Preserving value in the face of climate change: a pluralist account

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Declaration

I certify that the thesis I have presented for examination for the PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

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Abstract

The main purpose of climate policy is to preserve what is valuable in the face of dangerous changes to the climate. It must do so urgently. This urgency means that we cannot hope to change deeply held and widespread beliefs about value in time. Instead they ought to be, and can be, accounted for in policymaking. This thesis explores how a pluralist account of value can inform climate policy without falling into some of the pitfalls faced by traditional environmental ethics. I focus on some commonly held pluralist and anthropocentric beliefs about value and the impact they ought to have on key questions of climate policy, so that what is most valuable is preserved. I defend the widespread view that some things have irreplaceable value. I identify the class of things that have the strongest claim to such value, and argue that climate policy ought to give priority to their preservation. Another claim about value that I explore and defend is that the autonomy of future people is both valuable and something we can protect and advance today. I argue that we can make sense of the kinds of options future people will require to be autonomous, even if we cannot predict their conceptions of the good. Finally, I explore the widespread anthropocentric view that there is no value that is independent of humans. I argue that this view cannot be used to justify environmentally harmful policies, and that it does not on that account need to be avoided in policymaking.

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Introduction

My aspens dear, whose airy cages quelled,
Quelled or quenched in leaves the leaping sun,
All felled, felled, are all felled;

[…]

O if we but knew what we do
When we delve or hew-
Hack and rack the growing green!
Since country is so tender
To touch, her being so slender,
That, like this sleek and seeing ball
But a prick will make no eye at all,
Where we, even where we mean
To mend her we end her,
When we hew or delve:
After-comers cannot guess the beauty been.

(Hopkins, 1953)

If you walk upstream along the Thames from Oxford, past the village and holy well at Binsey and towards the abbey ruins at Godstow, you will pass some poplar trees. These stand in a place where Gerald Manley Hopkins once walked, more than a hundred years ago. The trees there, or rather their stumps, inspired him to write this poem about loss, and about carelessness. Hopkins brings to the fore not just the (as he saw it) irreversible nature of this loss, but also the way it came about through human carelessness. We do not know what we do when we cause these losses, so we ought to tread more carefully.

Of course, Hopkins was wrong about the permanence of the loss he was describing. If you walk along the same stretch of river today you will see majestic poplars reflected in the water, their airy cages quelling the sun as they ever did. In fact, the poplars have been replanted twice since Hopkins' time. Why, then, should we be so careful? Perhaps Hopkins' perspective is shortsighted, or he did not allow for the power that we have, as humans, to make good the damage we cause.

For a long time, I thought the trees he wrote about were different ones further downstream, that had been felled and not replanted. There, big stumps were all that remained. These seemed to me

more appropriate, given the spirit of Hopkins' poem. In my mind, at least, these stumps gained a meaning and a value far more important than the trees upstream. They inspired me to reflect on the relationship between humans and nature, and the way we construct the landscapes we live in. I also wondered whether I would miss the trees as Hopkins had done, if I had known them like him.

In thinking this, I was clearly mistaken about the identity of these tree stumps. The place they held in my thinking was based on a fundamental error: I thought they were valuable because of their connection to Hopkins, a connection that did not exist. But was I mistaken in valuing them? I never knew the trees Hopkins mourned. Instead, I had built a relationship with these ultimately unrelated stumps. They made my summer walks more interesting, and inspired reflection on some important and interesting questions. In this way, they had some value to me, built across many walks along the river, even if the process that led to that value emerging began through a mistake.

When Hopkins' poplars were felled he clearly thought this involved an important loss of something valuable. They were dear to him, and presumably to many others too; we can understand that they were majestic, and reflected beautifully in the still waters of that stretch of the river. These are all good reasons to value the trees and to regret their loss. What is more, according to Hopkins, we do not know what, exactly, we lose when we so carelessly damage nature. Losses we cause or allow today may turn out to amount to losses of value that become apparent only later, when it is too late to prevent them. It can also be difficult to tell which losses will turn out to be genuinely irreplaceable. Today new trees stand along the Thames, but we can no longer ask Hopkins whether he thinks some value was lost regardless. If the unrelated stumps further downstream, meanwhile, were somehow lost, then this loss would be keenly felt by me. This, too, would be a loss of at least a personal kind of value.

The ways we value things, and the ways we mourn their loss, are various. This means that the ways we ought to react to losses, and to their possibility, also vary. Why and how we value something

has implications for what the loss of that thing means, for whether that loss is replaceable or avoidable, and for how much we ought to regret it. This means, at least, that we cannot treat all losses of value the same, or seek to avoid them in the same way.

The stretch of the Thames around Binsey and Oxford, as with river stretches all over the UK, is flooding more than before. This flooding is also becoming more severe and destructive, a development partially caused by heavier rainfall due to climate change (Fan, 2024; Rau et al., 2020). This flooding will cause damage and destruction to homes, infrastructure, and to nature. As such, it will lead to the loss of a range of different kinds of value.

This is a just one kind of loss that is already being caused by climate change. Many losses are occurring now and more are likely to be caused in the future, regardless of whether we mitigate the effects of climate change effectively. Droughts in vulnerable areas will lead to widespread death and suffering, and to the collapse of long-standing ways of life that depend on the land or on agriculture (Barnett & Webber, 2011; Li et al., 2009). Climate change will damage ecosystems, and the life that depends on them, human and non-human. Rising water may cover not just individual homes but entire communities, displacing countless people. Wildfires are already devastating landscapes (Barnes et al., 2025). Ancient sites and monuments are increasingly at risk (Markham et al., 2016). Meanwhile, our response to climate change can lead to losses too, in places like coal-mining communities or in places dependent on the oil industry. Here, decarbonisation can quickly unravel communal ways of life and create widespread unemployment (Carley et al., 2018).

In short, climate change will lead to the loss of immense amounts of different kinds of value. This is the insight that motivates this thesis. This idea, in turn, gives rise to a range of questions. Given the diverse value we stand to lose, how can we go about prioritising the preservation of some kinds and instances of value above others, and how can we do this in a way that ensures future people have access to what is valuable to them? How can we shape climate policy so that it does not cause unnecessary and important losses of value? This thesis is an attempt to make better sense of some

of the diverse kinds of value threatened by climate change, and of how we might better preserve them through effective climate policy. I begin from the observation that not all value, and not all losses of value are the same. In other words, I adopt a pluralist framework of value, which I discuss in more detail in chapter 1. In that chapter, I explain why a pluralist picture better enables us to understand the significance of losses to climate change, and how to address them, than a monistic view according to which there is only one kind of value, and only one way in which something can be valuable.

The value pluralist approach helps us better understand the value lost when Hopkins' poplars were felled, given that they have been replanted twice since. Similarly, we can make progress in understanding and accounting for the climate change-induced decline of reindeer herding among the Sami in Lapland, even if future generations are likely to come to value completely different ways of life. A pluralist approach can better explain what value we should put on the possible loss of the neolithic site at Skara Brae on Orkney to rising seas and stronger storms (see Day et al., 2019), even though no one has lived there for thousands of years. A careful study of the nature of value from a pluralist perspective can also explain what goes on in cases like that of the value I placed on the tree stumps in Binsey, which was based on a mistake. Perhaps future people will be content with living in a world with far less untouched, thriving nature. Does it matter that they value their environment just because we forced them to get used to it? Are some of the losses caused by climate change irreplaceable, and if so, how should that impact our decision-making? A value pluralist approach can provide better and more plausible answers to these kinds of questions, or so I will argue.

The core research question of the thesis is this: how should we preserve things from loss to climate change, given the plural ways things can be valued and be valuable, and given the different ways in which things can be lost? I start from a value pluralist view which, as I will go on to argue,

reflects how value and losses are commonly thought about, while also reflecting the plurality of ways in which their loss can be understood.

I will not provide a comprehensive decision rule that policymakers facing difficult decisions in the face of climate change should use. I will, however, seek to make progress in our understanding of different kinds of loss, and how they bear on the choice-worthiness of climate policies. My answers to these questions will be shaped by the starkly non-ideal character of climate change: we know that a lot of value will be lost, but we have some ability to limit the amount of value lost, and also to decide which valuable things, and what kinds of value, are preserved. I will provide some suggestions as to how we ought to do that.

This will require me to address a range of complex questions about value and loss. First, how do we even make sense of the idea that different things can be valuable in different ways? I will begin the thesis by introducing a broad kind of value pluralism. In particular, I will highlight some key pluralist beliefs about value, such as the idea that some losses are irreplaceable, and focus on how taking these beliefs seriously should impact climate policymaking.

Second, and relatedly, are some values incommensurable, meaning that two things with different kinds of value cannot be ordered through a common measure of value? If this is the case, then it threatens to make decision-making difficult, if not impossible: how are we to compare two losses if they involve incommensurable kinds of value? I will seek to help us move beyond obstacles such as these, while still recognising the plural nature of value. Even if values are incommensurable, I will argue, there is much we can say about which policies should be pursued and which avoided.

Climate change will significantly impact the future of our planet, and the lives that future people will live here. As such, for much of the thesis I will ask the reader to imagine a range of futures. The decisions we make today will impact what kind of world our successors will live in. I will explore some desirable features of that world, the kinds of value we should hope it contains, and

how we can permissibly shape the future of the world so that it contains the value that future generations ought to be able to enjoy.

I will not provide specific policy suggestions or prescriptions. This is a study of value and how it works in a particular context, and such a study cannot tell us exactly what to do without a great deal of further normative and empirical argument. I will, however, suggest that once we take key pluralist beliefs about value seriously, this will make some policies more or less attractive than they otherwise would be. I will generally frame my conclusions in terms of reasons: some facts about value give us strong reasons to act or refrain to act in certain ways, and policymakers should take these reasons into account.

I begin in chapter 1 by explaining in more detail what I mean by value pluralism, and how it informs the thesis. I start from the fact that when policymakers make decisions on how to combat climate change they make, by necessity, a range of normative judgements. They must decide how bad, overall, different possible outcomes are, and therefore what measures are justified in order to avoid them. Many valuable things are already being lost to climate change, and urgent action is needed to avoid the loss of those things we have most reason to preserve. I argue that in a crisis, policymakers must account for what people in fact think, so that the policies they pursue enjoy support. This is also a moral imperative – the risks and sacrifices that climate policy (or its absence) will impose on people must be justifiable to those who are expected to bear them. Political philosophers who want to inform urgent policy cannot hope to radically change the attitudes and priorities of people in the time available. Principles that are unlikely to ever be accepted by existing people cannot inform policymaking in non-ideal circumstances. As such, I focus on pluralist beliefs about value that I take to be very widely held in the world as it is.

Pluralist views, especially where they imply value incommensurability, are often dismissed as impractical to account for in rational decision-making, particularly in the context of cost-benefit analysis. However, I argue that an approach that takes seriously how those who suffer the

consequences of climate change in fact think about value cannot be monist. I contrast the pluralist approach I favour with the value monist approach favoured in climate economics, as well as the sometimes unwieldy versions of value pluralism favoured in environmental ethics. I argue that a carefully articulated pluralist view both can and should influence policymaking, and I discuss a few broad proposals for how it might do so. I return to different proposals of this kind in later chapters, as I consider specific key pluralist claims and how they apply to climate policy questions.

Chapter 2 is about one key claim of this kind: that some things have irreplaceable value. I argue that we should prioritise the preservation of such value, and that this should shape adaptation policy. Adapting to the effects of climate change often involves the replacement of valuable things with other things replicating their function or valuable properties. Consider, for example, replacing the crops farmed in a drying region, or the replacement of eroding natural flood defences with artificial ones. This suggests a tension between the preservation of existing things, including those with irreplaceable value, and adaptation. Intuitively it makes sense to prioritise the preservation of that which has irreplaceable value. After all, we have no prospect of later replacing any lost irreplaceable value. If something has truly irreplaceable value, then we have one strong pro tanto reason not to destroy it or allow its destruction. This intuition, however, often seems impractical - an expansive notion of irreplaceable value could make some common adaptation measures difficult to justify. Moreover, some are sceptical that there is such a thing as truly irreplaceable value, and if there is it may be so widespread that it makes no sense to preserve it all. The value monist approach of climate economics, for example, does not tend to recognise irreplaceable value – if there is only one kind of value, then the loss of any valuable thing can be fully compensated for. Many environmental ethicists argue that this is counterintuitive, but sometimes operate with an overly expansive and poorly defined notion of irreplaceability.

In this chapter, I defend the idea that there is some truly irreplaceable value, and I also defend the view that the preservation of such value should be prioritised. I propose that the intuition that

irreplaceable value should be preserved as a priority tracks a genuine moral consideration, and that it should be accounted for in climate policymaking, particularly in the context of adaptation policy. I argue that most relevant instantiations of irreplaceable value are cases of relational value, where communities have built value-conferring relationships with objects or practices. These objects and practices have gained irreplaceable value as a result of these relationships. I show that, if this kind of irreplaceable value is taken seriously, some adaptation options become harder, and some easier, to justify.

In chapter 3, I turn my focus towards the future and to how we ought to treat those who come after us. Here, the key claim about value is that the autonomy of future people is highly valuable, and that we can directly impact how autonomous their lives are. Our generation is faced with a number of important future-affecting decisions. Some of the most important concern our response to climate change. How quickly we reduce our emissions, how well we can protect ecosystems from the effects of climate change and what things we choose to preserve will have a very significant impact on the lives people are able to live in the future. My contention in this chapter is that, if we (as we should) care about the ability of future people to lead autonomous lives, then we need some method or principle for judging our actions for their effects on future autonomy. I propose and defend one such principle, the *Trusteeship Principle*.

I defend the idea that future people are entitled, as a matter of justice, to an extensive kind of autonomy that goes beyond the satisfaction of their basic needs. Indeed, the *Principle* I defend depends on an expansive but, I think, defensible view of the autonomy-related interests and entitlements of future people. In particular, I defend the idea that future people have rights against us interfering both with the *formation* and the *pursuit* of their conceptions of the good. The former violations occur when we improperly influence the conceptions of the good of future people. The latter occur when we do not leave them the options they need for the effective exercise of their autonomy. I will argue that since future people do not yet exist, we must hold these rights in trust

on their behalf, and that this has important consequences for how we ought to approach decisions that will affect them.

Chapter 4 follows directly from the previous one. Having established that we ought to leave future people the options they need for the effective exercise of their autonomy, I focus on how we should identify what these options are. I argue that we should aim to preserve a diverse range of valuable and potentially valuable things, whether they be species, landscapes, ways of life or places. To be more precise, I argue in a value pluralist spirit that we should aim to preserve types of things that are diverse across a range of potentially value-conferring properties. In other words, we should preserve things that we value for a range of different reasons. We should not just preserve valuable species, but valuable landscapes too. Among landscapes, we should not just preserve beautiful chalk cliffs but windswept steppes too, because these are valued in different ways and because of different properties. The White Cliffs of Dover and the Hungarian Puszta are instantiations of very different, but potentially valuable types of landscape. We have reasons to preserve instantiations of both of these potentially valuable types.

My arguments for this conclusion depend on the fact that we do not know what will be valuable in the future. We are able to identify things that are very valuable to us now, and their value gives us strong reasons to try to preserve them – many of these things, we tend to assume, will be valuable to future people too. I argue, however, that we should also endeavour to preserve things that are not especially valuable to us now, because they may be valuable to future people. Identifying things that will be valuable to future people, however, is difficult. It may be that future people find the White Cliffs of Dover immensely valuable, and the Puszta worthless; alternatively, the Puszta may be what best conforms to future aesthetic tastes. Chalk may become a commodity with exceptionally high use value, or it may become worthless or even dangerous. These are things we cannot reliably predict. The appropriate response to these uncertainties, I argue, involves the preservation of things that have a diverse range of potentially valuable properties. I make use of

the concept of option value and explore how it can be used to inform irreversible decisions where the value of options may change in the future.

In the fifth and final substantive chapter of the thesis, chapter 5, I turn to anthropocentric views of value, and the question of whether they should be avoided in the context of climate policy. Anthropocentrism has been blamed variously for the emergence of climate change, and for the continuing lack of effective action to combat it. However, the term is often poorly defined. In this chapter I argue that this anthropocentrism critique is strongest when it is understood as a claim about value, in the way it often is in key debates in environmental ethics. However, even in this form it is difficult to show that anthropocentrism justifies environmentally harmful policies. Because of this, I argue that we can preserve environmental value in the face of climate change even if we have an anthropocentric view of value.

I first explore the widespread view that part of what has caused continued inaction on climate change is humans being anthropocentric in the sense of acting in their self-interest at the expense of other interests. I argue that not only are humans not acting in their interest, avoiding an anthropocentric perspective makes effective climate action more difficult. I then focus on a related, but more precise, anthropocentric view which holds that there is no value that is independent of human valuers. I argue that this view cannot be used to justify environmentally harmful policies, and that it does not on that account need to be avoided in policymaking.

I do this by arguing first that it is difficult to show that those who believe all value is dependent of humans are making a mistake about value. Second, I argue that even if this view of value is mistaken, it still does not justify policies that lead to the loss of environmental value. In making this argument, I make use of key arguments around the assisted migration of animals and Solar Radiation Modification (SRM) and argue that an anthropocentric theory of value does not make these easier to defend.

In the conclusion of the thesis, I take stock of what these arguments show us about the nature of value and of loss, and about how effective climate policy ought to account for the plural nature of value. I also consider some potential limitations of this thesis, including the fact that it does not provide specific policy prescriptions or suggestions, or suggest a systematic means for evaluating and ranking policies.

Despite these limitations, over the course of the next chapters I hope to make significant progress in understanding how we can better preserve value in the face of climate change. Above all, I will be arguing for the importance of taking plural values, and some common beliefs about value, seriously. I will also argue that policymakers can account for such value. Many things threatened by climate change are valuable, and they are valuable in irreducibly different ways. This means that their losses are of differing significance too, and that it is more important to avoid some of them than others.

Next, in chapter 1, I begin to make this case. I do so by characterising climate change as a non-ideal situation that brings with it several constraints on policymaking, which together mean we must take some core pluralist beliefs about value seriously. I explore how we might do so, especially while allowing for incommensurability, and contrast my approach to the monist approach of climate economics, and to the very different approaches to value that are common in environmental ethics.

Chapter 1

Preserving value in the face of climate change

I - Introduction

As I write this, Europe is again in the midst of a heatwave. With climate change, these are expected to continue to worsen and to become more frequent (Perkins-Kirkpatrick & Lewis, 2020). Globally, extreme heat was associated with half a million deaths a year between 2010 and 2019 (Zhao et al., 2021). Climate change and its associated extreme heat events are also worsening the intensity of wildfires (Barnes et al., 2025) and with the localised collapse of agriculture, leading to migration (Barnett & Webber, 2011). In addition to increased heat, climate change is already causing, and will continue to cause, other severe impacts including extreme weather events, sea level rise, and ocean acidification (IPCC, 2023a).

All these impacts cause losses of value. Human lives shortened by climate change are clearly valuable, both in themselves and because of all the good they would have contained and caused. When wildfires rip through larger areas than before we lose large tracts of beautiful nature, and the stability of ecosystems is also threatened. We rightly value the nature that we see burn, and all value in nature depends on stable ecosystems. When people are forced to move and to abandon settled patterns of life based on place and sustained by agriculture we lose many things of value: ways of life, and the cultural meaning of places and practices. Rising seas will drown natural and human monuments and settlements, and lead to much suffering.

This thesis starts from the idea that these things are valuable in very different ways. It is not clear how much a life is worth compared to a house washed away in a flood, or to a way of life that a community has participated in for centuries. More importantly, it does not seem like these are valuable, or appropriately valued, in the same way. Yet, when we try to prevent losses to climate change we must prioritise - we must in some way determine which losses are important and must

be stopped with the limited time and resource available to us. This is difficult to do because it is so difficult to compare these different forms of value.

In this thesis, I concern myself with the preservation of value and valuable things in the face of increasing temperatures, rising sea levels and other effects of global warming that will affect human communities, ecosystems, and ways of life. I seek to contribute some suggestions for how policymakers ought to account for what people value and think about value as they decide how to mitigate, adapt to, and compensate for the effects of global warming. In particular, I want to investigate how climate policy should change if it is to account for the pluralist way in which people tend to value that which is lost to climate change. My approach is opposed to the welfarism that informs much climate policy today, while also seeking to be more applicable and relevant to policy than most work in "traditional" environmental ethics.

When policymakers make decisions on how to combat climate change they make, by necessity, a range of normative judgements. They must decide how bad, overall, different possible outcomes are, and what measures are justified in order to avoid them. I begin my argument from the fact that valuable things will, unavoidably, be lost to climate change. Indeed, many valuable things, including human lives and settlements, have already been lost or damaged (IPCC, 2023a). The purpose of climate policy is to minimise the value lost, and to ensure the costs caused by climate change are distributed across people, countries and generations in a way that is as fair as possible. In political philosophy, much has been said about what such a fair distribution would look like across nations and across generations (for prominent contributions, see e.g. Broome, 2012; Caney, 2012; Gardiner, 2011; Shue, 2022). These questions of global and intergenerational distributive justice are not among my chief concerns in this project. Instead, I focus on what I see as a question of efficiency about value: how should policymakers maximise the value that is saved from the ravages of climate change, and which of the many things that are carriers of different kinds of value should they prioritise? This does not mean that distributive questions, or questions of justice,

are unimportant. For one thing, justice and fairness are things that many people value in themselves – this fact, in my framework, gives policymakers a strong reason to further them as part of climate policy. They are not, however, the only values that matter.

I do not seek to apply any general moral or political theory to the issue of climate change. In that sense, my project is not one of standard applied political philosophy. Instead, I seek to do what Ronald Dworkin (1994, pp. 28–29) has described as "philosophy from the inside out." I will pursue an argument that engages with moral theories, but begins from a moral subject of practical political importance – in my case, dangerous climate change. I hope, with Dworkin, that projects of this kind may have a better chance of informing policy debates. I intend to begin from some of the questions and problems climate change poses to us as humans and societies, and what the values we hold can tell us about how to address them.

In this chapter, I lay out the broad approach of this thesis to questions of value. I first explain the relevant sense in which climate change is a non-ideal situation. Because of how urgent action against it is, we are faced with both a time constraint and a motivational constraint that limit what we can do. These constraints partially motivate my value pluralist approach, which I lay out in section III. I also discuss my approach to incommensurability. In sections IV and V, I clarify my pluralist approach by contrasting it with the monist approach of mainstream climate economics and with the approach to value common in environmental ethics. I argue that my approach better captures common beliefs about value, while also being relevant to policymaking. Section VI concludes this chapter.

