' of total costs, a 'social planner cannot know well-being is at a maximum until it has already declined'.[11]

(Andreou 2023, 174) claims that even if one opposes rational cyclic preferences, "the need for league-based satisficing remains, since our ignorance would leave us with the same practical challenge as in cases involving genuine rational preference cycles". I don't wish to appeal too much to authority rather than argue, but the authorities here seem clearly correct. If we know that there is a single determinately optimum carbon code and that all and only the codes in some (perhaps vaguely-bounded) set might be it, then when we are choosing a code to enforce we must pick arbitrarily from that range.

5   Democracy

I've argued that on any plausible way of construing the carbon budgeting task, a global political community faces at least some arbitrariness.

I'll take for granted the political *legitimacy* of imposing a somewhat arbitrary carbon budget, especially in an idealised case of global unity and democracy. The carbon code involves arbitrary balancing of competing interests, so the best form of justification we can hope for is not full justification for any *particular* carbon code as optimal, but as being within the safe zone and having been chosen by a legitimate process. If in an election we choose a code that's as good as any other and better than many, then even granted some arbitrariness we can be justified in imposing sacrifices on individuals.

This is a very optimistic picture of climate action. I wished away many kinds of conflict in assuming Near-Benevolence and a unified global community, but now I'll turn to pessimism. My worry is practical, not about whether it's legitimate or just for a democracy to do this—I just assumed it is—but about whether it is feasible.

Democracies often trade-off the interests of some against others, sometimes imposing quite difficult and arbitrary sacrifices. Timothy Endicott offers the memorable example of the *million raves*, where the legal issue is whether the sound is played at a level likely to cause serious distress to local inhabitants:

> The first defendant tormented most of Shropshire by emitting a succession of repetitive beats at a deafening volume, and he is convicted [...] the one millionth rave organizer played it at a hush that undeniably caused no distress to anyone. [...] if the decrement in volume in each case is trivial, it seems that no particular conviction ought to be the last. Between any two successive defendants in the series, there is no difference that the inhabitants of the locality can perceive. Finding the organizer guilty in one case and not in the next case seems arbitrary... (Endicott 2000, 57.)

Legal vagueness raises important questions but we *do* seem to cope with it. So why not something similar in the case of the carbon code? Why not, acknowl-

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[11]Livernois (2018), p. 188.

edging a large degree of arbitrariness, settle on a code from the safe zone and stick with it?

As Alice Baderin points out in a different context, 'settle' has two senses sometimes conflated: identifying the correct response to an issue and implementing or enforcing that response.[12] I'll call these the policy-making and enforcement tasks, respectively.

We can see the distinction between these tasks in Sinnott-Armstrong's 'finding and implementing' language. Similarly Broome writes that 'if we knew the correct level of global emissions, we could achieve efficiency by setting the global cap at that level'.[13] In the light of a practical sorites the distinction takes on new significance. I'll argue that when vagueness combines with the specific difficulties of climate change, the arbitrariness of the policy-making task makes the enforcement task difficult or impossible.

Broome sometimes writes as if populations and their governments are separate entities and that the latter can force the former to reduce emissions: he writes that governments 'can *compel* their people to make the sacrifice of reducing emissions' and that they are 'in one way or another going to have to *make* their populations emit less greenhouse gas'. Similarly for Sinnott-Armstrong, 'finding and implementing a real solution is the task of governments'.[14]

But in a democratic system at least, the distinction between something being my task and that of my government is not so sharp. Such a worry is anticipated by (Tuck 1979, 148), who notes that the most popular response to free-riding is social coercion, but coercive measures 'characteristically depend on co-operative action by the people concerned, and that the argument is therefore likely to turn into a *regressus ad infinitum*'.

My pessimism is not mainly about whether we will be able to choose an arbitrary carbon code, but about whether we'll stick to it. So let's suppose that we've democratically settled on NoCon rather than SomeCon, acknowledging that the choice between these was arbitrary, but this is where we've decided to draw the line. NoCon was chosen through a politically-legitimate procedure and is not clearly sub-optimal, so we'll be justified in using force to raid illicit air-conditioning dealerships.

The problem is that we can change our minds. Quinn (1990) himself argued that mind-changing—assessing every dial-turn on its own merits, rather than restructuring with a filtered series—leads to disaster under self-torture. We can be led into trouble if we treat every dial-turn as a separate choice, because we might turn the dial every time. But in a democracy each election *is* a separate choice. The electorate or parliament can always vote to turn the dial, leading to disastrous value-pumping.