II - Climate change as a non-ideal situation

My starting point is the fact that we must urgently address the problems posed by climate change. In a crisis, policymakers must account for what people in fact think, so that the policies they pursue enjoy support. This is also a moral imperative – the risks and sacrifices that climate policy (or its absence) will impose on people must be justifiable to those who are expected to bear them. Political

philosophers who want to inform urgent policy cannot hope to radically change the attitudes and priorities of people in the time available. Climate change is undoubtedly an example of this – action is required now, and choices made in this decade will be critical (Stern, 2022, p. 5). This means two things. First, we need to consider why people care about climate change – this is not mainly because of reasons of justice, but because they are worried that valuable things may be lost. The philosophical underpinnings of climate policy should reflect this – it should be aimed at saving what is valuable and be informed by the nature of those valuable things. This is what my project aims to do. Second, political thinking in a crisis is constrained by both a time constraint and a motivational constraint. The actions we take must be effective quickly, and principles that are unlikely to ever be accepted by existing people cannot inform policymaking in these highly non-ideal circumstances. As such, I will focus on beliefs about value that I take to be very widely held in the world as it is.

The time constraint means that some approaches to addressing climate change and to preserving value are unhelpful. There is a common argument, for example, that to adequately address climate change we must first overcome capitalism or neoliberalism (see for example Klein, 2014; Malm, 2016). I will make no argument as to whether these accounts are correct. If they are, however, then I assume that this is extremely bad news for us all. We need action now, and there are no signs that an anti-capitalist revolution is imminent. Given this, we ought to at least try to act within the economic systems available to us.

One similar argument is especially relevant for a thesis about the preservation of value. This is the idea, articulated by Richard Sylvan (1993), that we need to replace our way of thinking about ethics and value with a new, environmental ethic, in which non-human parts of the environment have intrinsic value. I discuss this idea, and anthropocentrism more broadly, in chapter 5. There I provide some reasons to think Sylvan is wrong. If he is right, however, then this is again very bad news. We do not have time to replace our entire way of thinking about ethics. My argument in

chapter 5 centres on the idea that this is not such a bad thing, and that our existing anthropocentric commitments can be effective in combatting climate change and environmental destruction.

So, I largely take current systems, both value systems and societal systems, as given, and assume that we must operate within a world that not only continues to experience widespread losses, but that also must address them within the framework of our societies as they exist now. This does not mean that new tools cannot be introduced, but it does mean that, for example, we may need to accept and focus on incremental changes and improvements rather than systemic overhaul.

In addition to this time constraint there is also a related motivational constraint. Given that we do not have time to overhaul our ways of thinking about value, we must pursue ways of acting that broadly cohere with existing, widespread ways of thinking about value, loss, and replaceability. Without accounting for these bedrock beliefs about how value works climate policy cannot achieve the public support it should. I focus only on a few such beliefs, but I also make some broader assumptions about value that follow from this motivational constraint.

First, I assume that all value is dependent on the existence of a valuer. Moreover, this must be a human valuer. I follow Robert E. Goodin (1992, p. 44) in assuming, broadly speaking, that things can only have value "*in relation to"* valuers, and humans are, at least, the only relevant valuers for my purposes. The first of these views, the idea that value needs a valuer, is widespread in philosophy. To Henry Sidgwick, nothing can be good "out of relation to human existence, or at least to some consciousness or feeling" (Sidgwick, 1962, p. 113). Christine M. Korsgaard accepts both this claim and the view that only humans are valuers when she argues that "[t]he value of values comes from valuers, and not the reverse, and that fact – that we are the source of value – is also what makes us worthy of moral consideration. Humanity […] is the ultimate source of value." (Korsgaard, 2003, p. 83) In chapter 5 I present some reasons to think that all value is dependent on humans.

I find the arguments for the idea that all value must depend on human valuers persuasive, but my main reason for adopting the valuer-centred view is more prosaic. As we act to preserve things from climate change we need reliable indicators of value. Humans are much more likely to be such reliable indicators than other things, because humans can reason about value, and express their conclusions in an intelligible manner. We can then act quickly based on human beliefs about value, and human beliefs about what is valuable.[1]

What is the alternative to this? It is not impossible that there could be value that is independent of a valuer. G. E. Moore (1903, Section 50), for example, insisted against Sidgwick that it could surely not be irrational to hold that it would be better that a beautiful world exist rather than an ugly one, even if no one could ever observe it. I will not show that there is no value like this. The non-ideal character of climate change, and the short timeframe in which we must act, however, means that there is a high threshold of public justifiability for action, especially when it comes to what we preserve. Say that we, through philosophical reflection, come to the conclusion that something is of great value, independently of what any valuer thinks. This is unlikely to be accepted by many people in the short time we have available. It is then difficult to justifiably implement a policy that seeks to preserve this thing, at the cost of other things that people in fact value.

This does not mean that, say, a government implementing mitigation measures in a situation when the electorate is opposed to mitigating is illegitimate. I do not seek to find the appropriate level of mitigation, or the right way to get there, in this thesis. I am assuming that, regardless of how much we mitigate, many things of value will be lost. What people in fact value should be taken into account when we make decisions about what to preserve. In a crisis, we might think that eco-authoritarian measures are justified in order to limit the damage caused by climate change. This is more difficult to justify, however, when it comes to decisions about which losses to allow and

[1] This is very different from taking people's preferences as given and basing policy on them. I argue against basing policy on raw preferences later in this chapter, and in chapter 4.

which not to allow in a situation where some losses are unavoidable. In such situations, there is no clear goal to aim for (such as minimising global warming). Instead, there are a variety of possible end states we could aim for, each involving the preservation of different valuable things. Returning to the way the world was before the crisis is not possible, because irreversible losses are already occurring. In selecting an end state to aim for we must consider what people in fact value.[2]

This is fundamentally because policymakers ought to combat climate change on behalf of, and in the name of, the public. Now, we might at least hope that they do so on behalf of a well-informed people, whose views on value are not completely misinformed. If the people were systematically wrong about how value works (and we know this, or at least have reasons to think so), then policy should not reflect those views on value. The views on value I discuss, however, are not obviously wrong. Of course, many philosophers, especially value monists, are likely to think they are mistaken, but all of the views I focus on are also widely defended. Throughout this thesis I will also provide arguments that I hope will show that these views are at least plausible.

The assumptions that all value depends on a valuer, and that we should account for widespread beliefs about value, has further consequences for the arguments and conclusions of this project, and for how climate policy ought to be formulated. It restricts and determines the kinds of value, and the accounts of the structure of value, that we can and should account for. I will now discuss in more detail what this means, and what I take value to be.

III - Plural values

My argument is value pluralist, but this is not mainly because I am committed to any particular theory of value. Instead, I adopt a pluralist approach because any approach that takes seriously

[2] Similarly, Austrup (2024, p. 10) argues that even a justified eco-authoritarian acting in a crisis can only permissibly use authoritarian power to restore or preserve some kind of normal or baseline conditions that are widely accepted as desirable. In a situation where irreversible losses are unavoidable there is no obvious baseline of this kind available, because we cannot return to the world as it was before the crisis began. In the context of climate change we must instead look to what the public values in order the determine what the right post-crisis baseline to aim for is.

what people in fact value cannot be monist, and we must take such facts seriously when theorising in non-ideal circumstances.[3] At the same time, however, I will also seek to independently show that policymaking that assumes that all losses to climate change can be measured in the same currency and easily traded off against each other is impoverished.

Value pluralism is the broad idea that goods differ not only in how much we have reason to value them, but also in how we should value them (Anderson, 1993, p. xiii). It is based on the intuition that we experience things not just as good or bad, but good or bad in specific ways that elicit (or ought to elicit) different responses from us. As T. M. Scanlon puts it, "[u]nderstanding the value of something is not just a matter of knowing *how valuable* it is, but rather a matter of knowing how to value it – knowing what kinds of attitudes and actions are called for." (Scanlon, 2000, p. 99) This means there are different kinds of value, and these cannot be reduced to one master value that we then need to maximise. This has the consequence that we cannot easily compare the value of things with different kinds of value, or that are valued in different ways.

There are many different things that are valuable, and they are often valuable in different ways. This means they are, and should be, objects of different evaluative attitudes. We often value humans by respecting their autonomy. This is unlikely to be an appropriate way of valuing a plant, but we can still value the plant by, for instance, showing it concern or even wonder. This, I believe, is a fairly common way of valuing things and of conceiving of value. Plants and animals do not just matter more or less than humans, they matter in a different way and warrant a different response. This can and should influence climate policy too, or so I will argue.

Value pluralism is often taken to imply incommensurability: that two things with different kinds of value cannot be ordered through a common measure of value. Incommensurability is not in fact a necessary consequence of value pluralism: for example, a pluralist could hold that there are

[3] A monist might disagree with me on the truth of pluralism, but still accept that in some non-ideal circumstances some pluralist commitments should be taken as true for the purposes of policymaking, say because too many people are committed to untrue pluralist beliefs.

a range of ultimate values, but that we can construct a trade-off schedule that tells us how much of one value we should give up for a gain in another (O'Neill, 2017, p. 230).

Still, some values intuitively do not allow even for this kind of trade-off. To provide one example that I return to later in the thesis, incommensurability may be a constitutive feature of some forms of value. This means that something is valuable in part because we refuse to exchange it for something else. Joseph Raz (2009, pp. 345–353), for example, suggests that the value of friendship depends, in part, on a refusal to put a price on it. To Raz, only those who think friendship is incommensurable with money are capable of having friends. The value of friendship partially arises from the recognition that it cannot be exchanged for money.

Similarly, as I argue in chapter 2, there may be some losses of value that cannot be fully compensated for by gains in other forms of value, no matter how great. Because of this, I assume that some values and valuable things really are incommensurable. I provide several examples of this phenomenon throughout the thesis.

Incommensurability, however, does not preclude rational choice. It makes calculations such as those used in cost benefit analysis (which I discuss below) impossible. As such, it precludes a particular, formal kind of rational choice. However, not all rational decision-making, nor all policymaking, needs to involve such calculations (O'Neill, 2017, p. 234). This means that we can still make rational choices, if we adopt a more minimal and less formal conception of rationality. For example, we can stipulate that there are thresholds below which we must not fall on any dimension of value. We can also simply stipulate epistemic requirements, such as the idea that we must at least look for certain kinds of value before making decisions, or involve those for whom a particular kind or instantiation of value is of particular importance in decision-making processes. In the climate context, there is also no reason why we could not take into account both the value of human lives on one hand, and the value of marketable goods on the other, without collapsing these into one quantitative measure (Broome, 2012, p. 166). If we are comparing two policy

options it can also be the case that there are facts other than their relative value that provide reasons for choosing one over the other (Anderson, 1993, p. 57). Perhaps one better matches an ideal we are committed to as a society, or better allows us to discharge an antecedent duty that we have. There are then many reasons why we should develop multicriteria procedures and institutions (O'Neill, 2017). I will not go into a great deal of detail in terms of how these pluralist considerations should be incorporated into policy evaluation mechanisms. Instead, my approach is to explore more broadly how pluralist views on value, if taken seriously, ought to shape climate policy.

The key point is that two incommensurable options can still be compared, and one can be rationally chosen over the other. Even if we cannot compare two options on the same scale of value, we can say that one is better, and more worthy of our choice, than the other. Importantly, this distinction means that we can make this kind of argument:

> A and B are incommensurably valuable. We cannot compare them in terms of a common unit of value. Policy option p contains more of A and less of B, while policy option q contains more of B and less of A. Incommensurability means we can never say that p is better than q in terms of a common unit of value, no matter how much A we add to p. We will always have reason to regret the B we forgo. Still, q and p are not incomparable. We can weigh the reasons to adopt p against the reasons to adopt q, and find the reasons to adopt p stronger. Nevertheless, as we adopt p, we should regret the loss of B this involves.[4]

I will make use of this kind of argument at several points in the thesis. As can be seen here, value pluralism does mean that genuine value conflicts are possible (Williams, 1981). Even when we make the all-things-considered right choice, like in the argument above, we may be left with

[4] At this point it may be objected that I am using reasons, or the balance of reasons, as a kind of master value to resolve value conflicts. I do not find this objection convincing. Reasons are far too diverse, and the ways we respond to them so complex, that they cannot function like a value or a currency. I follow Scanlon (2000) in taking a reason to be a primitive idea that grounds all rational decision-making. We can rank the options in terms of betterness, without resolving the value conflict and without claiming that we have maximised overall value.

residual reasons for regret. This is because we have failed to choose something that was overall less choiceworthy, but good in a different way to the option we did choose. This is a key underlying line of thought in much of this thesis, and motivates the discussion in chapter 2 (value can be irreplaceably lost even when we make the best possible choice) and chapter 4 (we have reasons to preserve things that are valuable in diverse ways, so as to minimise future regret).

In this thesis, I will discuss several things commonly thought to have incommensurable, or non-substitutable, value. One such thing is autonomy, or autonomous lives. As I argue in chapter 3, valuing people, and respecting their autonomy, involves not just the provision of goods they may value, but also treating them in specific ways. This makes autonomy a multidimensional concept, that requires a range of incommensurable goods.

Non-substitutable or incommensurable kinds of value are also often thought to be found in nature. There is a common thought that at least some things in nature should not be treated as if they were commodities, or as if they could be substituted for some other, non-natural valuable thing. Many of these claims are intuitively plausible, but it is unclear how, if at all, they should affect our response to climate change. At various points in the thesis, but especially in chapters 2 and 5, I will seek to clarify and evaluate these claims, and to make them relevant to climate policy.

Many of these debates revolve around the question of what, if anything, in nature has intrinsic value. I will not, however, be making many claims about intrinsic value. Many debates across environmental ethics and value theory concern what things have intrinsic value, understood as value in themselves or value that is independent of anything else. Unfortunately, discussions of intrinsic value are often imprecise or unhelpful, and there is a great deal of disagreement about what it is. Something could be intrinsically valuable when it is valuable in isolation from everything else (Moore, 1903), when it is valuable independently of its consequences and circumstances (Zimmerman, 2001), when its source of goodness is the object itself (Korsgaard, 1983), or when it is valuable for the properties it has in itself (Rønnow-Rasmussen, 2011). Instead of getting into

these debates I will avoid talk of intrinsic value altogether and instead describe directly some relevant ways in which I think things can be valuable. For example, I focus on things that have irreplaceable value (chapter 2), and things that are valuable independently of human valuation (chapter 5). Whether these things also have intrinsic value is, for my purposes, neither here nor there.

Partly because of this trouble with intrinsic value, my focus in this thesis is often on things that are valuable at least in part because people value them. If something really is valuable (so we are not simply mistaken in thinking it is), then, as Scheffler (2020, p. 90) argues, the fact of us valuing it gives us distinctive reasons for action with regard to that thing, over and above any reasons that arise from any intrinsic value the thing might have. Similarly, if someone else values a thing, then others have reasons for action if they have reasons to care about the good of that person. These reasons alone are of a sufficient weight, and are sufficiently widespread, to strongly indicate the correct course of action in many situations related to climate change and loss.

Having laid out the broad approach to value I will take in this thesis, I will now briefly discuss how it relates to two contrasting approaches that are widespread in climate economics and environmental ethics respectively. I think these approaches have important shortcomings that the pluralist approach I adopt can help alleviate.

IV - The approach of climate economics

Economists already have answers to the questions I seek to address. They tend to operate with monistic conceptions of value, according to which there is only one kind of value. The Integrated Assessment Models used to inform climate policy, for instance, tend to assume utilitarianism in their social welfare functions (Kolstad et al., 2014, p. 223). This approach makes cost-benefit analyses and policy advice relatively easy, but it has been criticised by philosophers. It has three main problems that I focus on. First, it does not seem like all that is lost to climate change can be convincingly described in terms of one valuable property. As Elizabeth Anderson (1993, p. 118)

and other pluralists have argued, monism provides an impoverished view of what is worthwhile in life. Second, people almost never act as though there is only one kind of value, and this must be taken into account when producing applicable conclusions in a non-ideal setting. Third, the welfarist approach of mainstream economics tends to ignore non-use value found in non-human environments, such as any independent value that could be found in animals, in ecosystems and in plants (see Tol, 2009).

In climate economics, the value that tends to matter is some notion of welfare. The welfarist view that is dominant in climate economics has its roots in utilitarianism. Broadly speaking, welfarists hold that it is states of affairs that are more or less good, and that their goodness can be known with reference solely to the personal utilities of humans who exist in those states of affairs (Sen, 1979, p. 471). This view most usually treats welfare as a matter of the satisfaction of human preferences, which are often assumed to be observable in the choices people make (Anderson, 1993, p. 166). When evaluating losses to climate change, climate economists generally employ a version of cost-benefit analysis based on this kind of welfare. John Broome (2019, p. 98) describes the process used by economists advising the Intergovernmental Panel on Climate Change like this: all values are divided into human and non-human values, and then non-human values are set aside. After this, communal values are set aside so that only individual wellbeing remains. Individual wellbeings are then combined (relying on philosophically questionable assumptions) so they become aggregate wellbeing measured in terms of money. Money is assumed to have the same value to all people. The value of what is lost to climate change is usually assumed to be captured by the amount people would be willing to pay to avoid these losses (Kolstad et al., 2014, p. 212).

This approach assumes that consumers seek to advance their own welfare by purchasing commodities, and that commodities, including environmental goods, are substitutable for other bundles of goods with the same market value. This approach, unlike a pluralist one, only allows for one way of valuing goods, one that applies to environmental goods just as any other. In reality,

people value environmental goods in many ways other than their use value, and from points of view other than that of a consumer. We can value their mere existence, or their part in making our lives make sense, for example. This value, however, is not easily captured in the market, or in a cost-benefit analysis.

For monists, what we value, and what our wellbeing consists of, is supposed to be revealed by our behaviour, and particularly the way we spend and invest money. Darrel Moellendorf (2014, p. 95) summarises another key problem of this approach in the context of intergenerational savings rates like this: "What we prefer for ourselves, as expressed in our investment decisions, tells us nothing about what our moral duties are to persons who will follow us." Even if our moral duties were to reflect our values, our behaviour often does not. Humans are frequently selfish, hypocritical, and irrational. We fail to live up to the values we hold, but there is no reason why public policy should do the same. Beliefs about value cannot be straightforwardly inferred from behaviour – the fact that we choose to invest a certain amount of effort and capital in the fight against climate change does not mean that that amount is what we, by our own moral lights, should invest.

The mistake here is not just in the monist idea that value is found only in the satisfaction of human preferences, but also in the idea that we even ought to try to fulfil all preferences today and in the future, and treat all preferences as if they were on a par (Stanczyk, 2021, p. 306). We have far stronger reasons to meet basic needs today and in the future than to help people get more of whatever they want. Wellbeing or welfare, as I will argue in more detail in chapters 3 and 4, is not an idea that is coherent or comprehensive enough to capture all that is valuable about the human experiences and societies that are likely to be damaged by and lost to climate change. The dominant approach does also not allow for the extensive intra- and inter-cultural disagreement that exists about questions such as which preferences should count, and how individual wellbeings should be aggregated (Thoma, 2021). It is preferable, I will argue, to adopt a less comprehensive account,

one with a focus on a few important things that are widely valued across cultures, and on the structure of value.

V - The approach of environmental ethics

At the other extreme, some environmental ethicists are very sceptical towards any comparing, aggregating, or substituting of values and value bearers. In addition, environmental ethicists and activists often believe that there is some distinctive kind of value to be found in nature that can never fully be replaced by something manmade. Often, the idea of an earth untouched or at least unharmed by humans is seen as highly valuable. These views can have strange implications for climate policy and are not always justified by a strong philosophical argument. As a prominent example of this tendency, consider Aldo Leopold's (1949) land ethic. To Leopold, something is right when it tends to the preservation of the integrity, stability, and beauty of the ecosystem. On this view, the value of an organism ultimately depends on the value of the ecosystem as a whole. One problem for Leopold and those who follow a similar path is that it is today very difficult to protect the integrity of ecosystems, and it is not always clear that this is desirable. Because of pervasive human influence, especially through the mechanism of climate change, ecosystems no longer retain any human-independent kind of integrity, regardless of what we do about climate change. An imperative to preserve the stability of ecosystems does not tell us much about how to combat climate change, other than that anthropogenic climate change is bad and that we ought to do something. Keeping everything as it is, even if it were desirable, is not an option in climate policy.

There is a family of views, including Leopold's, that is influential in green politics and environmental movements. These views, in one way or another, hold that nature, or some conception of the natural, has an independent and irreplaceable role in the creation of value. This

view explains why many are hostile to interfering with natural processes (as Leopold is) and, more generally, hostile to the substitution of what they consider natural value with other kinds of value.[5]

Another common thought in environmental ethics is that, if something in nature has intrinsic value, then we all at least have a duty not to destroy or damage it. This idea motivates much of the debate around value in environmental ethics, in which numerous attempts have been made to show that there is such value in nature (beyond sentient organisms), and that various policies we might pursue towards nature are wrong for this reason. In one prominent example that I will return to, Holmes Rolston III (1999) argues that species are intrinsically valuable, over and beyond the value of the individual members of that species. To allow the destruction of a species is to show disrespect for the natural processes that brought it about. As I will argue, it is difficult to convincingly defend claims of this kind. We might ask why natural processes are worthy of respect in this way, and whether this respect ought to extend to all species, regardless of whether they are disrupting ecosystems, or are harmful to humans.

As mentioned above, I will not be using the terminology of intrinsic value. Instead, in chapter 5, I discuss attempts to show that there is value that is independent of humans, and I argue that it is difficult to show there is such value. Meanwhile, if such value were to be found in nature, and we always have reasons to preserve it, then this might constrain policy options to an implausible degree, leaving us unable to effectively combat climate change. Fortunately, as I will argue in chapter 5 in particular, even if there were no intrinsic or independent value in nature, we would still have plenty of reasons to protect that nature, and to pursue policies that preserve the distinct kinds of value found there. Some of these reasons arise from instrumental value. I will also argue, in chapter 2, that irreplaceability does, in fact, give us far better tools to understand what is valuable in nature than appeals to "naturalness" or to intrinsic value. For practical purposes, as I will argue

[5] Perceived problems in value substitution will be a running theme throughout my thesis, as I believe they explain many disagreements about value in the context of climate policy.

throughout the thesis, it is far more useful to focus on more easily understood and detected forms of value, and not on the search for intrinsic value, or for value that attaches to some conception of the natural. We also do not need to find intrinsic value in order to object to environmentally harmful policies, as I argue in chapter 5.

My approach recognises that to make policy decisions we must make choices involving trade-offs between disparate values, including trade-offs involving things of both seemingly natural and obviously anthropogenic value. Environmentalists see why this is sometimes intuitively wrong – some things really do have value that cannot be preserved through a manmade substitute. I seek to find a way beyond this tension. We must make choices involving distinct and often incommensurable values, but we can do so without reductionist aggregation and while recognising that some substitutions lead to genuine value loss.

VI - Conclusion

In this thesis, I seek to show how political philosophy can inform policymaking on climate change without resorting to value monism. My approach takes seriously the non-ideal nature of climate change, and posits a motivational constraint that means theorising must take account of what people value and want to preserve. I hope to show how a focus on pluralist and widely held beliefs about value can help philosophy inform climate policy, steering a course between easily applicable but mistaken monism and the intractable problems and the difficult search for intrinsic value present in much of the literature on environmental ethics. Humans have an immensely important role to play in shaping the future of the earth and in combatting the effects of climate change. We must, I argue, assume that responsibility, and to do this policymakers must account for the plural values we recognise in our societies and in the natural world around us.

The policies pursued to counter climate change must be justifiable to those expected to suffer or enjoy the consequences. This can be done most straightforwardly and most urgently by taking what they value into account. I do not propose to construct a taxonomy of what beliefs about

value are commonly held, either across the world or some part of it. Instead, I will proceed in the spirit of philosophy from the inside out by highlighting a small selection of minimal beliefs about value that are very widely if not universally held. I will then seek to highlight some of the consequences for climate policy of taking even these minimal beliefs seriously.

The first belief that I discuss is the idea that some things have irreplaceable value. This means that their loss cannot be fully compensated for, and that we will always be left with reasons for regret. Climate change will lead to many losses of this kind. We will lose unique landscapes, species with functions and features that cannot be replaced, and ways of life that have existed for generations, creating the context in which people make sense of the world and of what is valuable. I argue that adaptation policy should prioritise the prevention of these losses of irreplaceable value. I also defend an account of relational value, a widespread and important kind of irreplaceable value that is often at stake in contexts of loss to climate change. This is also a kind of value that is dependent on communities of valuers.

Later in the thesis I discuss other beliefs about value, and how they should be accounted for in climate policy. I consider the idea that the autonomy of future people matters and ought to be protected, and the idea that this requires the preservation of a diverse range of valuable things. I end the thesis by considering the consequences of anthropocentric beliefs about value. None of these beliefs are easy to plug into any policy evaluation mechanism. We can, however, make progress in understanding how they impact, or ought to impact, decisions about what to save from the ravages of climate change. First, I defend the view that we both ought and can preserve irreplaceable value.

Chapter 2

Irreplaceable value and climate change adaptation

I – Introduction

In this chapter I analyse, clarify and vindicate the first common pluralist belief about value. This is the intuition that some things have irreplaceable value, and that we have especially strong reasons to preserve this kind of value. After all, we have no prospect of later replacing any lost irreplaceable value. Dominant approaches to policymaking, however, do not tend to allow for any such value. The value monist approach of climate economics, as we saw in the previous chapter, assumes that all value is fungible and in principle substitutable. This means that it does not tend to recognise irreplaceable value – if there is only one kind of value, then the loss of any valuable thing can be fully compensated for. At the same time, the conclusion that no value is irreplaceable can seem attractive because the implications of the intuition seem impractical. An expansive notion of irreplaceable value, according to which such value is very widespread, could lead to implausibly strong constraints on policymaking if we have strong reasons to preserve that value.[6] Environmental ethicists, in particular, sometimes operate with such a conception of irreplaceable value. As we saw in the previous chapter, they often think that value like this is widespread in nature in particular.

In this chapter I defend a conception of irreplaceable value from these challenges. I also defend the view that irreplaceable value can and should be preserved in the context of climate adaptation policy. In this policy context we often have reasons to replace valuable things with other things replicating their function or valuable properties. Consider, for example, replacing the crops farmed in a drying region, or the replacement of eroding natural flood defences with artificial ones. There seems to be a tension here between the preservation of existing, valued things and the aims served

[6] This is what Matthes (2013, p. 39) describes as the "proliferation problem".

by their replacements. Plausibly, this tension follows from the fact that we take some existing value to be irreplaceable, and from the intuitive idea that we should prioritise the preservation of things that have such irreplaceable value. I propose that the intuition that irreplaceable value should be preserved as a priority tracks a genuine moral consideration, and that it should be accounted for in climate policymaking, particularly in the context of adaptation policy. I develop and defend an account of a relational kind of irreplaceable value, which I argue is particularly widespread and relevant in the climate policy context.

I will begin this chapter by exploring and defending the importance of the intuition that we should prioritise the preservation of irreplaceable value. I then discuss and clarify what it means for something to have irreplaceable value. In section III I argue that most relevant instantiations of irreplaceable value are cases of relational value, where communities have built value-conferring relationships with objects or practices. These objects and practices have gained irreplaceable value as a result of these relationships. Sections IV and V are dedicated to explicating this account of irreplaceable value by applying it to adaptation policy. Section IV considers things such as animal and plant species and parts of the landscape, which are commonly thought to have irreplaceable value. I argue that they often do not in fact have such value, and that they therefore ought not to hinder effective adaptation policy. Section V focuses on distinct ways of life as important instantiations of irreplaceable value. I argue that the need to protect ways of life and valuable places must constrain adaptation policy. Section VI concludes the argument.

II – The intuitive priority of irreplaceable value

This chapter is motivated by the intuition that losses of irreplaceable value are particularly bad, and that they should be avoided as a priority. In this section, I introduce and clarify this intuition. I then raise an objection to the existence of any truly irreplaceable value: the idea that if something is valuable because of its properties, then it can always be substituted for something with the same valuable properties without value loss. I will later provide an account of how the force of the

intuition can survive this substitution problem. First, however, I will explain the intuition. Consider this scenario:

You are woken in the middle of the night by your fire alarm. You can smell smoke; you know you need to get out of the house. A fire is spreading from your kitchen, but you have a few minutes before you need to leave, so you have time to save some of your most valued possessions. What do you save? Intuitively, I would suggest, you might start by saving that which has value that cannot easily be replaced. Maybe some things in the house have value that could never be replaced at all – the family cat, Nibbles, or that necklace that has been in the family for generations, given to you by your late grandmother on your 15th birthday. You could always get a new cat, but this cat would not be Nibbles; part of Nibbles' value to you stems from the relationship you have built up with her and from her identity as your cat, which you think you have played a role in constructing. There are also plenty of other necklaces, but only this one was worn by your favourite great-aunt the last time you saw her, and it is only this one you want to give to your daughter or son, should you ever have one. Part of its value to you stems from its history, from where it has been and from where you hope it might go. This is why you save Nibbles and the necklace, and see your television and your overpriced rug go up in flames, despite their far greater monetary value.

This intuition supports the idea that items with irreplaceable value should be given priority in preservation. Climate change is, in some relevant ways, a similar crisis to this house fire. Unlike in the case of the house fire, we can still hope to limit the extent of our losses to climate change through mitigation and through adapting our systems to a warmer world. Some losses, however, are already occurring or are now unavoidable. According to the Intergovernmental Panel on Climate Change (IPCC), some losses are already irreversible, such as the first species extinctions driven by climate change. Others are nearing this point, including impacts resulting from the retreat of glaciers and from permafrost thaw (IPCC, 2023a). These irreversible losses could be very bad, especially if the lost species and ecosystems carry value that cannot be replaced, or if there are

valuable human practices that depend on them. Through our policy choices, however, we can still have some influence over what is lost. We are faced with what is essentially a question of value prioritisation: how do we choose climate policy so that we preserve the most value, and do we have stronger reasons to preserve some kinds or instantiations of value than others? This is the question that motivates this thesis. Prioritising irreplaceable value is a good place to start as we answer it, because replaceable value can be replaced once it is lost, at least in theory.

There are a few things worth noting in order to gain a clearer picture of this intuition and its implications. First, this priority cannot plausibly be lexical. Some things are of immense (but eminently replaceable) value. Others are of relatively insignificant, but irreplaceable value. Particularly in cases where it may be difficult to replace the replaceable value, or where its replacement in practice is uncertain, it may be preferable to preserve replaceable value instead. We do, however, have a strong pro tanto reason to prioritise irreplaceable value, a reason that arises from the fact that it cannot be replaced.[7]

Second, giving priority to the preservation of irreplaceable value does not imply that things with irreplaceable value have *more* value than other valuable things. For example, Shelly Kagan (1998, p. 283) suggests that uniqueness (and by extension irreplaceability) might enhance the value an object has anyway. My argument does not depend on such a view, though it is compatible with it. Instead, I am suggesting that irreplaceable value can be jeopardised in a way that replaceable value cannot be. Whether or not uniqueness or irreplaceability enhances the value of an object, the fact that it has value that is irreplaceable means we have an additional reason to preserve it – if it is lost, then value is unavoidably and irreversibly lost too. Other losses do not lead to this unavoidable value loss.

[7] This is a subset of a broader phenomenon discussed by Bradford (2023) and Kubala et al. (forthcoming): that the weight of our reason to preserve distinctly valuable objects increases as the number of objects decreases. I only discuss cases in which the number of objects is one, making the value it contains irreplaceable. This means that I appeal to the fact that this distinct value is entirely lost if the object is lost, and not to the value of diversity (like Kubala et al. do).

Third, not all irreplaceable or unique things have irreplaceable value, and only those that are valuable are worth preserving because of their irreplaceability. In a trivial sense, every single thing in the world is unique and irreplaceable – no other thing can replace it in the position of having all the same properties. Losing irreplaceable things with trivial or no value – individual snowflakes, for example – is clearly not a bad thing. A plausible account of irreplaceable value cannot be constructed with reference to all the properties of an object or process. Instead, we should focus on the relevant properties that make a thing irreplaceable, particularly the ones we attach value to (Matthes, 2013, p. 50; Spiekermann, 2022). Some things have valuable properties that also make them irreplaceable, and these we have reason to preserve. Others may be worth preserving because they could become valuable in the future. This future value, however, is difficult to predict, and should therefore be given less weight than things that we know to be valuable now. As such I will focus on things that have irreplaceable value in the present.

Fourth, we should not preserve things with irreplaceable value only because we ourselves value them. We also have good reasons of intergenerational justice to preserve many valuable things for future generations. This includes things with irreplaceable value. Even if future generations will be overall better off than we are they will not be able to convert their resources into lost things of irreplaceable value. If we have reasons to believe that many future generations would value particular irreplaceable things, then we are likely to have strong reasons to preserve those things.

It is not always easy to tell what things have irreplaceable value, and people disagree about how widespread such value is. As discussed above, in the sphere of climate policy (and other policymaking and advice) economists tend to operate with monistic conceptions of value, according to which there is only one kind of value, or one kind of thing that makes the world better.[8] In the environmental arena in particular, economists subscribe to a weak notion of

[8] In one sense, economists do often recognise and work with different kinds of value, such as existence value and use value. These, however, are fungible, and in this sense both are examples of the same kind of value. On a preferentialist view, for instance, both use value and existence value ultimately stem from

sustainability that means investment goods and environmental goods can be traded off against each other (Heath, 2013, p. 34). This view implies that there is no such thing as irreplaceable value. If all valuable things have the same kind of value, then any loss can be fully compensated for with a sufficient amount of money, without the loss leaving any residual reasons for regret. The fact that a loss can be fully compensated for does of course not mean that a loss has not occurred. Indeed, Adam Slavny (2014) identifies two ways of compensating a loss: negating and counterbalancing. The former leaves the victim identically off to their situation in the counterfactual scenario in which no loss occurred, while the latter leaves them as well off in terms of welfare or some other currency of value. Irreplaceable losses cannot be negated; once Nibbles is gone I can no longer be identically off. In this chapter, however, I am interested in losses of value that are irreplaceable in the stronger sense of not being counterbalanceable either.[9] A value monist may doubt that such losses exist at all, at least in theory. Nibbles may have *more* value to the value monist cat owner than any replacement cat, but her loss could be fully compensated for with another cat plus some finite amount of money or some other valuable thing, and the monist would be left with no reasons for regret.

This monist view is intuitively implausible. Intuitively, there are things that have irreplaceable value and that we therefore have strong reasons to preserve. Even if I receive enough money to fully compensate for the loss in *welfare* that I suffer as a result of the loss of Nibbles, there could be something else of value that remains lost and uncompensated. These may be things, including perhaps some aspect of Nibbles, that are incommensurate with monetary value. This may be the case for at least two reasons: it may be that the thing cannot be given a price, or that it should not be given a price (O'Neill, 2020, p. 390). For instance, perhaps the value of your relationship with

different kinds of preferences and they are entirely commensurable and substitutable. I return to these forms of value in chapter 4.

[9] The fact that a loss is not counterbalanceable does not mean that it must never be allowed – the prevention of irreplaceable losses does not have lexical priority over all other demands on us. It does, however, mean that if we do allow the loss there are reasons to regret this, even if we have acted in an all-things-considered optimal manner.

Nibbles depends, in part, on a refusal to put a price on her – this is what Joseph Raz (2009, pp. 345–353) suggests is the case with friendship. If this is the case, then the loss of Nibbles is non-counterbalanceable as well as being non-negatable. In the spheres of climate policy and environmental preservation, the existence of things that cannot or should not be substituted for anything else and that therefore have irreplaceable value is recognised by activists, conservationists, and environmental ethicists. They tend to argue that things such as biodiversity, individual species and landscapes, human cultures and ways of life and individual organisms and objects have value that cannot be fully compensated in case of their loss.

As an instructive example of something many environmentalists take to have such value, consider biodiversity and the value of individual species. The non-use value of biodiversity can be seen as an irreplaceable value vested in separate species (e.g. in Rolston, 1999). The sheer number of species is at least one important measure of biodiversity in a system, and therefore also of this kind of value. This notion of the value of biodiversity, however, suffers from the substitution problem identified (in this context) by Eric Katz (1985): if function or role is all that matters, then any entity can in principle be replaced by another with the same function. If a species is valuable because of its function in an ecosystem, then it does not have irreplaceable value – if it were lost, it could be replaced by some other species performing the same function without value loss. The substitution problem can be generalised like this: if something has irreplaceable value, that value must be due to something other than the function or any property of that thing, or due to a function or property that no other thing can have. Identifying these grounds of irreplaceable value is not only a problem for biodiversity, but for anything that is thought to be irreplaceable – if a thing is valued only for its properties or features, then it can be replaced, as long as something else could have the same property or feature.

This conclusion is one that economists working on climate change, who tend to be value monists, are relaxed about, but one that environmentalists tend to resist. They tend to do so, for example,

by arguing that there is some distinct value found in natural things that an artificial (manmade) replacement cannot have by virtue of its history. Brian Barry (1999, p. 102) points out one undesirable consequence of the monist (preferentialist) view: if the relevant, value-conferring properties are all that matter, then it may be just as good for us or for future people to walk on astroturf among plastic trees, assuming that they look like the real thing and share the same value-conferring properties. These kinds of conclusions seem worth avoiding. As Barry points out, however, the monist view cannot explain why.

G. A. Cohen argues that only things that are valued other than as a function of the type of value that resides in them can avoid the substitution problem (Cohen, 2011, p. 206). Cohen identifies two ways something can be valued in this way: it may be valued by people with a special relation to it, or it may be valued as the specific thing that it is. In this chapter I focus on a variation of the first kind of value Cohen discusses, which I will call *relational value*.[10] Things with relational value are valued by people with some special relation to them. A thing with this kind of relational value has irreplaceable value because it is the only object with a good-making relational property that cannot be recreated. The relevant property is a relation between the object and a valuer. This is a form of personal value, in that the thing is both valuable to a person and worth favouring for the sake of that person. This relational value can account for most of the cases in which the intuition discussed in this section occurs. I discuss this kind of value in the next section.

Cohen also identifies another kind of irreplaceable value, which he calls *particular value*. Things with this kind of value are valuable not for the sake of some person, but for their own sake. Things with this particular value are valuable not because of any relation they are part of. Instead, they are valued independently of whether anything else is valued, and independently of whether they are in any kind of relation. I think individual humans, and at least some individual animals, too, have

[10] Cohen calls this kind of valuing "personal valuing". I prefer relational value, partly because personal value also refers to a broader idea that I will discuss later in this chapter.

particular and therefore irreplaceable value. I assume that adaptation policy should avoid killing people and animals, or at least sentient ones. I will later consider whether a species, as opposed to an individual animal, has irreplaceable value. As mentioned in chapter 1 and as I will argue in more detail in chapter 5, it is difficult to make a case for something having particular value. This often becomes evident in intractable debates about which things have intrinsic value, which plausibly is a form of particular value. Given all this, I will now focus on relational value as the most relevant locus of genuinely irreplaceable value. As will become clear, relational value is often important in the context of adaptation policy.[11]

III – Relational value

In this section, then, I develop an account of relational irreplaceable value that can explain the core intuition discussed in the previous section, while avoiding the substitution problem. This account, I argue, can play a useful role in policymaking. It relies on few controversial claims about value other than the intuition discussed earlier.

First, consider a physical object that has been preserved by a cultural group for generations. It has, for a long time, played a central role in the cultural and social life of the group. For generations, members of the group have gone to great lengths to preserve this object, and for that time it has been one constant even as other aspects of the group's life have undergone changes. Members of the community value the object, and would be devastated if it was lost.

This is an example of an object that is valuable in virtue of a special relation between it and a group of valuers. Its value results from[12] its longstanding relation to members of this group. It is no doubt

[11] Many accounts of irreplaceable value and related phenomena focus explicitly or implicitly on particular value. The discussion then, unhelpfully, tends to turn to what things have intrinsic value or are valued in and of themselves (see Matthes, 2013). This often causes difficulties, and, as I argue below, relational value can account for most of our intuitions anyway. I discuss related problems to do with value independent of human valuers in chapter 5.

[12] The value may supervene on this property, or be constituted by it, depending on what the basis of value is.

also valuable for other reasons (for example, it may have use value), but this value seems less likely to be irreplaceable. The irreplaceable value in this object has come about because of its longevity and cultural significance – over time, a value-creating relation has formed between the object and the community of valuers. Such objects have *irreplaceable relational value*, by which I mean that they have irreplaceable value that has arisen as a result of an important relation to a valuer or a valuing community.

Over time, this object has gained a relational property that no other extant or possible object can have. This is why it avoids the substitution problem: it is valued only for its properties, but it has a property no other object can have, rendering the object irreplaceably valuable. The assumption (seen in, for instance, O'Neill, 2020) that avoiding the substitution problem requires the presence of value that does not come from the properties of an object does not apply when the valuable property is one that no other object can have.[13] Gwen Bradford (2023, p. 431) describes these objects as ones with *unreinstatable uniqueness* – the object is a bearer of a property that, "as a matter of historical fact, cannot be newly reinstantiated". Most properties can occur in many future and present objects, but the relational property discussed above cannot be instantiated in any future replacement.

To see why reinstantiation is impossible, imagine that this valued object was lost and replaced by a seemingly identical object. In this case, I suggest, some value would be lost. Members of the community would be aware that the replacement object is a mere replica of the thing that had been at the centre of their communal life thus far. This object, they would know, no longer provides a connection with past generations, and it is an object that has not gained any meaning in their own life through mutual engagement. The object is now only one of many changeable aspects of the life of the community. The original, valued object and its replica are qualitatively identical, but they

[13] To borrow the terminology that O'Neill (2020) uses, relational value is a case of irreplaceable *de dicto* value. O'Neill focuses on cases of *de re* valuation, and argues that these are irreplaceable (and non-substitutable). This notion of *de re* valuing is similar to Cohen's particular value.

differ in their relational properties. All copies, Dieter Birnbacher (2016, p. 10) argues, differ from the original at least in their history. A replacement object, no matter how it comes about, would not have the same history as the valuable object. The objects I am interested in have built up their irreplaceable value over a long time. We cannot be sure that a replacement object will ever build the same relation, and we know it will not have this property at the time of replacement.

The irreplaceable value of the original object is contingent on the existence and psychological dispositions of a valuer or group of valuers. The object has irreplaceable value because community members know they have formed a unique relationship with it. If they were not so disposed, then the object would not have this value to them. This value is subjective in the sense that it is value to this specific community, but this does not make the value insignificant.

More precisely, this is a form of personal value. If we, as outsiders, care about the object we do so for the sake of those who value it, not for the sake of the object itself. We might be entirely uninterested in the object itself, but still have reasons to favour or preserve the object if we care about or value those people who value the object. These reasons emerge because the valuer values the object.[14] It is hopefully an uncontroversial suggestion that policymakers at least ought to, in some sense, value or care about the people affected by the policy choices they make. If this is the case, then they will have reasons to care about the personal value of these objects too.

Only some things with relational personal value, however, also give rise to reasons for others to preserve that value. Consider my houseplant, Christopher, which was given to me by a close friend as he left the country at the onset of the Covid-19 pandemic. Since then, I have taken care of Christopher. I am happy to report that Christopher continues to thrive, and this is a fact that I

[14] For a more thorough account of this kind of personal value see Rønnow-Rasmussen (2011). On this view, an object's value for a person consists in the existence of normative reasons to favour the object for the sake of the person. Someone's personal value can also have value to others because we are, most of the time, ready to value other people. I do not think my argument, however, is dependent on reasons entering the story at the point they do for Rønnow-Rasmussen, or on the details of the notion of favouring. I have constructed my argument so that it is compatible with a range of views on what value is.

view with some pride. I would be disappointed if I inadvertently killed Christopher, and the loss would not be fully compensated for by me buying an identical replacement. Perhaps Christopher even has irreplaceable value to me.

It would be unreasonable to account for any irreplaceable value that Christopher has to me in public policy – Christopher does not have the kind of value that gives other people reasons to preserve him. The situation is quite different, however, in the case of objects or practices that have irreplaceable value to whole communities. Lifestyles and communal practices in particular are unlike houseplants in that they tend to be shared by many people. Often, it is also the case that objects valued only by a few people are less likely to really have irreplaceable value. For instance, there may be some amount of money that really would fully make up for the loss of Christopher, leaving me with no reasons for regret. In that case Christopher does not have irreplaceable value. This is less likely to be the case if an object has the effect, mediated by a wider community, of significantly shaping my identity and ends. Such processes are more likely to occur when an object is valued by many people. I do not propose to provide a threshold number of valuers that is necessary for these considerations to have weight in public policy, but I would like to suggest that, if we are to lose some practices and objects that have irreplaceable value, then we should have fewer regrets about losing those that are valued by few people, and also those that are similar to other objects and practices, even if they do have irreplaceable value that cannot be fully compensated through these other things. This way we can at least hope to preserve a diverse range[15] of irreplaceably valuable objects and practices.[16]

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[15] I return to the question of how and why to preserve diverse kinds of value and value carriers in chapter 4.