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[12]Baderin (2014), p. 138

[13]Broome (2012), p. 42. Note that despite the 'correct level' language, Broome is extremely alive to the uncertainty and incommensurability at play.

[14]Broome (2012), pp. 66 & 94; Sinnott-Armstrong (2005), p. 312. My emphases.

5.1 Particular dangers of climate change

Climate change has many features which make it tougher than other group practical sorites, and make it plausible that we will vote that way. I'll consider them in turn. First,

(1) salience is not very helpful.

In many arbitrariness examples we appeal to *salience*. The default speed limit for urban driving in England is 30 miles per hour, which is arbitrary. It could have been 29 or 31. We get up at 7am not 7:02 then eat 2000 calories not 1990. Round numbers are often acknowledged to be arbitrary, but since one place is as good as any other, why not pick a salient one? (Wales recently reduced the urban driving limit—to 20mph not 23, of course.) We might even regard salience as a good-making feature of (for example) a diet or speed limit because it makes compliance easier, and so those choices are *not* as arbitrary as they may first appear.

But there's no real climate counterpart to thirty miles per hour. The actual targets of 2 degrees and 1.5 degrees of warming *do* involve suspiciously round numbers. But the complexity of the climate and economy means that 2 degrees, for example, doesn't translate into salient concrete actions. A target level of warming must be translated into a target GHG levels in the atmosphere, and then into policies that individuals comply with. Each of these steps introduces arbitrariness. There are many different ways to keep GHG levels below some number of parts per million, none of which is as simple as 'use your foot or cruise control to keep that dial below 30' in terms of concrete actions that individuals can take.

Salience is easier in single-threshold cases, because we can often see when we are near that threshold. "Leave your shoes at the door" to avoid a dirty carpet takes on extra weight when we can see the carpet is no longer totally clean.

If we were in real danger of crossing a threshold such as "making Earth unfit for civilisation by the end of this century", for example, then we might expect greater compliance. This threshold is vague (what counts as civilisation?) but most of us would comply with reasonable measures to avoid going over this cliff-edge. But the grinding, repeating nature of carbon emissions is less full of salient actions near such a threshold. This is why films such as *Don't Look Up* (where a comet is heading for Earth) are so misleading: we are not facing an extreme single-threshold case of investing enough resources to divert the comet.

(2) A carbon code imposes differential sacrifices.

Nearly everyone can comply with a speed limit and it doesn't doesn't distinguish between drivers. Nobody who is otherwise competent to drive is incapable of driving below 31mph in urban areas without major sacrifice.

But if the carbon code bans intercontinental air travel today and if you've not already flown from London to New York, you never will. Since many people have already done so, the carbon code determines which *people* make sacrifices. I'll talk in terms of bans, but levies and taxes merely impose such sacrifices in a more disguised fashion, as well as preserving more consumer choice. NoCon

says that some *people*—those who live in Northern Europe—suffer a concrete sacrifice, of air-conditioning. And

(3) those sacrifices are severe.

Air-conditioning may seem a trivial example, but heat deaths are no joke, not to mention the lost employment in the HVAC industry and its supply chain. It is indeed one of the more trivial examples, because carbon is the basis for our entire economy, and so limiting emissions often means denying someone a train, a flight, or a meal. The carbon code will seriously limit the lifestyles of individuals, because we owe so much of those lifestyles to carbon.

Carbon is emitted for energy production. Like money, energy is a *general means*: it gets us many other things we want, is a means to many other ends. (Tenenbaum 2020, 41–42) gives many other examples of general means, including having a car, adequate food, health, and knowledge. Carbon's generality leads to one of the main ironies of climate change: the effects of carbon emissions can cause increased demand for more emissions. Air-conditioning used to be a punchline in many European countries—something for decadent Americans—but no longer, as heatwaves take hold.

Thus we shouldn't discount the possibility of disaster. The ironic vicious circle could accelerate the loosening dynamic: what if major cities become truly uninhabitable without carbon-intensive infrastructure? The vicious circle means that the reasons to vote for carbon-intensive adaptation schemes become stronger.

(4) The sacrifices are non-compensatable.