[16] There are two options for Christopher here, both with the same upshot. The first is the one presented above: the property of my relation to Christopher is not in fact irreplaceable, so Christopher does not have irreplaceable value. The second alternative is that Christopher does in fact have irreplaceable personal value (to me) but no value that could give rise to agent-neutral reasons. On this view, even if others (including policymakers) ought to value and care about me, this does not necessarily give rise to any reasons for them to favour every thing that I value. Perhaps they only have reasons to favour things that are very important for my wellbeing. On either view policymakers do not have reasons to favour or preserve Christopher, but they do have reasons to favour and preserve other things I value that are more important.

The irreplaceable value of an object is not simply a function of time and longevity. As Erich Hatala Matthes (2013, p. 61) argues, the fact that historical properties cannot be reinstated does not mean that there are not many things with the same historical property. For example, there may be more than one pen that is valuable merely because it belonged to Gerald Manley Hopkins. If this is the case, then none of these pens is irreplaceably valuable because of this historical property. In cases of relational value, instead, value is produced not through mere history but through *engagement* between a specific object and a continuing community of valuers. Samuel Scheffler's account of relational value is instructive here. Scheffler (2020) argues that valuing something provides attachment (a relational property), which gives the valuer reason to conserve the valued thing. What is valued is not just the relationship to the object, but the object itself, which is valued as a necessary part of the valuable relation.

We can also imagine other kinds of relational property that are not reinstatable in any new objects, and that, unlike the property of being a pen that belonged to Hopkins, no other existing object has. Bradford (2023), for example, argues that a piano could have irreplaceable value by virtue of having the property of having belonged to Glenn Gould, who is dead. Jake Nebel (2021), similarly, writes about a dress that belonged to Diana, Princess of Wales. If there is only one piano and one dress left with the relevant property, then they have a non-reinstatable property and if they were lost, then value would unavoidably and irreversibly be lost too, because we cannot make any more dresses that belong to Diana or pianos that belong to Gould, given that Diana and Gould are dead. These cases, however, encounter some difficulties because of the fact that their value depends on the attitudes of people who are not Gould or Diana, and who have had no direct engagement with the objects. To me, though I do not have space to defend this view here, Diana's last dress is not plausibly valued for any property that it alone has, but because, for example, it reminds Diana's fans of her or because Diana's fans have an interest in a narrative that it played a part in. These roles could be performed by something else even if the dress were destroyed. At any rate, the cases

I am interested in are different. They are valuable because of their relation to a valuer or community of valuers, not because of their relation to a third party like Gould or Diana.

So far, I have mostly spoken of physical objects with irreplaceable value. Analogous value can also be found, however, in cultural practices and in ways of life. As Scheffler (2020, pp. 52–53) puts it, "[w]hen we engage in valuable activities, we follow in others' footsteps, fill their shoes, struggle with their legacies, learn from their mistakes, and create histories and legacies of our own. Eventually, we pass the torch, or the baton, to a new generation." These practices gain irreplaceable relational value because we and our ancestors have bestowed them with a role in a relation that is valuable to us. In the case of climate change, as I will go on to argue, these practices (as opposed to physical objects) with irreplaceable relational value are particularly important.

Ways of life and cultural practices may be thought of as unusual objects to bequeath to future generations because they are malleable, and can sometimes be improved more easily than, say, physical artifacts. This may make their preservation more difficult to justify: a future generation will only value a way of life if a previous generation has preserved it for them. The prior generation, however, only have good reasons to preserve the way of life if they expect the future generation to value it.[17] But it does not seem clear that they have good reasons to expect the future generation to value this way of life more highly than alternative ways of life.[18] This way of life does, however, have the historical property discussed above, and alternative ways of life do not: it provides a connection to previous generations, and is constitutive of communal identity. So the future generation does have one reason to prefer this to alternative ways of life, and the present generation has one reason to expect them to do so. The future generation may still all things considered end up preferring an alternative way of life, but this would be for reasons that the

[17] I assume this is the case for now. In chapter 4 I will discuss other reasons we have for bequeathing various things to future people, even if we do not have good reasons to think they will value them.
[18] I thank Serena Olsaretti for first putting a version of this argument to me.

previous generation cannot control. The previous generation, therefore, has one future generation-regarding reason to preserve the way of life.

There may also be things, particularly ways of life and practices, with irreplaceable relational value to large communities of people that we, nevertheless, ought not to preserve. Perhaps it is the case that many people living in affluent states today attach irreplaceable value of this kind to a way of life that intrinsically involves unsustainable consumption and high emissions. Such a way of life is objectionable because it significantly harms many other people, now and in the future – it has unacceptable externalities. It would be far better, all things considered, if adherents of these gas-guzzling, over-consuming ways of life abandoned them. Of course, an argument needs to be presented as to why these externalities are unacceptable. There must, however, be at least some unacceptable externalities, meaning that some practices ought not to be promoted or preserved. A community that has a strong relation to a way of life that involves human sacrifice should not be enabled to continue in that way of life, because it involves externalities that on any reasonable conception of justice are unacceptable. The practice may have value and by virtue of that value even give us pro tanto reasons to preserve it, but those reasons are clearly outweighed (see Rønnow-Rasmussen, 2011, p. 119). The same reasoning may or may not (depending on your favoured theory of justice) extend to gas-guzzlers, but the salient point is that it is possible to grant that a practice has irreplaceable value to a community, while at the same time holding that the practice ought not to be promoted or preserved.[19]

To summarise, the value I have discussed in this section is relational, in the sense that it is valuable in virtue of a relation between the valued object and a valuer or group of valuers. The value is personal, in the sense that it is value to the valuer, and dependent on the disposition of the valuer.

[19] An even simpler solution to this problem is available to those who, like T. M. Scanlon (2000, p. 90), hold that people can value things that are not in fact valuable, by valuing them for bad reasons. Gas guzzling and human sacrifice, then, could be valued by many people for bad reasons, while not actually being valuable.

It can, however, give rise to impersonal reasons to preserve the object, if there are reasons to care about the valuer. Finally, reasons to preserve such objects can be outweighed where the preservation of the valued object has unacceptable externalities.

IV – The consequences for adaptation policy: the preservation of species and unique landscapes

In the next two sections I turn to the implications of the above argument for adaptation policy. I have, so far in this chapter, argued that irreplaceable value is important, and that we have a strong pro tanto reason to prioritise its preservation over that of other kinds of value. I have also, in the previous section, sought to show that not only does truly irreplaceable value exist, but that it is widespread and exists wherever groups of valuers have significant relations with objects of value. If these two claims are true, then irreplaceable value will provide reasons against pursuing some adaptation policy options. In this section, I focus on cases in which irreplaceable value limits adaptation policy less than might be expected, and in the next section I turn to cases where the preservation of irreplaceable value does limit and steer adaptation.

Adaptation, generally, reduces risks and losses from climate change by adjusting existing systems, whether they be human or natural. This adaptation will range from measures such as flood defences to changing the crops that are farmed in a region. Other examples of widely pursued adaptation measures include diversifying tree species composition in forests and moving animal species to new locations. More extreme adaptation measures, such as moving entire human settlements, are also increasingly being considered (IPCC, 2023a, p. 2165). Many adaptive measures enable us to protect something that we value at the expense of something else that we value less – they involve anticonservative substitutions of valuable things. Sometimes, as with all choices in climate policy, this is simply a matter of opportunity cost - the resources used to adapt could have been used to create or preserve good elsewhere. In some cases, however, the loss is more

straightforward: adapting to climate change involves destroying something that exists, whether this be present irrigation patterns, natural landscapes, or ways of life.

This means that irreplaceable value is at stake in a wide range of adaptation policy choices. Some forms of adaptation change landscapes, ecosystems, lifestyles, and cultures. If any of these have irreplaceable value and we should prioritise avoiding the loss of irreplaceable value, then we have a strong reason to avoid these ways of adapting to climate change, instead focusing on mitigating its effects or, where mitigation is no longer an option, pursuing costlier forms of adaptation even where easier ones are available.

This is important in cases where adaptation involves the substitution of something seemingly unique (a coastline, or the local ecosystem) for something that seems more contingent (the settlement the flood defences protect). So-called "hard" coastal defences (most notably, levees and barriers) often damage coastal ecosystems (Cooper et al., 2020).[20] At the same time, however, coastal defences that rely on more natural mechanisms, such as sediment nourishment on beaches, are less effective and have shorter lifespans (IPCC, 2023a, p. 479). Consider a settlement threatened by damage from rising sea levels caused by climate change, where the construction of effective flood defences would result in extensive ecosystem destruction. In cases such as these, we might prefer to abandon the settlement for a new one, assuming the coastline or coastal ecosystem has irreplaceable value and that the settlement can be substituted for a new one without value loss. This seems, at least, highly counterintuitive – the construction of effective flood defences is usually a far less costly measure than relocating an entire community. This kind of thinking could feed into a potentially unhelpful and unfounded bias in favour of so-called "green" nature-based adaptation measures over "grey" technology-based options (Hoffman & Kovaka,

[20] The IPCC (2023a) warns that some flood defences could even reduce the resilience of local ecosystems to climate change.

2023). This bias might be justified, however, if it turns out that "natural" things are more likely to have irreplaceable value than non-natural ones.

This tension between adaptation and the preservation of irreplaceable value could also go some way towards explaining a bias in climate policy against adaptation and in favour of mitigation, which seems to involve fewer conflicts with irreplaceable value. Of course, we do not need to adapt to changes in the climate that we can mitigate sufficiently, but there are many changes in the climate that can no longer be effectively mitigated, and that we therefore ought to adapt to. In spite of this, the IPCC (2023a, p. 26) notes that the "overwhelming majority" of climate finance has been targeted to mitigation and only a small proportion to adaptation. African countries that are already experiencing the effects of global warming while contributing very little to global emissions receive financing for mitigatory measures that is double that received for adaptation, despite already spending much of their GDP on adaptation (Savvidou et al., 2021). Expecting these countries to pay for the necessary adaptation themselves, or to first significantly cut their emissions, is likely to threaten their capacity for human development and to increase poverty. As Henry Shue (1993) has argued, there is a significant moral difference between luxury emissions in developed countries that do little to reduce poverty, and subsistence emissions in less developed countries that can do much to alleviate immediate human misery.

There are, however, some things that, though they appear to have irreplaceable value, do not. This makes a policy that prioritises the preservation of necessarily irreplaceable things less restrictive than it would be otherwise. We should prioritise the preservation of things that are necessarily irreplaceable – we know no adequate replacement is possible, and that gives us strong reasons to avoid their loss. Other things are merely contingently irreplaceable – perhaps we are uncertain about whether an adequate replacement is available, or perhaps one is not expected to appear until much later.

Some things that may appear to be necessarily irreplaceable are merely contingently so. Consider a species of bird. Based on my argument so far it is clear that some species of bird may have irreplaceable value because groups of people have an important relationship with them. This is not likely to be true of all species of bird, however. It could be that these species have irreplaceable value because of their unique genome. This claim, however, is implausible – organisms are not worthy of preservation merely because they exist (Birnbacher, 2014). It is also not enough to suggest that concepts such as the integrity or the identity of a species grant them irreplaceable value – all species presumably have these, so a lost one can be replaced by another one without value loss. What we need to show, instead, is that species, generally, have identities or integrities, or something else about them, that are valued in ways that are different from those of other species.

One compelling attempt to do so is provided by Robert E. Goodin (1992, p. 61). He argues that a species like this is irreplaceable because of a historical property – even if humanity could genetically engineer a replacement bird species that performs all the functions of this one, that replacement would be less valuable by virtue of its manmade history. This argument would also apply in more realistic circumstances, such as when humans introduce a replacement species into an ecosystem to perform some function previously performed by a different, now extinct species. To Goodin, things created and shaped by humans, because of their history, necessarily have less value than otherwise equivalent natural things. Similarly, O'Neill et al. (2008, p. 162) argue that natural objects cannot be substituted for human ones without value loss because they embody a particular history. This still leaves open the question of why this history is valuable (Matthes, 2013, p. 49). In the cases of irreplaceable value I discussed in the previous section the answer is that the history of the object comes with a relation to a still existing valuer or group of valuers, and therefore necessarily carries at least personal value.

Goodin's answer to this question, on the other hand, is based on the idea that humans, as a matter of fact, need and value natural things as an external context for their own lives, meaning those

natural things have a value that cannot be replicated by human intervention. However, this historical property of "naturalness" as something separate from the human is difficult to define – for one thing, humans are part of nature too. Goodin (1992, pp. 31–33) suggests that what makes the natural special may in fact be the uniqueness of natural objects, or the fact that humans are trying to copy natural features in the artificial. Many manmade objects, and in particular manmade practices and ways of life, however, also seem to have an excellent claim to uniqueness. The fact that human artifice copies nature, meanwhile, undoubtedly provides evidence that nature is valuable, but not of it having a value that is not found elsewhere, in other things worth copying. This line of argument relies on the claim that natural things provide meaning to human lives that cannot be provided by anything else. I see no reason to think that this has to be the case.

This problem is not just present in Goodin's account, but also more broadly among philosophers who assume that the historical property that makes something natural irreplaceably valuable must be its naturalness. Explaining the irreplaceable value of things in nature this way is unnecessarily difficult. Instead, it is possible to show that important parts of nature have irreplaceable value precisely because they are not somehow independent of humans, because humans have built value-generating relationships with them.

Of course, not all parts of nature, and not all species, are valuable in this relational way. Some species, but not all, instead have contingently irreplaceable value because of their instrumental role in an ecosystem. A functioning ecosystem is no doubt very valuable, but maintaining the value of a system involves maintaining its valuable functions and features, not the identity of its components. There may, however, be pragmatic reasons based on uncertainty and the preservation of option value to protect many species. To see this, consider that species often perform a multitude of roles as part of their ecosystem. They may be prey to other species or keep down the population of some other species that would cause harm to the ecosystem if present in greater numbers. Plant species can provide shelter, food and pollen to other species, or live in a symbiotic

relationship with them. Not all species are likely to be integral to the resilience of an ecosystem, but it can be difficult to tell which these key species are. If a species were to disappear some of its functions would likely be performed by other species instead, but there may be some important and perhaps (by humans) hitherto undetected function that falls into abeyance. It may also be that a species performs a function that is not valued by humans now, but could become so in the future. In these cases, it could be difficult to later introduce other species to perform the missing function. The loss of these functions could be very bad indeed and this risk often gives us strong reasons to preserve the species we can, but this is not because the species is irreplaceable – it is merely because a replacement may not be readily available. A replacement that could perform the same function is not only conceivable but often also extant – it may, however, be difficult and costly to find and install. This species may be contingently irreplaceable, but the things with irreplaceable value that I am interested in here are necessarily irreplaceable, and this is why we ought to be so concerned about their loss. Contingently irreplaceable things are more likely to be worth preserving not by virtue of their irreplaceable value, but by virtue of our uncertainty about their value and their irreplaceability. I cannot discuss the appropriate response to uncertainty at any length, but I do believe that the motivating intuition of this chapter, that we should prioritise things with irreplaceable value, is true, and that uncertainty often provides less pressing reasons for preservation than the presence of necessarily irreplaceable value does.[21]

The policy upshot is complicated. Some level of biodiversity is necessary for the proper functioning of the ecosystems that humans and animals rely upon. According to the IPCC (2023a), the loss of biodiversity also adversely affects the capacities of ecosystems and communities to adapt to climate change. Where adaptive measures are likely to damage local ecosystems this should be taken into account. Ecosystems are extrinsically valuable because they enable human societies

[21] I discuss uncertainty and the preservation of option value in chapter 4. As I argue there, our uncertainty about what will be valuable in the future gives us reasons to preserve a diverse range of potentially valuable things, including species. These reasons, however, do not arise from any irreplaceable value.

and lives to flourish, and because they provide a home for animals and plants that are valuable. The fact that biodiversity is valuable in this sense does not mean, however, that any marginal increase in biodiversity always adds value.

The reasoning of this section can be extended from species to cases such as unique parts of the landscape. Attempts to pin down, for example, the irreplaceable value of a unique coastline or a beautiful waterfall suffer from the same issues as the case of the species. Except in cases of relational value, such as when a community of valuers has built an important relationship with some feature of the environment that they live in, an individual piece of the landscape does not carry value that cannot be replaced. This is relevant in cases such as the construction of hard flood defences. Inasmuch as these are resisted because of their impact on unique parts of the coastline or on unique local ecosystems they can be more easily justified if such parts of the coastline or such ecosystems do not have irreplaceable value.

If the argument of this section is correct, then there is also not necessarily any reason related to irreplaceable value to avoid the increasingly common practice of biodiversity offsetting. This is a practice where the loss of existing sites of biodiversity are offset by the restoration or creation of new habitats elsewhere. If such sites of biodiversity have irreplaceable value, then this is an objectionable practice that leads to value loss (O'Neill, 2020). If, however, only those sites of biodiversity to which valuers have a relation are valuable in this way, then biodiversity offsetting can remain an important policy tool in places that do not have this relation to valuers. Even then, however, we must be careful, because the lost site of biodiversity could have replaceable but nevertheless significant value to people near it.

V – The consequences for adaptation policy: ways of life and significant places

If there are some things that seem to have irreplaceable value that turn out not to have it, then the need to preserve irreplaceable value will restrict policy less than expected. In practice, however, the problem tends to be the opposite. Irreplaceable value is often not accounted for at all in climate

policy. This means that as a consequence of the monist approach implicit in much policymaking, combined with a reliance on cost-benefit analyses that rely on value substitutability and measurability, adaptation policy can have negative impacts on things of potentially irreplaceable value such as animal lives and wellbeing (Broome, 2019, p. 98), as well as traditional livelihoods and people's sense of cultural identity (O'Brien, 2009, p. 170). As Robert Solow (1993, p. 168) puts the economists' view, "[a] sustainable path for the economy is thus not necessarily one that conserves every single thing or any single thing. It is one that replaces whatever it takes from its inherited natural and produced endowment, its material and intellectual endowment. What matters is not the particular form that the replacement takes, but only its capacity to produce the things that posterity will enjoy."

The specific problem here is that Solow, like most welfare economics, assumes the fungibility of different kinds of natural and non-natural capital. Moreover, all losses are assumed to be compensable. This is a consequence of the use of "willingness to pay" measures in the valuation of climate losses. The value of potential losses, on this approach, is determined by how much people would be willing to pay to avoid the loss. There is now a rich literature on non-economic losses, and how they can be prevented and compensated (in the counterbalancing sense) (see Serdeczny, 2019). This literature, however, tends to define non-economic losses as those that are not commonly traded in a market – they are still in principle fungible and compensable. This does not recognise the possibility of losses of value that, to return to Slavny's (2014) terminology, cannot be counterbalanced. Yet such value seems to exist.

Some of the most plausible and important cases of irreplaceable value are found in cultural objects, practices, and ways of life. This gives us new reasons to give the preservation of these greater weight in the formulation of climate policy, particularly where they are already under threat from global warming. Goodin (1992, p. 37) is surely right when he argues that the life of an individual goes better when set in a larger context. There is no reason to suppose, however, that this context

must be provided by an unchanged natural environment. Indeed, people see their lives as taking place in a social context provided by their societies and cultures, providing a background and a firmament supported by practices and objects that have irreplaceable value because of their history. We have strong reasons to preserve these because of the way they are valued. Their preservation should be prioritised in the formulation of adaptation policy, too.

To see what this may mean in practice, consider upstream dyke construction. This practice can shift flood risks from upstream areas to downstream areas (see Birkmann, 2011, p. 818). In these cases, what landscapes, communities and ways of life are affected will shift too. If there are many things with irreplaceable value downstream, then we have a reason not to pursue such a policy, even if things of great replaceable value lie upstream. Therefore, if upstream dyke construction threatens the way of life of downstream communities, even if it protects larger conurbations upstream, then we have a pro tanto reason to not construct these dykes.

More generally, it is difficult to justify adaptation options that threaten ways of life, or culturally significant objects. This will make alternative adaptation options seem more attractive. Consider how the migration of workers to areas less affected by climate change could enable non-workers to remain in the affected regions, even if agriculture, for instance, became impossible there (Barnett & Webber, 2011, Section 4). This kind of labour migration could provide an alternative to more aggressive interventions in the natural environment and way of life of the affected region, thereby preserving natural and social phenomena that would otherwise be lost. Labour migration comes with great costs, however. Jamie Draper argues that in many circumstances it is likely to be a severely unjust policy, unless communities are provided with acceptable alternative adaptation options (Draper, 2022). An expansive notion of irreplaceable value may mean that there are few other acceptable adaptation options. Indeed, in cases where it is possible for at least some people to remain in the affected region this may be the best option available (Draper, 2024, p. 53).

Whether particular places and localised practices that these remaining people could maintain have irreplaceable value should be of decisive importance when making these judgements.

Not only adaptation to the effects of climate change, but also adaptation to necessary climate policy can present difficult trade-offs involving things of irreplaceable value. Consider the case of coal mining communities. These can be special cases at least for two reasons. Firstly, they tend to be geographically concentrated and occupationally specialised – there are few employment opportunities unrelated to the coal industry. Second, these communities are subject to mitigatory policies that are likely to be unavoidable if the countries they are in are to meet morally necessary climate targets. Coal mining often plays a community-defining role in these places. As an activity it may become constitutive not only of communal but even of individual identity (Gaikwad et al., 2022, p. 1178). In such circumstances, monetary compensation given to regions affected by the shutdown of the mining industry is likely to present, in one way, an insufficient form of compensation. Decarbonisation is not causing just any loss – it is causing the loss of an activity that is seen as having intrinsic or constitutive value. Carley et al (2018), in a study of coal mining communities in the United States, describe how many in these communities identify with the activity of coal mining precisely because their ancestors going back many generations were engaged in the same activity, and because the life of the community has, for a long time, been shaped and determined by the nature and needs of the coal industry, and by their relation to it.

This suggests that the constitutive relation between the activity of coal mining and communal identity grants the distinctive way of life of these communities irreplaceable value. As members of the community move away to other places and sectors there is unavoidable value loss – the new ways of life they adopt, at least in the cases discussed by Carley et al (2018), do not and cannot have the relational value their previous way of life did, because this value is the result of a longstanding relation that takes generations to build. In these cases, sufficient adaptation to the effects of necessary climate policy may be impossible. Using the IPCC's framework, we then move

on to questions of loss and damage rather than adaptation. This introduces a range of new ethical issues involving possible questions of compensation and the securing of distributive justice (Walliman-Helmer et al., 2019). These issues are likely to be particularly difficult in the case of coal mining communities, based as they are around an activity that carries much of the responsibility for anthropogenic climate change. More generally speaking, the arguments in this chapter can lend weight to the idea that those who suffer losses of irreplaceable value have weightier claims to compensation than those who suffer other losses. This, however, is a question of how to deal with loss and damage, rather than adaptation (Byskov, 2024).

VI – Conclusion

In this chapter I have argued that irreplaceable value is at stake in a wide array of scenarios related to adaptation to climate change and adaptation to unavoidable climate policy. The intuition that the preservation of irreplaceable value should be prioritised is a promising start as we respond to the unavoidable consequences of climate change. Irreplaceable value is often found where a group of valuers have a long-lasting, value-conferring relation to an object of value. Such objects should be preserved. Many other things do not have this value, so irreplaceable value does not give us reasons to worry about them when adapting to climate change.

Adaptation policy unavoidably involves difficult problems and trade-offs. Still, it is possible, I have argued, to say something about what such policy should look like while taking irreplaceable value seriously and without resorting to the monist approach of climate economics. In this, we should be guided by strong intuitions such as that of the priority of irreplaceable value. At the same time, it is not necessary to let such value hinder or slow necessary climate policy.

What is needed instead is an approach that, where possible, protects valuable ways of life, practices, communities, and places and objects related to them. I have suggested finding value-conferring relations as the key to identifying which these things are. In the case of climate change, I have argued, the protection of threatened ways of life will be especially important. Where these value-

conferring relations are absent climate change will still result in value loss, but this lost value can be replaced afterwards. This is the work done by appropriate compensation schemes for climate loss and damage. Losses of irreplaceable value can, by definition, not be fully compensated for. They can, however, be avoided not just through mitigation but also through adaptation policy.

Not only irreplaceable value is worth preserving. Many things have great replaceable value, and are worth preserving for this reason. As mentioned above, it is not plausible to argue that irreplaceable value should have lexical priority. I will now, in the next chapters, turn to discussing various forms of value, and valuable things, that may be replaceable but that are nevertheless important. There is also much value that does not exist yet, but that we can nevertheless seek to preserve and promote today. This is the kind of value that I turn to now. As I will argue, future people do not exist yet, but it is nevertheless of great importance that they should be able to live autonomous lives. We should act in ways that enable them to build such lives. This also means, as I argue in chapter 4, that we must leave them a diverse range of valuable things, even where their value seems replaceable. We have strong reasons to preserve irreplaceable value, but this is not the end of the story of how the plural nature of value should shape climate policy.

Chapter 3

Future autonomy and trusteeship

I - Introduction

Our generation is faced with a number of important future-affecting decisions. Some of the most important concern our response to climate change. How quickly we reduce our emissions, how well we can protect ecosystems from the effects of climate change and what things we choose to preserve into the future will have a very significant impact on the lives people are able to live in the future. Even relatively small policy changes can have large future effects. In this chapter, I turn my focus to the impact of our actions on future people. This means I also shift focus from contemporary value - that we can see around us today - to value that will exist in the future. The contention of this chapter is that, first, the autonomy of future people is valuable, and also something we can look to promote through our choices today. Second, if we (as we should) care about the ability of future people to lead autonomous lives, then we need some method of judging our actions for their effects on future autonomy. I will propose and defend one such principle, the *Trusteeship Principle.*

I defend the idea that future people are entitled, as a matter of justice, to an extensive kind of autonomy that goes beyond the satisfaction of their basic needs. Indeed, the *Principle* I defend depends on an expansive but, I think, defensible view of the autonomy-related interests and entitlements of future people. In particular, I defend the idea that future people have rights against us unjustly interfering both with the *formation* and the *pursuit* of their conceptions of the good. The former violations occur when we improperly influence the conceptions of the good of future people, and the latter when we do not leave them the options they need for the effective exercise of their autonomy. This view of autonomy also goes far beyond the welfare interests of future people, and highlights key non-welfare interests that must be safeguarded too. I will argue that since future people do not yet exist, we must hold their autonomy rights in trust on their behalf,

and that this has important consequences for how we ought to approach decisions that will affect them. The *Trusteeship Principle* is our best guide for how we ought to preserve the extensive kind of autonomy that future people, like us today, have an interest in.

I begin by sketching a broad account of personal autonomy. I explain why this kind of autonomy seems important, and why we should assume that it matters to future people as it does to us. From this account of autonomy, I derive five dimensions along which we should evaluate principles to guide our decision-making. Section III begins with a justification of my appeal to rights, and a discussion of the non-identity problem. I then argue that the autonomy rights of future people are appropriately held in trust by those alive today. Section IV derives and defends the *Trusteeship Principle,* which I argue should guide our future-affecting actions such that they safeguard the autonomy of future generations. I use the dimensions identified in section II to evaluate a sequence of candidate principles, concluding that the *Trusteeship Principle* is most successful in preserving the kind of autonomy we should care about. Section V concludes.

II – Personal autonomy in the future

Our actions today could well be making the future world a much worse place. Our unsustainable use of natural resources, greenhouse gas emissions, and the despoiling of our natural environment are both widespread and likely to make the lives of future people unduly bad. This matters, from our point of view, because we realise that future people will, in some way, be people like us. In particular, they will be *moral* people, capable of being the bearers of rights and duties, and with interests that may be somewhat like ours. Because of this status they will be entitled to at least some of the goods we consider ourselves entitled to.

They are at least entitled to autonomy. Respect for the autonomy of future people is required if we are to show them basic respect as persons, and should be considered among the most important goods we can bequeath them. The basic goods they will need for their survival are also needed as

prerequisites for the exercise of their autonomy. To live autonomous lives, however, they also need access to options and goods beyond these basics.

Leaving things behind or allowing their loss are not the only mechanisms through which we can enable or undermine the autonomy of future people. Through our decisions we are also able to shape the preferences of future people, and the likelihood with which they will be looking to pursue certain conceptions of the good. It might seem as though we simply ought to avoid doing this, and choose not to influence the factors that will determine how future people determine their conceptions of the good. This, however, is not possible. There are no choices available to us that do not influence what future people value and what lives they deem worthwhile to pursue. As Mark Sagoff (2008) points out, our choices today will largely determine both the identity and preferences of future people. As Derek Parfit (1986) famously argued, our policy choices will lead to different people being born than otherwise would have been. Meanwhile, because preferences are adaptive we can expect future people to form preferences for whatever we leave them. As Sagoff puts it, "[i]f individuals in the future have no exposure to anything that we would consider natural or unspoiled, they will not acquire a taste for such things." (Sagoff, 2008, p. 56) Instead of trying to avoid influencing the identity and preferences of future people we must try to find a way in which we can influence them in a way that respects their autonomy as much as possible.

For the purposes of this chapter, I propose to treat autonomy as a concept meant to cover general commitments to do with the importance of personal independence and the ability to shape one's own life. To borrow from Joseph Raz (2009, p. 369), this autonomy is about the ability of each person to be (part) author of their own life. It is a "vision of people controlling, to some degree, their own destiny, fashioning it through successive decisions throughout their lives." (ibid.) To quote David Enoch (2022, p. 143), an autonomous life is "a life shaped by the values and choices of the person whose life it is."

I take as a given that autonomy understood in this broad sense is important, and worth protecting and promoting on behalf of those persons whose autonomy it is. Autonomous lives, by extension, are valuable. I speak of whatever rights may advance and protect these ends as autonomy rights. I will also assume that, if we ought to care about the autonomy of people today, then we should care about the autonomy of future people too.

Brian Barry argues that we should accept this kind of basic equality as an axiom, even across generations; if people alive today are equals in some sense, then there is no reason not to suppose that future people are, or at least will be, our equals in the same sense (Barry, 1999). I will not rely on this strong position, though my argument is compatible with it. Indeed, it is worth pointing out that even if heavy pure-time discounting is permissible, so that the interests of future people matter much less than our like interests, we will still retain reasons to care about the autonomy of future people in the ways I discuss below. After all, even if the interests of future people are discounted, their heavy and central interest in autonomy of at least the next several generations is likely to remain important. We cannot predict the preferences of future people, but we can assume that they will be, or at least aspire to be, free moral beings in the same way that we are.

I propose that a commitment to basic equality constitutes a commitment to basic respect for the personhood of others, and that this respect involves, at least as one part, respect for others as autonomous beings. This entails a presumption against doubting the ability of others to formulate independent conceptions of the good and pursuing them, as well as a positive requirement to treat others in ways that contribute towards their ability to exercise this autonomy. These are the features of personal autonomy that I will focus on here. This conception of autonomy is anti-paternalist: if we doubt or deny future people their ability to formulate their conceptions of the good, then we fail to show respect for their rational agency (Cholbi, 2016). In doing so, we are denying them their status as autonomous beings.

I follow Gerald Dworkin, who argues that violations of autonomy must involve "a usurpation of decision making, either by preventing people from doing what they have decided or by interfering with the way in which they arrive at their decisions." (G. Dworkin, 1988, p. 123) This suggests two kinds of violations of autonomous decision-making: violations that interfere with how the victim arrives at decisions or *forms* their conception of the good, and violations that interfere with the victim's ability to carry out their already formed intentions, or their ability to *pursue* their conception of the good. I will adopt this distinction and suggest they are the main ways we can violate the autonomy of present and future people through the instruments of public policy. This twofold distinction is similar to Enoch's (2017) distinction between autonomy as non-alienation and autonomy as sovereignty. A person is free in the non-alienation sense if their decisions are determined by their values and deep commitments. To this sense I add the need to be able to freely form and decide upon these deep commitments in the first place – others should not manipulate them into adopting commitments they otherwise would not have adopted. A person is autonomous in the sovereignty sense, meanwhile, if they can make effective choices and have the options that they require to do so.

I will conceptualise respect for the autonomy of future people in terms of respect for a set of autonomy rights.[22] These rights must protect much more than just welfare-related interests, especially if welfare in understood in terms of preference satisfaction. They must ensure that future people can be authors of their own lives, and that they have the options needed not just to fulfil their preferences, but to make meaningful choices. These rights must, as suggested above, secure two things. First, future people have rights that are necessary for carrying out their intentions. In particular, they need the means to live a good life according to their pre-formed conception of the good. This can be described as an entitlement to freedom; plausibly, the freedom of future people is defined by the set of options we leave for them (Ferretti, 2023).[23] This kind of freedom as sets

[22] I leave my discussion of why and how a rights-based framework is applicable here to the next section.
[23] The next chapter is dedicated to this freedom- or options-based component of autonomy.

of options, however, is only one aspect of autonomy. This is because future people also have a right to arrive at their own intentions without unjustified interference from us. In particular, they must have the right to shape their own conceptions of the good, and therefore a right against us shaping them before they are born, as far as this is possible. I will discuss the content of each of these in turn.

First, future people, if they are to be autonomous, need access to the means of pursuing a range of different ways of life, according to their various conceptions of the good. They also need the means to survive; they need a habitable environment, access to sustenance, clean water, and so on. Denying them this would violate their autonomy through interference with their *pursuit* of their conception of the good. Beyond these basics, however, it seems as though what they need is simply whatever is valuable by the standards of future conceptions of the good. This presents a problem, because we do not know what will be valuable in the future.

One option, here, is simply to give up and focus on what we know all humans need. David Wiggins (2006), for example, argues we should focus on leaving behind what is necessary to meet the basic needs of future generations. There is a worry that, if we try to bequeath what future people may come to value beyond this, then we are in fact undermining their autonomy by imposing our conception of the good. This worry becomes particularly acute if we agree with John O'Neill that, beyond basic goods, "[a]rguments about what should be passed on to future generations are arguments about the nature of the goods that are constitutive of the good life." (O'Neill, 2022, p. 350). This worry emerges from the fact that autonomy, plausibly, has both a self-forming and self-expressing dimension. These correspond to the two kinds of autonomy rights under discussion here. Future people do not only have a right to the means of expressing their autonomous self - they must also have a right to form themselves, their identity, and, importantly, their conception of the good.

Sagoff (2008) embraces the idea that we should bequeath what we already know to be valuable. To him, our reasons to not leave "an environment dominated by dumps, strip mines, and highways" (Sagoff, 2008, pp. 57–58) follow from the fact that other environments are simply better, and that we ought to make sure that future people, too, are better in the sense that they value them. This, of course, is paternalistic, and as such conflicts with other aspects of autonomy.

This is because the second right that future people must have is a right to shape their own conceptions of the good, without us determining them before their birth. This falls under what Joseph Raz (2009, p. 378) calls the independence condition: by improperly shaping the conceptions of the good of future people we are wrongly subjecting their will to that of another. O'Neill identifies one potential way we can violate rights in this way: if we use a list of what we deem good to determine what we leave future people, then it seems we are assuming they, too, will value what we do. This is what Sagoff explicitly thinks we ought to do.

This can turn into a more fundamental worry. Given that humans are adaptive, we could plausibly force future people into valuing whatever it is that we leave them. Perhaps, as Sagoff (2008, p. 56) argues, "[p]eople may come to think that a gondola cruise along an artificial river is a wilderness experience if there is simply nothing to compare it with." Taking this one step further, could we not save a lot of time and effort by not leaving our successors very much, but doing what we can to make sure their preferences adapt and they are happy with their lot? Perhaps we could intentionally leave them artificial rivers, safe in the knowledge that their preferences can be shaped so that they will not feel any need for an alternative. My suggestion is that we ought not to do this, because it would violate their autonomy in this second way – we would be manipulating them in a way that is objectionable because of the way in which we substitute a conception of the good chosen by us for one they would otherwise have developed themselves.

It may, indeed, look like we cannot avoid completely determining the preferences of future people, given how adaptive we know them to be. As I will go on to argue in more detail, however, we can

make future preferences less determinate by leaving a large range of adequately diverse options. We are still determining the range of options available (and by extension the range of possible preferences), but we can stay very far from determining the exact content of future preferences in the way we would be doing if we left only one meaningful option. In the next chapter I provide a more systematic account of what it means to bequeath adequately diverse options. For now, however, I assume we can make sense of the general idea.

Based on these two categories of rights we can identify some dimensions along which we can judge the permissibility or otherwise of our proposed behaviours and policies towards future people. I will state these and then briefly explain how they follow from the two kinds of autonomy rights that I take future people to have. We should judge the effects of our actions on the autonomy of future people based on the extent to which we

1. *Basic needs:* Leave future people the things they need to satisfy their basic needs and
2. *Sufficient options:* Sufficient potentially meaningful options, such that they are able to make meaningful choices about their lives, and
3. *Diversity:* Such that they are able to pursue a diverse range of conceptions of the good while
4. *Indeterminacy:* Refraining from attempts to determine future persons' conceptions of the good and while
5. *Minimal direction:* Making choices about how much and what to preserve such that the conceptions of the good of future people are steered in the direction of what we now value as little as possible as a result of such choices.

The first three dimensions arise from the first kind of right: the right of future people to effectively exercise their autonomy. The first is the most important one: the satisfaction of basic needs is a prerequisite for the exercise of any kind of autonomy. These are what David Wiggins calls "unforsakeable needs" – needs that are "*grave, deeply entrenched, and scarcely substitutable"* (Wiggins,

2006, p. 33). It is difficult to determine exactly which needs are vital in this way, and that task is beyond the scope of this chapter. The things needed to satisfy these needs, however, are likely to be limited to a small number of things that every person can be expected to need, now and in the future. As such, it seems we should worry about further needs and desires too.

This is because we can easily violate the autonomy rights of others even if we do not deprive them of what they need to fulfil their basic needs. Prisoners, at least in some countries (or in an ideal world, anyway), are provided with what they need to fulfil their basic needs – they are safe, they are fed, and they have access to healthcare. Still, their autonomy is (perhaps justifiably) restricted. This is because they lack access to sufficient options to live their life in accordance with their conception of the good. This can be true both of trivial and important choices, and these will matter to different degrees.

Raz (2009, pp. 374–375) identifies two ways in which someone must have sufficient options in order to be autonomous: the available options must enable the person to make both important and trivial choices, and they must have a sufficient variety of options. A prisoner cannot choose to enjoy a succulent apple when they feel like it, but they can also not, at least at the moment, pursue the career they would like. To Raz, both of these present a problem. Variety matters, too; having access only to options that are very similar to each other will undermine one's capacity for autonomous choice. Dimension 2 incorporates these considerations.

Here I leave open the question of whether having more options is valuable in itself, because it increases autonomy (see, for example, Carter (2006)). I am open to the contrary possibility that only the value of our options, and not merely having more options available to us, contributes to autonomy (and having worthless options never does). If this is the case, we should still leave future people a large set of options. This is not, however, because having more options is in itself valuable, but because of our uncertainty about what future people will value. Leaving more options makes it more likely that we will leave things they find valuable. The next chapter provides a much more

detailed argument for how uncertainty about future value makes the preservation of diverse options necessary for freedom and autonomy.

Dimension 3, *Diversity,* arises from a separate argument for the need to have options that provide variety in some way, and that are not too similar to each other. This need arises not because each individual needs access to diverse options (even though, as seen in dimension 2, this is important too), but because different future individuals will have diverse conceptions of the good. Each generation, then, needs access to things that can support and enable diverse ideas of what the good life consists of – otherwise only some, perhaps those with popular ideas of the good life, will be able to pursue an idea of the good life once they have formed it.

We might worry that, to do well on dimensions 2 and 3, we must unavoidably be paternalistic, and impose our conception of the good on future people. This worry is why John O'Neill (2022) believes we should not try to preserve things because we want to leave future people with a diverse range of options, as per dimensions 2 and 3. To him, moving beyond what is required for the satisfaction of basic needs unavoidably involves us imposing our conception of the good on future people. If we preserve an ancient woodland, for example, we are not really doing so because we want to leave future people with the choice of pulping it or preserving it. Instead, O'Neill thinks, we preserve it because we think it is valuable. As we have seen, I disagree – having access to a range of options is valuable because it enables future people to live autonomous lives. This means we have reasons to pass on diverse options independently of whether we think those options valuable or not.

This response, however, may not fully address the worry. As O'Neill recognises, we cannot choose to only pass on those things that are needed for the basic needs of future people. By consciously choosing to pass anything else on, even if we do not choose merely on the basis of what we value, we indicate that whatever we choose is worth preserving. In the process, we engage in a dialogue with future generations about what is valuable. The further worry that then arises is that this

dialogue is objectionably one-sided and leads to a kind of intergenerational domination. After all, we can control what goods future people have available to them in a way that they cannot. Dimensions 4 and 5 are meant to alleviate these worries, making this dialogue less objectionable. Still, it is important not to exclusively focus on basic needs. Decisions on what to leave future generations are unavoidable. We would be acting wrongly if we only left future generations what they need to satisfy their basic needs. At the same time, especially in the context of climate change, we cannot leave them everything we have, regardless of whether we think it valuable or not.

Dimension 4, *Indeterminacy,* concerns how we ought to evaluate the intentions we have when we make decisions about what to leave, and when we make other decisions that impact future generations. It is a serious presumptive wrong to try to intentionally substitute my judgement for that of another. If I try to intentionally determine another person's conception of the good this is particularly objectionable, as I am not taking seriously their position as an independent moral agent. This dimension should make us think twice in particularly egregious autonomy-violating situations, but it certainly does not cover every case in which we might influence what future people value or their conceptions of the good.

Indeed, we will unavoidably influence the conceptions of the good of future people, and it is often not clear that this is objectionable on autonomy-related grounds. As people are born into our society, what they value and what conceptions of the good they form is, to a significant extent, determined by how we have designed our societies and our cultures. We have every right to shape our societies in this way. We might, for example, want to build a society that is just by our standards of justice, or one that celebrates virtues we think important. This will shape what future people value, but there is surely no meaningfully objectionable violation of their autonomy going on here. There are many situations in which we make decisions that promote what we think is valuable now, but in the process foreseeably make future lives worse. These choices are often impermissible. In other cases, however, we promote what we think is valuable, but without any

reliable knowledge of whether this will be good or bad for the things future people will value. This is much more likely to be permissible.

We can also make sure that, as we for example build a just society and thereby close off options we deem unjust, we leave future generations the tools that they need to make their own choices and, if they want to, reverse ones made by us. We can, for example, leave robust democratic institutions, and a civil society that preserves a wide array of lifestyles, interests, and commitments, including ones that are unpopular now.

The final dimension, *Minimal direction,* sketches the limits of these permissions. Unlike *Indeterminacy* it is not, generally, relevant in cases where we shape the societies and cultures we live in. It is not concerned with intentional attempts to determine the conceptions of the good of future people. Instead, it applies in a range of situations in which we are deciding what to preserve and bequeath future generations. In such situations, we should minimise the extent to which what we preserve is determined by what we already value. We should not, generally, pass things on merely because we value them, unless we have good reasons to believe that future people will value them too.

All this does not mean that we are all, across generations, entitled to live fully autonomous lives, or that we can never be treated in ways that fall short on any of the above dimensions. This would be impossible. As Maria Paola Ferretti (2023, p. 117) observes, if we want to increase the freedom that future people can exercise then this will mean sacrifices of freedom on our part. The same applies to autonomy, of which the kind of social freedom Ferretti describes is a part. We can only preserve options for future generations by restricting the options we can exercise, and we can only protect their right to shape their own conceptions of the good by not using those of our options that would interfere with that right. At best, we have a pro tanto right to autonomy that can be overridden by the more pressing autonomy claims of others, and that therefore must be consistent, at least as a baseline, with the like autonomy claims of people alive now and in the future.

The conception of autonomy I have sketched in this section must be both binary, in the sense that there is a threshold that a life must meet in order to be autonomous at all, and scalar, in the sense that above this threshold more options will generally make a life more autonomous. Ferretti's view is that freedom, given that we can distribute it across people and generations, must be a scalar notion throughout. This may be true of freedom, but it is not the full story when it comes to autonomy. This is because what matters most for future people as moral beings, as it does for us today, is to be able to live autonomous lives, as opposed to non-autonomous ones. In this sense, autonomy is partially a binary notion. Condemning someone to a non-autonomous life is a more significant wrong than merely reducing their degree of freedom. Freedom in the sense of options is partially constitutive of autonomy, and having more options can make you more autonomous, at least if they make you more free. Partially, however, autonomy is also a binary notion. This is because we need some minimum options to be able to call our lives autonomous at all, and we need to, at some level, be authors of a life plan. Someone like Joseph Raz' (2009) *Man in the Pit,* who is stuck in a pit and can make no meaningful choices, is not autonomous at all, and neither is someone who adopts a conception of the good entirely as a result of manipulation by someone else. It is very important that we do not condemn future people to these fates. Ensuring that future people can live lives that we can call autonomous is much more important than seeking to make anyone's life maximally autonomous.