Some losses can't be compensated. If I stop you seeing your mother again, then nothing else I can offer you will make up for it. But because of carbon's foundational role, many such non-compensatable goods depend on carbon emissions. If you are either banned from intercontinental air travel or can't afford it because of a carbon tax, and your mother lives a long flight away, then you are banned from seeing her again. Similarly, if you must leave your home city because it's increasingly exposed to heatwaves but the carbon code forbids air-conditioning, this loss might be impossible to compensate.

With losses that *can* be compensated, on the other hand, adequate compensation will typically involve imposing costs on others—most obviously if they are direct financial reparations.

(5) This all takes place in the shadow of unfairness.

A lot of GHG emissions have already taken place. Some of our carbon endowment has been squandered, and the indulgences of the last few decades mean that we'll now have to emit more carbon to ensure basic subsistence for the global population. If the carbon code makes a 'budget' flight to Greece inaccessible for me, this is partly *because* others have flown to New York at great carbon cost.

But much of it was not squandered. Britain and the USA each used coal to rapidly industrialise and get rich, for example. If coal mining is banned today, some other coal-rich countries will never be able to build similar heritable wealth. Except for the most egalitarian code we can imagine, meaningful emission re-

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strictions may entrench this unfairness: the rich world's coal-descended wealth builds solar farms, and the rest suffer rolling blackouts or (more optimistically) pay to import electricity. Not for nothing does (Broome 2012, 68) call the division of a global emissions cap between countries 'the most hotly debated topic in all the politics of climate change'.

These features of climate change make enforcing a meaningful carbon code a serious practical problem. We are talking about imposing severe non-compensatable sacrifices against a background of inherited unfairness, for the sake of (at best) no determinate, knowable benefit to anyone as compared to a slightly looser version.

6   The Democratic Dynamic

As I mentioned, my pessimism lies in the likelihood of a value pump. We might make a plan, but will we stick to it? The core problem is a *motivational asymmetry*: we continually face stronger incentives to emit more than to emit less. And thus to vote for more emissions.

The problem can be sharpened by considering the dynamics in a particular election. Suppose again that a carbon code—NoCon—is agreed and notionally in force. This will not stop the warming effects in the short term. As temperatures rise and more people die during Summers in Northern Europe, some people (call them 'Loosers') from the affected areas wish to revisit the vote and move to SomeCon. They want air-conditioning—or at least for it not to be outlawed— either because they are suffering for the lack of it or because they stand to benefit economically.

The Loosers have powerful arguments on their side. NoCon imposes serious and non-compensatable losses on them, losses which are not determinately outweighed by any benefits to others. Moreover, moving from NoCon to SomeCon wouldn't be the first indeterminately-beneficial loosening, so has precedent— this is the relevance of point (5), above.

The Loosers will be the cliche 'small group of determined individuals', since this matter is very important to them. The benefits of sticking with NoCon over SomeCon are diffuse to the point of imperceptibility, but the costs are concentrated. Depending on which of the four construals above we adopt, there is immense *psychological* pressure to see the costs of loosening as no cost at all.

Table 2 shows the relevant manifesto pledges of two political parties. It's easy to see how the Growth Party will pick up many Looser votes. Consider a Looser who cares both about sleeping comfortably at night and also about the state of the atmosphere. Loosening the code will clearly contribute to the former goal (it'll make it easier for her to get air-conditioning) but will make no determinate difference to the latter (since the additional emissions are a drop in the ocean).

Table 2: Two political positions.

	Growth Party	Green Party
Air-conditioning	SomeCon	NoCon
Brownfield sites	HVAC supply chain	Leave empty

This will be so even if we follow Tuck in assuming that all involved are absolutely impartial utilitarians. Because it's indeterminate whether NoCon or SomeCon is the overall optimal policy—both are in the safe zone—campaigning and voting either way is E-admissible and thus permissible. So such a group *might* turn the dial at least once, and for psychological reasons this is what we might expect (particular instances of sorites tolerance principles are extremely compelling).

On the slightly more realistic Near-Benevolence, Loosers voting for the Growth Party seems not only E-admissible but rationally required. As before, there is only indeterminate reason to vote Green, but for the Loosers there is added determinate reason to vote Growth: they will be permitted air-conditioning. The voting exercise is structurally similar to going for a drive in an SUV. Some determinate expected value on the one hand (either the near-certainty of going for a drive or a small expectation of gaining the enormous benefit of air-conditioning), no determinate cost on the other.

This must be slightly qualified. The additional weight the voter attaches to her own interests can't be *arbitrarily* excessively small, lest we be caught in a small-improvement argument: the extra motivation might not be enough to tip the balance if that balance is insensitive to sweetening. But here (3) the severity of the sacrifices comes into play, in that major improvements to my quality of life could be sufficient to outweigh their immediate costs (I might dislike the noise from the brownfield site development) even if they make negligible contribution to climate change.

But what about Everybody Else, who (in the analogy) has no wish to go for a drive? They won't directly benefit from the move to SomeCon and massively outnumber the Loosers. Northern Europe hosts a small fraction of the world's population, and only a small fraction of *us* care enough about air-conditioning to make it an electoral issue. This is not an incidental fact of the case: the small numbers involved make it more likely that the carbon impact of loosening will be negligible.

Focusing on impartial concerns, Everybody Else too will lack strong motivations to vote Green over Growth, especially if they are attached to background political views that justly imposing restrictions or sacrifices requires a *clear* net benefit. In an open democracy, Everybody Else knows that the choice between SomeCon and NoCon is arbitrary, and so knows that on its merits this criterion isn't determinately met.

Many others will also have partial reasons to vote Growth. For example, consider those amongst Everybody Else who *want* the brownfield sites to be developed, not because they want air-conditioning for themselves but because they consider

the empty sites a symbol of economic decay or stand to benefit from their redevelopment. By parallel reasoning to that above, they will have some motivation to vote for the Growth Party and little or none to vote for the Green Party.

We thus see that the democratic dynamic is just the "it's not *my* fault" problem applied where the action is not going for a drive but voting a certain way. So the problem I'm considering is not particularly original, but that makes it harder to deny. When inefficacy recurs at the political level, kicking climate action upstairs to governments is no solution in a democracy.

A similar dynamic will also occur during any post-electoral negotiations. We can see the outlines of a winning coalition: the Loosers get their air-conditioners, but keep their empty brownfield sites because the HVAC factories are built in Everybody Else's territory. The latter don't want cooling units, but do appreciate the economic development. Everybody wins (except perhaps the atmosphere, and that's an indeterminate matter).

That of course was just one possible loosening of the code. At the next election, there will be another group of Loosers, seeking perhaps MoreCon or perhaps some wholly unrelated use of carbon. Because carbon emissions are *so* useful, there will always be ways in which life could be made better for a concrete group of people by emitting a little more.

In some politics jargon, I've been arguing that if a carbon code is not 'entrenched' and so is up for loosening through the routine political process, it is likely to be loosened thanks to the asymmetry between the small group who wish to do so and the much larger group who don't care strongly either way.

The scenario is obviously speculative, nevertheless I think the underlying dynamic is plausible. We should not condemn the Loosers: if the carbon code forces them to suffer on Summer nights for no determinate reason, then what are democratic processes for if not to seek to change that code? Nobody is pushing for determinately worse outcomes out of naked self-interest, assuming Near-Benevolence.

As such, no particularly pessimistic assumptions are involved. This means that the pessimism runs deep: the tendency to increase emissions follows from the structure of the problem itself and the nature of democracy. (Andreou 2006, 96 and 107) argues that 'being sympathetic and well-informed may not be enough to prevent us from destroying the earth' and that the assumption of an optimum level of pollution is 'potentially dangerous'; I've argued that her pessimism doesn't go far enough. Even once we drop that assumption, another danger arises. The Self-Torturer can impose an arbitrary limit on herself, but she doesn't have to persuade her personites to vote for it.

The special features of climate change make democratically internalising an arbitrary carbon code particularly difficult. The problem has been that the carbon code can always be loosened at the next election, and because we are caught in a practical sorites there is always pressure to do so.

7   Compound

In this book I've been defending the decision rule Compound for vague preferences, which (I claim) forbids completing foolish sequences. So why not set aside my ecumenical approach to the carbon question and appeal to Compound here, too? The rule forbids us from completing a foolish sequence by loosening our carbon emissions too far. There is a non-arbitrary basis for stopping the climate dial at the *last* carbon code before we collectively complete a foolish sequence.

Suppose for a moment that Compound does indeed pick out a particular point. If you installing air-conditioning is what makes the human race complete a determinately impermissible sequence of actions, then that's some extra reason not to do it.