In the final section of this chapter I will explore how we avoid condemning people to non-autonomous lives, and how the above dimensions may be appropriately balanced against one another. In that section I look for a principle that is balanced and does well on all these dimensions. Before that, however, I must say something about what I mean when I say future people have autonomy rights in the first place, and something about how we ought to conceptualise those rights.

III - Future rights and trusteeship

At this point readers may be forgiven for thinking that I am getting ahead of myself. I have sketched the content, or at least the outlines, of some specific and important autonomy rights and some dimensions derived from them that we are meant to judge our decisions along. I have not, however, explained why future people have rights in the first place. I have said that they have various interests, but can this be true, given that they do not even exist yet?

The problem here is just that: future people do not exist. One implication of Derek Parfit's (1986) non-identity problem is that, whatever decision we make and whatever future-affecting policy we adopt will change the identity of the people who live in the future. If we do something, then, that appears to infringe on the autonomy of future people, we are in fact treating the future people who end up existing in the best possible way. The people who exist in the future are beneficiaries of our seemingly rights-violating act. Had we acted otherwise, they would never have existed and some entirely different set of people would have existed instead.

With respect to any future person who complains about our actions, we can reply that there was no action we could have performed in which they were better off. If we were choosing with the explicit goal of making that person as well off as we could, morality would have required us to act as we in fact did. Given our action was optimific for that person, it is very hard to see how we could have violated their rights.

Whose rights, then, are we violating? My answer to this question will not name specific individuals but instead involves roles or points of view that future people will inhabit. I will propose that there is a way of thinking about these rights that avoids the non-identity problem, and allows us to see how the rights of future people work and can be protected, regardless of who those people are. Key here is the fact that although we cannot know the identity of future people, we can know what interests future people will have distributed among them. I will consider two ways of getting around this impasse; I prefer the latter.

The first way of doing this is to conceive of humanity or some part thereof as a collective agent with a stable identity across generations, collective interests, and collective rights. This makes identifying the holders of rights easier, whether they be nations, smaller cross-generational communities, or even humanity at large. Personal autonomy is a poor candidate for this role, but there could for example be collective sustainability rights that ensure that the collective can always live in a liveable world.[24] We could then say that, through our actions, we are wrongfully violating these collective rights, even if the effects of our violations will only become visible in the future. It is not clear, however, that a rights-holder can objectionably violate their own rights.[25] Whether they can or not is the subject of considerable debate in discussions of paternalism, because if we intervene to stop an actor from violating their own rights this seems to be a textbook case of *objectionable* paternalism. While there may be some cases where this is permissible and where someone can impermissibly violate their own rights (say by selling themselves into slavery) these cases do not seem particularly widespread. Moreover, personal autonomy is difficult to conceptualise as a collective right, and the extent of collective rights overall is controversial. As such I will not be pursuing this route.

We must, instead, maintain that the rights-holders here are future people who cannot be identified because they are not yet born. This makes the non-identity problem more difficult to avoid. It can, however, be rendered irrelevant for our decision-making, when that decision-making affects the core interests of future people. I propose to do this by assigning autonomy rights not to specific future people, but to whoever occupies roles that future people will inhabit. Whoever assumes the role of existing in a certain time and place in the future, with some specified conception of the good, will have the interests and rights discussed in the previous section. We ought to prepare for their assumption of that role by not violating those rights. Rights attach to these roles, and are held

[24] Jonathan Kwan (2025) provides an account of a collective duty of sustainability that is similar to this approach.
[25] See Schofield (2021) for a defence of the view that they can.

by whoever comes to occupy them. A specific future individual cannot say that we have made them worse off. They can, however, say this: "you knew someone like me would come along, and you did not act as you ought to have done given that knowledge".

To make further sense of how this approach gives rise to duties, we can for example, as Rahul Kumar (2018) does from a contractualist perspective, consider what anyone who finds themselves in a particular role in the future can reasonably expect of those of us who are alive today. To find the right policy to pursue we must assess its implications from various relevant points of view. These roles that future people will inhabit are not specific individuals, but they are capable of providing such relevant points of view. This is because the contractualist evaluation of potential courses of action depends not on what particular individuals can expect of others' conduct, but on what individuals in particular situations can expect. The relevant points of view "are not those of actual, particular individuals, but rather representative individual standpoints." (Kumar, 2018, p. 248) These points of view are characterised by generic information about what people in that position typically have reason to want. Autonomy is clearly one thing that people generically have reason to want. As such, once we assess the situation from the point of view of whichever individual ends up in a particular role or position in the future we can readily see how important it is that their autonomy be secured. Future people have autonomy rights, because they are based on principles that cannot be reasonably rejected from any relevant point of view.

Similarly, we could interpret this solution through the lens of Caspar Hare's (2007) *de dicto* approach to avoiding the non-identity problem. On this approach, we know that certain lives will be lived, and certain roles inhabited, in the future, and we have reason to want that those lives be better rather than worse, regardless of which individual inhabits each role. Hare, like Kumar, makes use of the fact that two different people who might have been born depending on which policy is adopted can fall under the same description. All their relevant features (for the purposes of determining how we ought to treat them) are the same, so the fact that their identities differ is

irrelevant. In particular, we know that whoever exists in the future will have a core interest in autonomy, one that gives rise to a bundle of rights. We can explain why it is wrong to undermine the autonomy of future people, without finding any named, individual victim.

I will now seek to explain what kinds of rights these are, given that the people who will enjoy them do not yet exist. I propose that we ought to think of ourselves as holding the autonomy rights of future people in trust. As Joel Feinberg (1992, p. 76ff) describes them, rights-in-trust are autonomy rights attributed to those who are not yet capable of exercising them, so they are "*saved*" until later. These rights, though they cannot be exercised yet, can be violated "in advance", before they can be exercised. Violations now guarantee that, once the rights-holder is in a position to exercise the right, they will wrongly be unable to do so. Feinberg describes these rights in the context of not-yet-autonomous children, but future people are in much the same position. We know that they will, in the future, have interests in autonomy, and we know that we can frustrate those interests now. We find ourselves in the position of parents who cannot yet divine what our children will come to value, so we must seek to instead give them what Feinberg calls an "open future", where they can shape their own conception of the good and then pursue it.

Children's autonomy rights often clash with the rights of their parents, and similarly there will be clashes between the autonomy rights of future people and the rights of people who are alive now. Thinking of ourselves as trustees of the rights of future people can help us adjudicate these conflicts. Trusteeship involves the preservation, not the exercise, of rights; we ought, then, to avoid making decisions on behalf of future people, both in terms of shaping their conceptions of the good and limiting their options to whatever we divine they might value. Instead, we should prioritise postponing irreversible commitments. There are particularly difficult choices that come into play in questions of sustainability here. People today can, and indeed often seem to, pursue ways of life and subscribe to conceptions of the good that, because they are in some sense unsustainable, are likely to undermine the autonomy rights of future people. The next section

explores our options in such cases, and I will look for a principle that we can use to evaluate our actions for their effects on future autonomy that does well along the dimensions identified in the previous section while also adequately reflecting our position as trustees.

Even if future people have autonomy rights of the kind I have described here, it may seem that we, nevertheless, have every justification to act paternalistically towards them by leaving them only what we consider valuable. This is because while paternalistic acts involve violations of autonomy they can, in some cases, be permissible. Sagoff's (2008) argument, discussed above, is a version of this view. Given that we determine future people's preferences anyway, he argues, we should make them value things we know to be valuable. Feinberg (1971) suggests that the paternalistic approach can become permissible when the person for whom we are acting is in some way not competent. Future people may seem to be paradigm examples of people who are not competent: after all, they do not yet exist and can therefore do little to secure their autonomy. They cannot, for example, ensure that the things they need and value are not lost to climate change. Given that we do not know what they will value we will also struggle to do this, but we are at least in a position to try to do so, as trustees of their rights.

To some extent we must be permitted to make choices for future people. It is unavoidable that the options available to them, as well as the factors that will influence the conceptions of the good they develop, will change before they are born. Those of us who are alive now will unavoidably influence both. At the same time, future generations do not remain indisposed forever. One day, hopefully, they will be born. Once they come of age they will be able to exercise their autonomy rights. Conceiving of these rights as rights-in-trust helps us make sense of this situation and make permissible choices.

IV - The Trusteeship Principle

It is now time to identify a principle by which we can judge actions, and in particular public policies, that are likely to affect the autonomy of future people. This should effectively protect the

autonomy of future people while reflecting our role as trustees of their rights. Recall that, in section II, I identified 5 dimensions along which we ought to evaluate the effects of our actions on the autonomy rights of future people. Our decisions should

1. *Basic needs:* Leave future people the things they need to satisfy their basic needs and
2. *Sufficient options:* Sufficient potentially meaningful options, such that they are able to make meaningful choices about their lives, and
3. *Diversity:* Such that they are able to pursue a diverse range of conceptions of the good while
4. *Indeterminacy:* Refraining from attempts to determine future persons' conceptions of the good and while
5. *Minimal direction:* Making choices about how much and what to preserve such that the conceptions of the good of future people are steered in the direction of what we now value as little as possible as a result of such choices.

We should pursue policies, I suggest, that preserve and promote the autonomy of future people. It is useful, then, to identify some principle or principles which we can use to identify policies and actions that are appropriately autonomy-promoting. This principle should also reflect our position as trustees of the autonomy rights of future people.

In part, I am looking for an autonomy-preserving principle of sustainability, where sustainability is the idea that there is some X, the value of which needs to be preserved, inasmuch as we can, into the indefinite future (Barry, 1999, p. 101). Ferretti (2023, p. 179) conceives of sustainable policies as ways of distributing freedom across generations by imposing constraints on the actions of present people. On the account of autonomy defended in section II, this kind of freedom-related X consists of those options that enable us to do well on dimensions 1 through 3. In addition to this notion of sustainability, however, respect for autonomy also requires us to, inasmuch as we

can, ensure that future people can form their own conceptions of the good. Dimensions 4 and 5 are meant to measure the ability of any principle to do this.[26]

Normally, our policy choices only create risks of harm to future people, rather than causing them harm directly. Our actions cause *statistical* deaths and *statistical* losses of autonomy, because we are causing risks to a great number of people rather than harming specific people. This means that the principles we are looking for must be precautionary principles, which urge against making risky decisions where outcomes are uncertain (such as decisions that are likely to lead to future autonomy violations) (Steel, 2018).

The principle I will be defending is the *Trusteeship Principle*. This principle successfully safeguards the autonomy of future people across all five dimensions, while also reflecting our position as trustees of the rights of future people. We should use this principle to evaluate our actions and our policies for their effects on the autonomy of future people. I begin by simply stating it.

> *The Trusteeship Principle:* We should adopt a strategy to make the worst-off generation as well-off as possible in terms of autonomy as long as this does not lead to excessive autonomy costs for the current generation, with the excessive level decided in each case by the current generation in their role as trustees of the autonomy rights of future generations.

I will show why this principle does well on all five dimensions, and why we ought to choose it, by first presenting and rejecting some other candidate principles that fail on at least one dimension.

[26] We could, and plausibly should, also formulate principles that tell us how we ought to impact future population sizes. How large future populations are will have a significant impact on the autonomy of future people. We can also, both through our individual choices and through policy measures, impact future population sizes. How we ought to do so is therefore an important question. It is also important to investigate how we might do this permissibly, and whether there is anything morally dubious about intentionally influencing population sizes far into the future. The conclusions arrived at through such an investigation may change or supplement the principle arrived at later in this section. There is no hope, however, of an adequate treatment of these questions of population ethics in the space I have available in this thesis. This is why I have assumed exogenous population sizes throughout.

This allows me to gradually derive the Trusteeship Principle in response to the shortcomings of the other principles.

To do this, I will first introduce some other candidate principles. There are, already, some useful suggestions in the philosophical literature around sustainability and climate change, something that is explained by the fact that these areas cover many of the most significant future-affecting decisions we are likely to be faced with today. Most simply, we could pursue

> *Willingness to pay:* We should act in a way that maximises utility across time (future utility discounted), with utility measured by a willingness to pay measure.

This approach would have us use a standard consequentialist cost-benefit analysis to decide how much to leave for future generations. We would require some method for divining how much future people would be willing to pay to avoid certain losses. In the case of basic goods needed for survival we could perhaps extrapolate from how much we are willing to pay for them now. In the case of other goods, however, we may simply need to assume that future people value the same things that we do. In the presence of uncertainty, and if future people are even minimally risk-averse, this principle automatically becomes precautionary; if there is great uncertainty about future conditions, then it favours greater transfers of resources to future generations (Fleurbaey et al., 2019, p. 97). This is because if we do not know what, for example, the climate will be like in the future, and we are risk-averse, then we will leave more resources to future people so they can meet their basic needs even in worse climate scenarios. This feature could well be beneficial for leaving future people the goods they need.

The WTP approach may plausibly do well in securing *Basic needs,* particularly if discount rates are low, but standard arguments against utilitarianism may make it doubtful whether this approach can avoid sacrificing the autonomy rights of some in favour of superfluous goods for others, at least on some versions of this approach (see Rawls, 1999, p. 19ff). The dimension of *Sufficient options* may also be neglected, at least if an autonomous life requires incommensurable goods –

autonomy properly understood may require us to abandon the fungibility of different goods that the WTP approach relies upon (Barry, 1999, p. 102). Autonomy may also require access to relational goods such as love, which in turn depend instrumentally on *Sufficient options,* and which people tend to be reluctant or unable to put a price on (Nedelsky, 1989).[27]

The shortcoming I want to focus on, however, is how this approach ignores any dimensions related to the right of future people to form their own conceptions of the good, such as *Indeterminacy* and *Minimal direction.* As pointed out by Barry and discussed above, if preferences (which WTP relies upon) are all that matters, then it may be easiest to manipulate future people so they have preferences that can easily be met – perhaps we want future people to value plastic trees rather than real ones, or to enjoy gondola trips down artificial rivers. The WTP approach cannot condemn this, and therefore ignores both *Indeterminacy* and *Minimal direction.*

This can be avoided by principles that do not exclusively rely on subjective preferences. One such principle is proposed by David Wiggins:

> *Pushkin principle*:[28] We should not risk that which is (or will be) necessary to human life in the hope of acquiring the superfluous (Wiggins, 2006, p. 50).

This principle rests on a strong separation between vital and superfluous needs, as discussed in section II above. It is a more clearly defined and stronger variation of the widely adopted Brundtland Report definition of sustainable development as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987). Wiggins provides a clear way of prioritising competing needs: basic needs, whether present or future, should always be met first. This means the principle does well on *Basic needs,* but is liable to neglect the requirements of

[27] I discuss these problems at greater length in chapter 1.
[28] This name is suggested not by Wiggins but by O'Neill (2022). In formulating this principle Wiggins is inspired by a quotation from Pushkin's *Queen of Spades.*

Sufficient options and *Diversity*. In effect, we risk leaving future generations in the position of Raz' (2009, p. 373) *Man in the Pit,* who falls into a pit and is stuck there for the rest of his life. He has his basic needs met and does not suffer, but his "choices are confined to whether to eat now or a little later, whether to sleep now or a little later, whether to scratch his left ear or not". He is not autonomous, because he has nowhere near *Sufficient options*. We may also need to sacrifice ourselves in terms of *Sufficient options* and *Diversity* in order to meet the basic needs of future people, turning us rather than them into the *Man in the Pit*. This may not be something that we can reasonably be asked to do, for we would be sacrificing our status as autonomous people. We must, then, be willing to risk that some *Basic needs* go unmet, so that the *Basic needs* dimension cannot have lexical priority.

Even if we accept the axiom of cross-generational basic equality, and think that future people are our equals in just the same way that people alive now are, we can permissibly risk the basic needs of some people. This is, in fact, something we unavoidably do all the time. We often do not adopt precautionary principles even when we know that our actions will cause statistical deaths. For instance, we do not ban driving even though we know that traffic kills people, because the probability of any particular person dying or being seriously hurt is judged to be low enough. What we perhaps cannot permissibly do is sacrifice the *Basic needs* of some particular person for the *Sufficient options* of others, but this kind of sacrifice must be distinct from the act of merely risking. To sacrifice the very hope of having fully autonomous lives in the world so that all can have their *Basic needs* met is an unacceptable conclusion.

Instead of focusing on only basic needs as the currency used in the principle, we do better if we adopt a currency that can encompass a broader range of goods that are necessary for autonomy. Here is a more promising approach that does so:

> *The Rawlsian Principle* (RP)*:* We should adopt a strategy to make the worst-off group of people as well-off as possible in autonomy terms.[29]

For Rawls, the relevant currency is primary goods: we should ensure that we maximise the primary goods allocated to the worst off. We can adapt the principle so that the currency is autonomy (or autonomous lives across each generation) instead. This means we should adopt a strategy such that we maximise the autonomy of the worst-off group of people. This principle avoids the issues faced by the *Pushkin principle* by focusing on a broader range of goods necessary for autonomy, rather than those needed to satisfy our basic needs, as *Pushkin* would have us do. This principle also focuses on groups, rather then individuals. Generations (as in Rawls' original account) are likely to be the most appropriate groups when this principle is applied – it would then call on us to be indifferent about where autonomy gains fall as long as the worst-off generation is as well-off as possible. In practice this could mean that we should prioritise meeting the *Basic needs* of the median person within the least advantaged generation, but we should not necessarily avoid all actions that cause statistical deaths or statistical frustrations of basic needs within future generations. Focusing on the autonomy of the median person in each generation also means that we do not need to make great sacrifices in order to safeguard the autonomy of very unlucky members of the worst-off generation. By not taking the worst-off person as the yardstick, and by not focusing on basic needs alone, we avoid the problems faced by the *Pushkin principle*.

The *Rawlsian principle*, however, could still make us sacrifice our autonomy entirely. This is because it is not unreasonable to believe that, given how many future generations there are likely to be, there will eventually come one the basic needs of which cannot be met, for whatever reason, unless we subject ourselves and perhaps all intervening generations to a non-autonomous life in the manner of the *Man in the Pit*. This would happen, for example, if it is likely that some future

[29] It should be noted that this is not Rawls' view of intergenerational justice. Instead, this principle mirrors his view of how primary goods should be distributed within a generation.

generation faces a calamity that will frustrate the basic needs of the median member unless that generation has access to enormous resource piles.

We can avoid this problem by adopting

> *The non-excessive costs condition:* The costs to the autonomy of the present generation must not be excessive.

The problem then, naturally, is to define the level of excessive cost. As Henry Shue (2014, p. 269) suggests, measures that leave us with no regrets clearly do not carry excessive costs. The measures contemplated here, if they require us to sacrifice our autonomous life in a fundamental way, are the opposite – they are guaranteed to leave us with profound regret. We must decide whether it is always excessive to ask someone to forgo an autonomous life, even if the consequences of not doing so mean that we condemn others to that fate. We must decide if we can demand this extreme level of unselfishness of any agent. Moreover, we must keep in mind that if we deprive ourselves of our autonomy we are likely to render ourselves unable to adequately carry out our role as trustees of the rights of future people.[30]

The level of excessive cost would ideally be determined through some form of intergenerational deliberation. That not being possible, given that future generations do not yet exist, we must instead deliberate within our own generation, but such that we keep our relationship to future generations in mind. In section III I suggested that the relevant role we have in relation to future people is that of trustee of their autonomy rights. We must then, as trustees, deliberate about the relative weights of our rights and the rights we hold in trust. This deliberation must also always

[30] While the non-excessive costs condition prevents excessive self-sacrifice of the current generation, we might think that it still allows the present generation to sacrifice all generations other than theirs for a tiny autonomy gain for the worst-off generation. This is not the case. If generation g makes a choice that sacrifices generation g + 1 this will be corrected one generation later, when g + 1 becomes the current generation and is guided by the non-excessive costs condition. They will then use up more resources than g budgeted for them (as will all following generations when it is their turn). Generation g should be aware of this when they decide the excessive cost level for their generation. This is how the non-excessive costs condition prevents some of the problems that lexical principles tend to have – in essence, the resulting principle is no longer lexical.

take place in a context of uncertainty about future outcomes, which will colour our thinking in each case. The answers we arrive at will depend on very fundamental views about how we ought to relate to one another and to the world, and how seriously we take the roles we must assume. The answer may ultimately also depend on whether we think there are any relevant agent-centred prerogatives – whether these exist must be beyond the scope of this thesis. If there are no such prerogatives, however, then there may be no finite cost that is excessive.

This deliberation could be institutionalised in various ways. One possibility is to have specific people whose responsibility it is to represent the interests of future people. For example, Welsh public bodies have a legal duty to respect the interests of future people, and the Future Generations Commissioner for Wales is empowered to hold them to account and to advise the Welsh Government on issues pertaining to sustainable development and the interests of future people (Davies, 2017). Simon Caney (2022) has evaluated a range of proposals for institutions that are meant to guard the interests of future people, including citizens' assemblies, commissioners, envoys and agencies. For public deliberation and decision-making around sustainability to effectively account for the autonomy rights of future people those tasked with representing them must almost certainly have powers that go beyond the merely advisory. They must also adopt a suitably wide view of the rights and interests of future people, one that incorporates not just welfare-related interests but interests in a having diverse options too. Any institution like this must also adopt an anti-paternalist attitude, and combat efforts to shape future conceptions of the good.

We now have a satisfactory principle to guide our future-affecting decision-making such that we preserve and promote the autonomy of future people:

> *The Trusteeship Principle:* We should adopt a strategy to make the worst-off generation as well-off as possible in autonomy terms as long as this does not lead to excessive autonomy costs for the current generation, with the excessive level decided in each case by the current generation in their role as trustees of the autonomy rights of future generations.

This principle does well on the dimensions meant to preserve the ability of future people to form their conceptions of the good, namely *Indeterminacy* and *Minimal direction,* because it does not make reference to subjective valuations in the manner of WTP. By taking the goods needed for autonomy as its currency, as opposed to just those needed for the satisfaction of basic needs, it avoids making excessive sacrifices of autonomy in violation of *Sufficient options* and *Diversity* in the name of avoiding statistical frustrations of *Basic needs.* It improves upon RP by adding the *Non-excessive costs condition*, which also appropriately reflects our role as trustees of the autonomy rights of future people. If there is some cost that is excessive and the current generation is not the worst-off one, then the principle is no longer lexical in the way RP is.

V - Conclusion

Ultimately, autonomy is likely to be only one value out of many. Other values should also guide us when we make future-affecting decisions. It is plausible to think, however, that autonomy, as constitutive or prerequisite of a certain kind of personhood, is necessary for the achievement of many, if not all, human values. At any rate, we should consider the preservation and promotion of the autonomy of future generations important, for it will enable them to live lives that we and they can recognise as good.

The *Trusteeship Principle*, I have argued, can enable us to protect and promote future autonomy. It reaches a good balance between the different aspects of autonomy that matter, and it can guard future people against different kinds of violations of their autonomy. It also reflects the role of the current generation. Time's arrow means that we can never deliberate with or affect future generations in a truly reciprocal manner. We should not deny this nor seek to escape the power this grants us. Instead, we should, with some humility, accept the particular position we are in and use it with care and an awareness of the importance of our actions. Thinking of ourselves as trustees of the autonomy rights of future generations helps here, and can put us on the road to a more sustainable way of making choices.

In this chapter, I have argued that to preserve the autonomy of future people we should allow them to, as much as is possible, form their own conceptions of the good. In addition to this, however, we need to leave them the options they need to pursue that conception of the good. The question then is how we can know what to preserve, given that we do not know what future people will value. One of the objectives of the next chapter is to provide a more detailed answer to this question.

In the next chapter, then, my focus remains firmly on what we want the future to look like. We want to make sure future people can live autonomous lives, but there are also other kinds of valuable things that we have reason to want to be present in the world long after we are gone. As I will now argue, we have strong reasons to want this world to contain diverse kinds of value, and diverse valuable things.

Chapter 4

Option value and the preservation of diversity

I - Introduction

One day, we might hope, we will no longer be suffering from the direct effects of dangerous anthropogenic changes to the climate. Global temperature variation may be reduced to a manageable level, of the kind that humans have enjoyed for most of our history.[31] Before this happens, humans will have suffered a lot, and a wide range of valuable things will have been lost. Humans, non-human animals and other organisms will have been killed and many species will have gone extinct. Landscapes will have been despoiled, ways of life, stories and pieces of art forgotten. Others will remain. When we wake up in this world, what would we want it to look like?

In this chapter, I present and defend one desirable feature of such a world, and an approach we can adopt today to make that world more likely. I argue that we should aim to preserve a diverse range of valuable and potentially valuable things, whether they be species, landscapes, ways of life or places. To be more precise, I argue that we should aim to preserve types of things that are diverse across a range of potentially value-conferring properties. We should not just preserve valuable species, but valuable landscapes too – and among landscapes, we should not just preserve beautiful chalk cliffs but windswept steppes too. The White Cliffs of Dover and the Hungarian Puszta are instantiations of very different, but potentially valuable types of landscape. We have reasons to preserve instantiations of both of these potentially valuable types.

My arguments for this conclusion depend on the fact that we do not know what will be valuable in the future. We are able to identify things that are very valuable to us now, and their value gives us strong reasons to try to preserve them – many of these things, we tend to assume, will be

[31] The latest IPCC report (IPCC, 2023c) suggests that under low and very low emissions scenarios we could reach such a stable point before 2100. Higher emissions scenarios lead to more pessimistic forecasts.

valuable to future people too. I will argue, however, that we should also endeavour to preserve things that are not especially valuable to us now, because they may be valuable to future people. Identifying things that will be valuable to future people, however, is difficult. It may be that future people find the White Cliffs of Dover immensely valuable, and the Puszta worthless; alternatively, the Puszta may be what best conforms to future aesthetic tastes. Chalk may become a commodity with exceptionally high use value, or it may become worthless or even dangerous. These are things we cannot reliably predict. The appropriate response to these uncertainties, I argue, involves the preservation of things that have a diverse range of potentially valuable properties. Our uncertainty about future value makes preserving a diversity of options instrumentally valuable, because it enables future people to live according to their conceptions of the good.

In making this argument I make use of the concept of option value, which I take from investment theory. This is value that arises from the ability to delay an irreversible investment decision. I argue that there is often option value in delaying the loss of something that could be valuable in the future. Moreover, I argue that dominant approaches in economics and biodiversity preservation risk undercounting this value, thereby allowing too many losses.

I begin by introducing the concept of option value. I explain its role in informing irreversible decisions where the value of options may change in the future. I will then, in section III, apply this framework to decisions regarding the preservation of potentially valuable things, and highlight three key ways in which the option value of delaying irreversible losses can be underestimated. I focus especially on option value that arises from the fact that we do not know what future people will value. Section IV considers how option value can inform decisions about what to preserve, and what kinds of diversity we ought to leave for future people. Section V concludes.

II - Investments and option value

Climate change will, in the short and medium term, result in the loss of many things. Some of these things are very valuable now (and we know them to be valuable) and we should therefore do

what we can to prevent the loss at least of the most valuable ones. We also have especially strong reasons to preserve those things that have irreplaceable value, as I argued in chapter 2. However, climate change could also lead to the loss of things that are not of especially great value now, but could become so in the future, when other valuers exist. These could include raw materials needed in future technological innovations, or landscapes that conform to future aesthetic preferences.

In this chapter, I focus on where we can find, and how we can avoid losing, value that arises from the ability to delay an irreversible decision. Such value is often called option value. This is value that is realised when new information may emerge or uncertainty may reduce following a delayed decision. More specifically, these concepts describe the value that is added to an option once the possibility of the future emergence of more information is taken into account.[32]

I will use the concept of option value to make better sense of the choices we face when we choose what to preserve in these conditions of uncertainty. In particular, I will argue that what the concept of option value shows is that we need to take the value of postponing irreversible decisions about what to preserve seriously, and factor this into our decision-making. As I will argue later in this chapter, once we take option value seriously this helps us think more thoroughly and carefully about the value of diversity, and about our choices in the face of climate change.

I take the terminology of option value from investment theory. To make an investment, generally, is to incur costs now in order to reap benefits later – you may, for example, choose to pursue a costly degree programme now, in order to benefit from higher earnings later. Whether you should commit to this investment or not depends on its net present value (NPV). Assuming you are risk neutral, this value is the sum of all expected costs and benefits associated with the investment,

[32] This concept is closely connected to another possibly separate concept: the value of having options one is not making use of, in case one would like to make use of them in the future (this is sometimes referred to a quasi-option value). These concepts are very closely related – in fact, Fisher (2000) argues that they are equivalent. Regardless, many of the cases I discuss will clearly involve both kinds of value, but in order to maintain clarity and focus I will here consider them with my focus exclusively on the option value that comes from delaying a decision in the presence of uncertainty.

with future costs and benefits discounted to their present value. This discounting is necessary because if you do not use your resources for anything else, you can earn interest by making them temporarily available to others. The opportunity cost of not doing this needs to be taken into account when evaluating an investment. In practice, this means that if others were willing to pay you a lot of interest to borrow the money you would have used for the degree, then this will make the degree less attractive as an investment.[33] The neoclassical Discounted Cash Flow (DCF) method tells us that if the NPV is greater than zero, then the rational thing to do is to invest (Bernanke, 1983). If the sum of all discounted costs and benefits of pursuing your degree is positive, then the rational thing to do is to pursue it, unless there is some competing investment (such as joining a seminary or becoming a hermit) that has an even greater NPV.[34] The relevant costs and benefits here are not just economic – benefits may also include the value of your enjoyment of your studies, and costs may include the disvalue of the embarrassment you feel at being a graduate student.

This approach misses at least one set of crucial considerations. Proponents of the real options approach, developed as an alternative to DCF and systematised and popularised by Avinash Dixit and Robert Pindyck (1994) in particular, argue that the usual neoclassical DCF approach described above fails to account for the value of *delaying* an investment decision. Suppose that you are considering whether to accept an offer to pursue a graduate degree in philosophy. You could accept and pay tuition fees now, or you could wait until the registration deadline, which is still two

[33] This means that some things, which can not be made available to others in capital markets (and which therefore cannot earn interest) should not have their future value discounted. This includes things that, on a pluralist conception of value, cannot be valued in monetary terms. With the exception of such things, I ask the reader to take it as read that all future (dis)value I discuss in this chapter is discounted by some long-run interest rate, even where I do not mention it explicitly.

[34] It is possible to avoid separately comparing your investment with alternatives by incorporating the NPV of the best alternative as an opportunity cost into the NPV calculation for your original investment. In this example, assuming joining a seminary is the best alternative to pursuing the degree, this would mean adding a cost equal to the NPV of joining a seminary into your original cost-benefit calculation that you carry out when determining the NPV of pursuing the degree. As long as joining the seminary is an inferior option to the degree the NPV of the degree will remain positive after this operation. This is the approach I will adopt in sections III, IV, and V of this chapter.

weeks away. The government's budget statement, however, is a week away, and there are rumours that they may announce a targeted 20% cut to the salaries of all tenured philosophers. If this were to happen, then it would cut your expected future earnings so much that it would render the NPV of your investment negative. Clearly it is rational for you to delay your decision, even though the NPV now (prior to the possible government announcement) is positive. Adopting the DCF approach here would lead you to make an unwise investment.

This option value of delaying an investment only arises in cases where the investment is at least partially irreversible - once I have paid my tuition fees, the university will not refund me (see Bloom, 2014). Option value also depends on the ability to wait. In my example, it arises because the registration deadline is still two weeks away. Finally, option value also only arises when it is possible that news may emerge that could affect the value of the investment (in this case, the possible government announcement).

Ben Bernanke (1983) has shown that what really matters for option value is bad, rather than good news for the value of the investment. If, counterfactually, it was rumoured that the government might raise the salaries of tenured philosophers, then this would not change my investment decision today. If the NPV today (a week before the budget) is positive, then I will invest now. If it is negative, then I will not. If salaries are raised in a week I may choose to invest then, but I have made no decision to postpone an investment I would otherwise make. Only the possibility of bad news can justify a postponement when the NPV is positive.

The possibility of bad news is not always enough to justify waiting, because in many cases waiting comes with costs too. Imagine that, if I decide not to begin graduate studies, I can immediately commit to and start a job. In this case, by delaying my decision, I lose two weeks of earnings. Whether I should delay my decision here depends on the probability of bad news, the expected value of the bad news, and on the cost of waiting. Investing immediately, as opposed to postponing the decision, is justified only when the NPV is greater than the option value of waiting minus the

cost of waiting. The option value, meanwhile, depends on the probability of bad news and the magnitude of the effect that such bad news would have on the value of the investment.

In this chapter I will invert the usual option value framework, so that the value of an investment consists in something bad it helps us avoid, and any information that reduces this badness is (somewhat counterintuitively) bad news for the investment. In this I follow Susanne Burri (2021), who does much the same thing in a paper on the option value of life. To Burri, death is an investment a rational person may want to make in case continuing to live would diminish the overall value of their life. Staying alive, however, can have positive option value: choosing to die is irreversible, the decision can usually be postponed, and if you remain alive you may receive news about, for example, how serious the disease you suffer from really is. What is particularly interesting in Burri's treatment is what counts as bad news for the investment in death. The value of the investment comes from the badness it helps us avoid. Any information that reduces this badness, therefore, is in fact bad news for your putative investment in death. Burri uses this framework to defend the paternalistic prevention of irrational suicides in cases where "bad news" for the investment in death, such as a recovery from illness, is possible.

I will now do something similar. In this chapter, as in the thesis more broadly, I am interested in what kinds of things we should preserve from irreversible loss to climate change and similar calamities. The investment that I will consider here, however, is the investment in the destruction or loss of a potentially valuable thing.

For simplicity, imagine that we need to decide whether to allow the loss of a species of tree to the effects of climate change. The investment, here, is to accept the loss of the tree. Costs of the investment include the value that the species has now, and the discounted value that it is expected to have in the future.[35] Benefits of the investment include savings equal to the cost of conservation

[35] The future value must be discounted, because if we spend money on conserving the species we forgo interest we could have gained by making the money available to capital markets instead.

efforts now and expected ones in the future, again discounting the future ones. The benefits also include avoided opportunity costs – if we lose this species, we may be able to save something else instead. The net present value of the investment is the sum of all these costs and benefits.

There is, however, option value in postponing this irreversible loss. This value exists because the loss is irreversible, because it can be delayed (at some cost) and because we may receive bad news in the future. In the next section I will be outlining different kinds of bad news that might be expected in the future. To reiterate, all of this news is bad for the decision to allow the loss of the tree species. It is likely to strike us as good news in other ways.

III – Future valuers and other sources of bad news

I will use option value to highlight a range of sources of bad news for the decision to allow irreversible losses to climate change. All of these give rise to option value, and mean we have further reasons to postpone irreversible decisions about which losses to allow. Some of these sources of bad news are already accounted for, for example, in the field of biodiversity conservation or climate and environmental economics. Others are neglected. All these sources of bad news should be taken into account if we are to avoid investing in losses that we, or our successors, will come to regret.

I will go on to argue that there are three potential sources of bad news for the decision of allowing the loss of something that could be valuable in the future. First, it might be that something that is not particularly valuable now gains in use value in the future. Second, future people may have different preferences from ours, and even develop preferences that can only be satisfied by the thing that we are considering allowing the loss of. Third, future people might discover that the thing was objectively valuable all along, and that we are mistaken in our low valuation of it today. All these can make delaying a decision to invest in allowing the loss more attractive. I will argue that neglect of these three sources of option value can follow from an excessive focus on biodiversity over other forms of diversity or on use value over other forms of value, a failure to

account for any objective value, a neglect of plural forms of valuing, and from preferences that are satisfied without the person whose preference it is being aware of this.

To return to the example of the tree species threatened by climate change, it may be that the species gains in use value in the future. This is the first potential source of bad news. Perhaps, for instance, it is discovered that some unique component of the sap of the tree has properties that are useful for powerful future batteries. This is a simple increase in use value – what has changed here is not necessarily anyone's attitude. Instead, scientific progress together with contingent facts about the economy have combined to make the tree more useful. Scarcity can have a similar effect, and even lead to a circle of increasing value. Bluefin tuna, for example, has become more valuable as it is over-consumed and becomes scarcer. This scarcity has not just increased the unit price through the normal price mechanism, but also made the product seem more attractive, thereby increasing its use value and creating further incentives to overfish (Fromentin et al., 2014). The tuna example, unlike the tree sap one, involves a change in people's preferences.

These kinds of bad news have long been recognised as an important application of real options theory in the field of environmental preservation. Kenneth Arrow and Anthony Fisher (1974) argue that, generally, activities with irreversible environmental costs will have lower net benefits in the presence of uncertainty about the future value of the available options. As an example, they use a redwood forest that could either be preserved or opened up to logging. Logging, they argue, is a practically irreversible investment decision. They show that it will generally be optimal to refrain from logging, even if logging has a positive NPV, if in the near future it is likely that we would want to reverse the logging.

In the environmental economics and biodiversity preservation literature the kind of bad news that we care about in cases such as that of the redwoods often follows some change in the global production chain, and in what can be used most effectively to fulfil consumer preferences. In Arrow's and Fisher's model, the news in one period depends stochastically on how much of the

redwood we decided to log in the previous period. More importantly and interestingly, however, future valuers and their preferences can also function as sources of bad news.

This second kind of news, I contend, is not sufficiently accounted for in the existing literature on the option value of environmental preservation. The possibility that something we might irreversibly lose would be valued by future people is a key source of option value. The term option value is used quite loosely in the biodiversity literature (for discussion, see Faith (2021)) to mean the value of preserving biodiversity for future generations. Bartosz Bartkowski (2017, p. 53) perhaps comes closest to what I am interested in here when he argues that "[t]he view of biodiversity as carrier of option value stems from the recognition that a biodiverse ecosystem, which contains many different species and genomes, can best accommodate unanticipated future desires (preferences)." For reasons that I will elaborate below this focus on option value that arises from the desires and preferences of future people is important. Say we are considering whether to allow the loss of a species. The possibility of this species being valued by future people because their preferences are different from ours is an important source of bad news for the investment in the loss of the species. As seen above, in some cases this value means we should postpone the decision to lose a species until these future people exist.

I see two limitations in Bartkowski's approach to bad news from future preferences. First, Bartkowski is explicitly concerned with the economic value of biodiversity.[36] Inasmuch as what is valuable is simply the satisfaction of preferences (that economic value tracks) this may be appropriate enough, but on many views of value this will capture, at best, only a part of the option value of biodiversity preservation. In standard approaches to environmental valuation, resources and parts of the environment can only have value as means to a pre-determined end, and tools

[36] Everyone I have cited above in my discussion of option value (except for Burri) is also primarily concerned with economic value, though not necessarily opposed to the expansion of the framework to other kinds of value. It is also worth noting that economic value includes not just value that is commonly traded in markets. Instead, it is a more comprehensive measure of societal utility that could be, in theory, traded in a market.

such as the option value framework only help us rationally choose the correct means. The end is assumed to be preference satisfaction, or the utility or welfare that preference satisfaction constitutes. The content of preferences is set aside as a matter for each individual actor.

This approach is unhelpful if there is more than one kind of end. As we saw in chapter 1, many pluralist accounts of value include plural ways of valuing that cannot be captured by an internally interchangeable category of preferences. On Elizabeth Anderson's (1993, see esp. §9.3) view, for example, different things that we might choose to preserve will be subject to different valuing attitudes in the future. In the future (and now) goods will not differ just in terms of how valuable they are, but also in how they should be valued. This view limits the substitutability both of preferences and of the valuable goods that can satisfy them. To see the consequences of adopting a pluralist view like Anderson's, as opposed to one based on preference satisfaction, imagine that we decide to allow the loss of some potentially valuable trees. Suppose future people develop a preference for Gadgets, which can only be made from the sap of these trees. Thankfully, these future people quickly develop a way to synthesise this sap, satisfying this preference. On Anderson's view, however, there could still be bad news for the investment of losing the trees, because they could be appropriately valued in a way that goes beyond this kind of use value. The trees are not merely useful to us because we can make things out of the sap or even because looking at them might make us happy. Instead, perhaps majestic trees command our respect, and we and future people may care about their preservation independently of their impact on our personal experience of the world.[37] It may be that people develop valuable relationships with particular trees, and therefore come to value their preservation – in this way, the trees could gain the kind of relational irreplaceable value discussed in chapter 2. On a related view, it may also be inconsistent with genuinely valuing the tree to treat it merely as a container of some overarching value.

[37] This latter kind of valuing (but not the former, which is not determined by preferences) is what economists sometimes refer to as existence value. This, however, is still a case of simple preference satisfaction: the relevant preference is a preference for the existence of a thing or a state of affairs.

There is a related but broader challenge to the kinds of preference orderings that typically inform cost-benefit analysis of the kind used in investment theory, even if they account for uncertainty around future preferences. The probability distribution of future preferences, even if it is known to us, cannot provide a complete preference ordering if different goods are incommensurable as a means to preference satisfaction (Adler, 2015, p. 322). The problem, briefly, is that if some goods or bundles of goods are incommensurable, then focusing on preferences alone cannot yield a complete decision rule that tells us what to preserve with our finite resources. This is because incommensurability can lead to an individual not preferring one bundle of goods over the other, or vice versa. This presents a practical problem for anyone grounding value exclusively in preferences. Generally, rational choice orderings require a single measure of value, which incommensurability, even of means only, does not allow – in theories based on preference satisfaction, willingness to pay measures provide such a single measure of value. A value pluralist will also struggle, for the same reason, to construct complete preference orderings and the kinds of decision rule that can follow from it. Value pluralists, however, tend to be aware of this and not even try. The conclusions defended in this thesis, accordingly, do not amount to such a decision rule.

A problem identified by Derek Parfit (1986, p. 494) introduces a further complication for any account that relies exclusively on the preferences of future people as a source of option value. Imagine some future people develop a preference for the existence of zebras. This is a straightforward source of what economists call existence value.[38] Suppose, now, that the governments of the world today secretly hide all zebras underground, leading future people to wrongly believe that they have gone extinct. The preference for the existence of zebras has been satisfied, but the people who have that preference are none the wiser and there is no impact on their welfare. Do they value the existence of zebras, a state of affairs that they are unaware of?

[38] Cases of existence value seem particularly likely to suffer from this problem.

These kinds of cases suggest that there is a disconnect between preference satisfaction and welfare. Accordingly, there is also a disconnect between either preference satisfaction and value, or welfare and value, or both. These cases, at least, give us a reason to doubt one of two things: either we should doubt that the attitude of valuing is equivalent to or even tracks preferences, or we should doubt whether valuing attitudes track the presence of value. This, in turn, means that there may be bad news to be found even where future preferences are satisfied.

Another limitation of Bartkowski's view, and indeed of the entire literature around the value of biodiversity, is its exclusive focus on biodiversity at the expense of other important forms of diversity. If we care about the preferences of future people, or about what is valuable in the future in some other sense, then we should also care about the preservation of other potentially valuable things. Future people may come to value species that are not especially valuable now, but they may also come to value activities, places, landscapes and buildings that we do not consider especially valuable now. Indeed, if we allow the loss of a way of life that many future people would have come to value, then this seems to matter a great deal – the magnitude of the bad news (that people would have valued it) is significant, because ways of life are so important to people and to their identities.

Now, it might be objected that people have highly adaptive preferences. If we choose to allow the loss of a thing, then future people will simply value something else instead – we are, as a rule, quite good at getting used to the situation we find ourselves in, and at finding value in that situation. Even future people deprived of a great many things we think important may appear not to be badly off at all in terms of the fulfilment of their desires, and access to things they actually value. If this is the case, then it does not matter that we do not know what preferences people will have in the future. Their preferences will be satisfied in any case, and no value is lost. It may even be prudentially rational to try to end up in this position by adopting such achievable preferences (Sen, 1992, p. 55). To return to an example from chapter 2, Brian Barry puts the worry like this:

> Perhaps people in the future might learn to find satisfaction in totally artificial landscapes, walking on the astroturf amid the plastic trees while the electronic birds sing overhead. But we cannot but believe that something horrible would have happened to human beings if they did not miss real grass, trees, and birds.
>
> (Barry, 1999, p. 102)

How likely this is, and how adaptive people's preferences will be in the face of, for example, the consequences of climate change is ultimately a difficult empirical question that I will not attempt to answer. I will, however, offer one reason to think that people will not, generally, always adapt so they value their remaining options. Under any repressive regime, which greatly restricts the options that can be pursued by its citizens, there tends to be significant opposition from people who, nevertheless, insist on valuing ways of life, activities and things that the regime has prohibited, often at great cost to themselves. I think a significant proportion of people may react similarly strongly to important losses caused by climate change.