Nevertheless, there is a big difference between groups and individuals. Considered in isolation it remains indeterminate whether SomeCon is an improvement over NoCon, and indeed interminate whether previous loosenings (including those during the initial negotiations of the carbon code) were the impermissible ones. Everyone who accepts Compound can see that each dial-turn is indeterminately-beneficial, and that completing a foolish sequence by polluting too much is sub-optimal. Compound indeed provides us all (as a group) some extra reason not to turn the dial past this point, so the purely impartial voter may indeed be stopped by Compound. But given Near-Benevolence, Compound's verdict may not provide any particular group of voters *sufficient* reason to counteract the motivational asymmetry.

In any case, Compound picking out a specific carbon code is a fantasy. The optimum level of pollution is vague, and phenomena such as second-order vagueness should make us doubt that we can precisely identify the completion of the first foolish sequence. We rejected decision rules such as Superexpectation in Chapter 3 because they assume more structure than is plausibly there. Compound tells us to stop at some point, but it doesn't tell us where, and so doesn't escape arbitrariness. Throughout I've argued that second-order vagueness is not a theoretical problem, but here it does present a practical one.

On a more positive note, I do think Compound (or something similar) puts limits on how pessimistic we should be. It may stop us from making the Earth uninhabitable. Just as the repeatability reasoning seems to lose force for the Self-Torturer as she reaches the agony of later settings, so we can imagine that demands for air-conditioning and the like might meet greater political resistance once billions are clearly feeling the effects of climate change. We are not in a single-threshold situation, but the dynamic above might push us quite far beyond any plausible safe zone of borderline-acceptable emissions limits. Compound might have to be violated many times before it gets sufficient traction.

8 Conclusion

I've argued in this chapter that groups can face vague projects too. *Pace* Tuck, repeating practical sorites in particular can pose a severe challenge for groups.

I focused on one instance of this, that of climate change. To keep carbon levels under control, it's likely that some people must forego some air-conditioning or air travel—or more pessimistically, food—on an arbitrary basis. They have strong reasons to resist the sacrifice, and others have far weaker (or not even determinate) reasons to resist small dial turns. This motivational asymmetry risks leading us into a value pump.

I'll conclude by responding to an objection: whatever the merits of their case about carbon levels, won't the Loosers clearly be illegitimately asking for special treatment when they ask for banned air-conditioning? No. The Loosers are not *breaking* the carbon code, but seeking to amend it, through a legitimate (indeed, the only legitimate) mechanism, that of an election. They are not violating the deal but seeking to alter it.

Nevertheless, the objector continues, might not the act of seeking to change the agreed carbon code be seen as somewhat disreputable by Everybody Else, to the point that it won't get electoral traction? It might be viewed as dangerously precedent-breaking, for example. If the deal is altered, the danger is it might be altered further. This optimistic cousin of the motivational asymmetry has other members of the group recognise the potential for value-pumping—they too would like to loosen in various ways, if they can—and thus gain motivation to resist the *first* dial-turn.

Since departures from existing net zero (and similar) plans are often justified by politicians on grounds that they will have 'insignificant' or 'negligible' effects on carbon targets, I think it's fair to say that current emissions plans and agreements do not have the kind of informal entrenchment needed to engender such reactions. As I write this, a think-tank led by the former British Prime Minister Tony Blair has just published a report on climate change policy. Most controversial is the foreword written by Blair himself. Here is the opening of its second paragraph:

> So, in developed countries, voters feel they're being asked to make financial sacrifices and changes in lifestyle when they know that their impact on global emissions is minimal.[15]

Despite the controversy, I think that this is fundamentally accurate, especially when it comes to *particular* sacrifices. (I'm endorsing it as a factual claim about what voters feel, not endorsing those feelings as correct.) My suspicion is that existing emissions agreements do not carry the kind of political and psychological weight that would allow them to be seen as definitive-though-arbitrary, and as such dial-turning is not seen as setting a damaging precedent. In other work I hope to pursue a more positive counterpart to the argument of this chapter—what will be the most effective democratic means of entrenching

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[15]Fursman (2025).

carbon restrictions?—but it would take me too far from the topic of this book, so here I focus on the bad news.

Andreou is right that the search for an optimum pollution level is a potentially dangerous misconception, but the dangers go further than that. *Without* a belief that sacrifices are justified by a particular optimum set of policies, we may well keep turning the emissions dial: each turn benefits some people and imposes negligible costs on others. *Pace* Tuck, here a group practical sorites seems especially challenging. When important interests of specific individuals are on the line, the ballot box seems particularly vulnerable to value-pumping, and such a group case is far more dangerous than that of an individual who bears both the costs and the benefits.

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