At this point it may be further objected that the oppressive regime case is relevantly different from the case of permanent losses caused by climate change, because in the oppressive regime case there is some hope, however slight, of the lost thing being regained in the future.[39] In the climate change case this is impossible. This line of argument, however, still leads to an absurd conclusion: it implies that, given that future people will adapt their preferences to the available option set, there may be nothing bad in terms of preference satisfaction about massive losses of valuable things to climate change. To paraphrase Barry, we cannot but believe that there is something wrong here. In this case we would have no good reasons to pursue sustainable policies that preserve things that we find valuable now for future generations. The intuitive implausibility of this view may imply that things other than preferences also matter in the future, or that we consider it permissible to let what we value now shape our understanding of what future people may value to some limited extent. I defend both of these views.

[39] I thank Francisco Garcia-Gibson and Tom Bailey for putting this argument to me.

There is also a related worry about the way our choices influence future preferences. As we saw in the previous chapter, what we choose to preserve now does not just (partially) determine the option set available to future people, but it also partially determines their preferences, given that preferences are at least somewhat adaptive. We could, therefore, intentionally try to shape the preferences of future people such that they would come to value, for example, a world with much less natural beauty. As I argued in the previous chapter there are anti-paternalist reasons grounded in the autonomy of future people to consider this highly objectionable. Intentionally manipulating the preferences of future people, or even the choice architecture facing them, is to fail to respect their autonomy, and may counterproductively reduce their welfare (Grüne-Yanoff, 2012). Even if this kind of behaviour is permissible, serious empirical problems remain. It seems hubristic to assume that we could reliably shape future preferences in this way. It is preferable to leave future people with a diverse range of options, without intentionally manipulating their preferences.

Finally, there is also another reason, at least for those who believe there is some kind of objective value, to avoid a conception of option value that is merely connected to people's preferences, and therefore also to doubt the significance of adaptive preferences. What if a threatened species or way of life may be worth preserving for future generations not because those generations may have preferences that make them value it, but because they might *discover* that it was valuable all along? Anyone committed to the existence of objective value and to the in-principle discoverability of that value must allow for the possibility of this kind of axiological progress. Future people may discover that a thing (or, indeed, an activity) that could have been lost was in fact valuable all along. This is a potential source of bad news for the investment in losing that thing. This is also a view that we are forced into if, as suggested above, valuing attitudes do not track value.

Neglect of the issues I have discussed in this section is likely to result in a systematic undercounting of the option value of biodiversity, and neglect of the option value of other kinds of diversity. Theorists of option value such as Arrow and Fisher rightly highlight that the neoclassical

framework makes us too ready to invest in situations where bad news for the investment could be expected. Their framework, however, will still lead us to invest in the loss of potentially valuable things more often than we should, because it relies on preference satisfaction. This applies to theorists of the option value of biodiversity too. Following the real options approach, we should only invest in a loss when the net present value of investing in allowing the loss is greater than the full option value of waiting minus the cost of waiting.

I will now use an example to summarise the argument thus far, and to more systematically lay out the neglected sources of option value that I have identified in this section. Consider an unusual cliff formation near the coast which, without expensive intervention, would be lost to erosion caused by rising sea levels. We want to decide whether to pursue the investment of allowing the loss of the cliff formation. We should choose the investment if it has a positive net present value, that is if the discounted benefits outweigh the discounted costs. The benefits include avoiding the cost of preservation. Costs of this investment include any value the cliff formation has, such as:

a) The current value that we know the cliff formation has now. Local people don't mind looking at the cliff formation, and local children enjoy playing on it. People would be willing to pay some small amount to preserve it for these purposes.

This value seems quite small, which makes a positive NPV likely. Allowing the loss could still be a mistake, however, if the cliff formation has option value – this arises if there is a possibility of bad news for the investment in the future:

b) The cliff formation may gain in use value in the future. Perhaps there is some small probability that, in the future, a deposit of some rare mineral useful in future technologies is discovered in the cliff formation.

c) Future people may develop preferences that can be satisfied only by this cliff formation. The cliff formation may, for example, conform exceptionally well to future aesthetic tastes.

d) The cliff formation may be objectively valuable. Future people may discover that the cliff formation was, in fact, highly valuable all along, and that people today are mistaken in their low valuation of it.

Option value, if it is high enough, may justify postponing the loss of the cliff formation until we find out whether these possibilities occur. If any of these kinds of value is ignored or underestimated, then the NPV of the investment will seem higher than it actually is, and we may make an unwise investment. There are several reasons why this might occur:

1. Often, discussions of option value focus exclusively on the option value of avoiding biodiversity loss. As the cliff formation is not a component of biodiversity, this approach would obscure all the option value described above.

2. Similarly, a focus on *future use value* rather than *future preferences* will lead to the loss of any option value arising from c)

3. In dominant models based on preference satisfaction, any objective value as in d) will be lost.

4. Relevant future preferences may be satisfied but value lost regardless. Imagine we allow the loss but build a copy of the cliff formation to satisfy future aesthetic preferences. On a pluralist account of value this may be an inappropriate way to value parts of the natural world, because they command a different kind of valuing than the copy does.

5. The preferences of distant or misinformed people may cause us to both over- and under-estimate the value of c). Perhaps the cliff formation is lost without some then-existing people who have a preference for its existence ever learning about this. This case seems to involve value loss, despite preferences being satisfied. Alternatively, perhaps its loss is prevented at the last minute, but this news never reaches some people with the preference,

who come to believe it has been lost. Here the value of preserving the cliff formation seems over-estimated under c).

Reasonable people disagree about whether objective value of the kind mentioned in d) exists. They also disagree on whether preference satisfaction is a good, or exhaustive measure of value, and about whether there are different kinds of valuing or not. My argument is ecumenical in the sense that different readers can accept, or refuse to accept, some of these sources of option value. It would, however, be difficult to deny all of them. If we adopt the real options approach as it is standardly used, or the approach of theorists of the option value of biodiversity, then we will lose some option value because not all sources of bad news are accounted for.

IV - How to preserve potentially valuable things

Now that we have identified these sources of option value we can use them to make better decisions about what things to preserve in the face of climate change. In a sense, we can use option value as a measure of the instrumental value of the freedom of choice we leave future people. The value of leaving them more options, on this account, does not stem from any intrinsic value in having more options. The same conclusion could be reached, more controversially, through the position that having more options is always valuable (see Carter, 2006). Option value, and our uncertainty about future value, provides an alternative and less controversial account of the value of having options. This means that it provides a way of explaining why having more options is important even in the absence of information about the value of specific options, and even if freedom of choice is not independently valuable. Option value, then, is a way of elucidating how uncertainty gives value to a diversity of options, but it can also elucidate what that diversity should look like. It is now time to consider which options, and what kind of diversity, will enable future people to enjoy the value of freedom, and enable them to make their own choices.

It may seem like quite a lot of things have high enough option value, resulting from the possibility of them becoming more valuable in the future, to make it rational to postpone their loss until some

future valuers exist. Recall, though, that it is only rational to postpone when this value minus the cost of waiting is greater than the NPV of making the investment now. Many of these investments will have a significant NPV, particularly because of the opportunity cost associated with the decision to not allow the loss of a potentially valuable thing. Preserving things threatened by climate change is often very expensive. This means that, if we make an investment in allowing the loss instead, much of the value of that investment comes from the resources it frees up for other ends, including the preservation of other things. To outweigh this value, the option value (determined by the value that the thing potentially has in the future, and by the probability of the bad news that it turns out to be valuable) needs to be high. The costs of waiting, for example the opportunity costs we accrue while we wait for new valuers to exist, also need to be relatively low. In this section I will consider what kinds of things might have these features, and therefore high option value to their preservation.

What I am doing in this section can also be described as a way of elucidating what it would mean to leave future people with the opportunity to live a good live according to *their* conception of the good. What I look for in this section, accordingly, are cases where the option value is significant, either because the probability of bad news is high, or because the value gained in case of bad news is particularly great. We cannot know what will be valued in the future, but we can know something about how valuing is going to work. These are the facts I will make use of, and they are not about the content of future value judgements, but about their structure and their distribution.

Dieter Birnbacher (2014) shares the view that biodiversity is valuable because we cannot be sure about what future people will value. In support of his argument, he points out that we do know two things about future valuing: that preferences in the future will undergo considerable change, and that the interest in experiencing untrammelled nature will grow as that nature becomes scarcer (Birnbacher, 2014, p. 40). These are both sources of option value of the kind I discussed above,

but I will here focus on the first of these facts as a useful way to guide our conservation of valuable things.

I also contend that we know, or can be reasonably sure of, one more thing: people will continue to value a diverse range of things, and to commit to a diverse range of conceptions of the good. This is connected to my earlier point about preferences under repressive regimes: even in circumstances where it is difficult, people tend to subscribe to a diverse range of conceptions of the good. I think future people, too, will want to pursue diverse ways of life, have diverse aesthetic preferences, and judge their lives and those of others by diverse ideals. We are not likely to turn into a species of clones who all have the same conceptions of the good, the same preferences and the same tastes.[40]

These facts can help us make decisions about which potentially valuable things to preserve, because they help us identify things with high option value. First, the fact that preferences will continue to undergo change in the future increases the level of uncertainty around what future people will value. Preferences will continue to evolve, and if people are now discovering new objectively valuable things they are likely to continue to do so into the future too. Preference changes and value discoveries in one period, meanwhile, will set the stage for what is valuable and valued in the next, compounding uncertainty about future value. This will ultimately mean that we can make very few assumptions about what, specifically, will be valued in the future.

As such we should, as implied by Birnbacher, preserve not just things that to us seem like obvious candidates for valuing, say things that are very similar to things we already value. Radically different things may be valued by future people, or discovered by them to be valuable. This is less likely to

[40] I also think it would be immensely regrettable if we did. This, however, may be just because I (and perhaps most people today) have a preference for a world where conceptions of the good are varied, and where people differ from one another. Future people may not share this preference, and my argument here does not depend on them doing so. Similarly, my argument does also not depend on the idea that having more options is independently valuable, or the view that diversity is intrinsically good.

apply, all things considered, to things that are harmful to us now. We have a strong reason not to preserve these things, even if there is option value to doing so.

The second thing that we know about future valuing is that people will continue to have diverse conceptions of the good. If this is the case, then we are also likely to find option value in the preservation of highly diverse things. If something potentially valuable is lost but something very similar is preserved, then we might expect preferences to adapt – if the preserved thing is very different, however, then there will have been a significant loss of value. If we are already preserving one thing, then preserving something that is very similar across its valued properties is likely to have low option value.

The argument here is based on the notion that different future people will value radically different future things. Joseph Raz (2009) provides a further reason to care about the preservation of a diverse range of options. For him, even a single individual needs access to such a range in order to live an autonomous life. Variety, rather than the mere number of available options, is what matters. "[T]o have an autonomous life, a person must have options which enable him to sustain throughout his life activities which, taken together, exercise all the capacities human beings have an innate drive to exercise" (Raz, 2009, p. 375). Much the same conclusion can be reached from the idea that future people will have diverse conceptions of the good. Such people will be driven to exercise different capacities, which represent the full range of human potential and human interests.

Based on the discussion so far, it is clear that we must preserve a diverse range of options, and that this range must include things that are not currently obvious candidates for valuing. It is not immediately obvious, however, in what sense these options ought to be diverse. Raz' ideal of a society in which humans can exercise diverse capacities needs further elaboration.

Usually, what makes different things valuable to different people, or distinctly valuable options in an autonomous life, is that they have different valuable properties or functions. These properties

or functions, generally, form the axes over which preserved potentially valuable things should be diverse. Consider different kinds of landscapes, such as the Hungarian Puszta or the rolling hills of the South Downs in England. One of the reasons why someone might value such a landscape is due to aesthetic considerations. Perhaps the Puszta is valued because it is awe-inspiring, and the Downs are valued because they are beautiful. These are the same kind of aesthetic property. Perhaps there could be a landscape that is both awe-inspiring and beautiful, or perhaps these properties are incompatible. At least, however, the two properties seem quite qualitatively different from one another. They do not exist on the same scale, and the properties of being awe-inspiring and beautiful do not track each other. The fact that these valuable properties provide potentially incompatible scales for valuation, however, gives us a reason to preserve things scoring highly on both scales.

The Downs and the Puszta seem to be the same type of thing. By this I do not mean that they are of the same genre, in the sense that they should be judged by the same evaluator – a more beautiful landscape is not necessarily a more valuable landscape, and landscapes can be valuable on different, even incommensurable scales of excellence.[41] What I mean is merely that they are descriptively similar in a way that, in practice, lends itself to categorisation. One form of diversity that matters is within such categories of potentially valuable things.

Inter-category diversity also matters. Future people may come to find landscapes, generally, uninteresting – at least aesthetically so. Perhaps they will prefer to look at and enjoy small plants. There is therefore great option value in ensuring that we do not lose all elements of a category – that we do not lose all potentially valuable landscapes, cultural traditions, or plants. This is likely to be easier to do than preserving intra-category diversity.

[41] This sense of genres is what Raz' value pluralism rests on – see, in particular, Raz (2005). It is also similar to Anderson's (1993) modes of valuation.

We should also care about the geographical distribution of the things that we choose to preserve. We should try not to preserve instantiations of a type or category of potentially valuable things in only one part of the world, nor should we preserve intra-category diversity only in one location. A geographic spread can help ensure that those who value specific things in the future can, in fact, experience them. Many, though not all, forms of valuing clearly depend on some kind of direct experience of the valuable thing.

There are also some things that should be preserved, but not because they do well on some scale of valuation. This means they should be preserved not because of some property or function that they have, but for their own sake. These tend to be cases of what G. A. Cohen (2011) calls *particular value*, meaning that they are valued as the particular things they are, and not as carriers of some generic kind of value or indeed for any supervening valuable property they have.[42] These things tend to be incommensurable with monetary value, and often it may seem inappropriate to think that they should have a price. Consider love. If we love someone, we value them not because they score highly on a scale of beauty or kindness – we value them directly as the specific thing they are. We cannot, unfortunately, do much to preserve this value for future generations, other than by preserving things that we already find very valuable. We have no way of knowing what particular things will be objects of this kind of valuing in the future, and many of those things probably do not even exist yet.

We have reasons to protect a wide range of, for example, ecosystems, regardless of whether they have significant value now, as long as we know that their loss would be irreversible and that they could conceivably be valued in the future. Of course, some potentially valuable options will always be foreclosed, and it is likely to be the case that we will unavoidably and irreversibly lose some potentially valuable ways of life, ecosystems, and landscapes. In this case we can try to safeguard a maximally open future in which a diverse enough range of options is preserved. In the spirit of

[42] See chapter 2 for a longer discussion of Cohen's account of this kind of value.

value pluralism, we should prioritise things that are non-interchangeable with one another (and therefore have potential irreplaceable value). These distinctions are ones that the standard economic approach to option value in the context of climate change cannot make, because it assumes that what matters is merely preferences, and that these can be satisfied by many interchangeable value carriers.

Finally, I will address one particularly important source of option value. These are last specimen cases - things (for example, ways of life or landscapes) that are somehow very distinct from all other remaining ones. They provide a set of goods to those who enjoy them that is not only unique, but significantly different from those provided by other ways of life or landscapes. We want to preserve instantiations of each category of thing, as discussed above, and we also want to maintain diversity within categories. For example, we might want to preserve some steppes, but option value does not provide a reason to preserve every steppe. When deciding what to preserve within categories, it is important to preserve things that do well on distinct criteria of valuation. If there is only one steppe left, and we think steppes might be valuable in the future for any of the reasons discussed in the previous section, then we have a strong reason to preserve that steppe as a last specimen. This reason is less weighty if there are other non-steppe landscapes that are very similar to the steppe. If the steppe is of potential value because it is awe-inspiring, then we may be equally well-off, from the point of view of option value, if we instead preserve something else that is equally awe-inspiring. If there are very few, or only one awe-inspiring thing left, then we ought to preserve that thing to guard against the possibility of the bad news that future people value awe-inspiring things highly.

This is an example of the broader phenomenon that as things become rarer, they become increasingly worthy of preservation. As Kubala, Lederman and Lovett (forthcoming, p. 3) put it, "the weight of our reason to protect distinctively valuable objects increases as the number of such objects decreases". They, unlike me, reach this conclusion from the idea that diversity is

intrinsically valuable – the view "that the world is better, other things equal, insofar as it contains more kinds of value." My argument does not depend on this view of value. We can reach the same conclusion, however, by focusing on our uncertainty about what will be valuable in the future. It is this uncertainty that makes diversity instrumentally valuable.

These last specimen cases are similar to the cases of relational value I argued we should preserve in chapter 2. The things I discussed there are also last specimen cases in the sense that they are the last thing with their value-conferring relational property. However, the cases I discussed in that context are special because their value-making property is also non-reinstateable – we know no future object can have the same property. These last specimen cases are worth preserving even where that is not the case.

Following the discussion of autonomy in the previous chapter we might worry that, in choosing what to preserve on behalf of future people, we are not sufficiently respecting their autonomy. There are some things that future people will clearly find valuable, such as the things any human needs to fulfil their basic needs. These are already valuable, and we know them to be valuable. They are not the focus of this chapter. Consider, however, a potential worry about what might occur when we go beyond the things needed to fulfil basic needs. We cannot be sure whether future people will in fact value these things, and yet we are making a choice to preserve them on their behalf. This may seem disrespectful of the autonomy of future people – we are choosing some things to preserve because they may turn out to be valuable, and we are letting other things go despite the fact that it is perfectly possible that these, in fact, would be valued by future people. As mentioned earlier, John O'Neill (2022, p. 349) argues that debates about what to leave future generations are always also debates between different current conceptions of the good life, and about the goods that are needed for such a life. In providing an account of what is to be preserved, we unavoidably also presuppose some account of what a good life might include. Here, however, it is worth distinguishing between two distinct reasons for preservation. We may either be

preserving things because we consider them valuable now, and therefore think that future people will, or at least ought to, find them valuable too. This would involve projecting our judgements about the good onto future generations, and this may or may not adequately respect them as moral agents – either way, this is not what I am doing here.

Instead, we preserve these things for reasons that are independent of whether we think they are valuable now, because they might be valuable in the future. This I think we can permissibly do, even without being perfectionists about the good life. This is permissible for three reasons. First, the assumptions I make here about what other people value, even if they are to some extent based on what we value now, are very minimal and not meaningfully prescriptive as to the content of the good life. Second, the assumptions I make above, such as the view that future people will have diverse conceptions of the good, are largely based not on what we consider valuable now, but on content-independent facts about the structure of future valuing. Third, choices about what to preserve and what to let go of are choices we cannot avoid, or entirely leave to future generations. Preserving a diverse range of options may, in fact, be the best way we have to stay as neutral as we can. We can only choose whether to make them in a way that fully accounts for the option value of preservation, or in a way that does not.

V - Conclusion

The above discussion is intended to provide a guide to the preservation of option value that arises from sources that are likely to be ignored or undercounted. It does not provide a full decision rule that can be used to judge, in each case, whether an individual thing should be preserved or not. Instead, I have sought to highlight the kinds of cases where option value is likely to be neglected, and where undesirable losses may occur as a result. I have also highlighted some kinds of future value that are both important and often forgotten. I have also suggested ways in which the preservation of certain kinds of diversity could us help avoid these pitfalls.

I have argued that there is option value in postponing the irreversible loss of potentially valuable things such as species, places, and activities. This arises from the possibility of bad news for any investment in the loss of something potentially valuable – there is always a chance that it becomes valuable in the future. It is only rational, however, to preserve the potentially valuable thing if this option value is great enough, and if preservation is not too costly. We are in danger, I have argued, of systematically underestimating this option value for several reasons. First, it is found not just in biodiversity, but also in other forms of diversity. Second, option value does not just arise from the preferences of future people, but can also arise where value arises independently of the states of mind of future people. Third, future preferences are likely to remain diverse, and not adapt to a narrower range of options. This means we should work to preserve a diverse range of types that are distinct across potentially valuable properties. We should preserve instantiations of both chalk cliffs and of steppes.

As such, I have highlighted one more way in which an impoverished view of value can lead us to make unwise choices in the face of climate change, leading to avoidable and regrettable losses of value. If we allow such losses we make the world our descendants live in worse than it needs to be. Earlier in the thesis I argued that neglect of (or an unclear conception of) irreplaceable value can have the same effect, as can neglect of future autonomy. There are other beliefs about value that could also have these negative effects, leading us to bequeath a less valuable world than we need to. In the next chapter, I consider a family of such beliefs about value. These are anthropocentric views, according to which the interests of humans trump other interests, or, alternatively, all value is in some sense dependent of humans. In contrast to the arguments so far, I will not argue that we must avoid these views in order to avoid unnecessary and deeply undesirable losses of value. We should, however, tread carefully

Chapter 5

Anthropocentrism, value, and effective climate action

I - Introduction

There is a view, common among environmentalists, that many of the problems facing us today are at least partly the result of objectionable and mistaken attitudes towards the non-human environment. These attitudes are taken to be objectionable and mistaken because they are, in some sense, anthropocentric. Climate change and biodiversity loss, for example, may be the result of human behaviour that is selfish, hubristic, or, more broadly, simply reflects mistaken beliefs about what is valuable. Expressing an increasingly common sentiment, Holmes Rolston III (1994, p. 30) argues there is "something hazardous in a time of ecological crisis, about living in a reference frame where one species takes itself as absolute and values everything else in nature relative to its potential to produce value for itself." There is also a related, and less consequentialist, view that is often expressed in conjunction with the first one. According to this view, humans treat and view nature in ways that are themselves objectionable, whether or not these contribute to outcomes like climate change and ecological disaster.

In this chapter, I explore two broad versions of these anthropocentric attitudes. The attitudes I discuss are anthropocentric either because they privilege human interests over other interests, or because they hold that all value is dependent on humans. I argue that while these views are no doubt widespread and reflected in policy, climate policy choices that reflect them need not lead to environmentally disastrous outcomes. The key claim of this chapter is that these forms of anthropocentrism, at least, do not need to be overcome if we are to pursue effective climate policy that protects value in nature. I also defend the more specific claim that an anthropocentric value theory does not need to be avoided in order to protect and preserve value in the environment. Indeed, a certain level of anthropocentrism may be useful when we seek to understand and to confront the threat posed by anthropogenic climate change. Some still object to these attitudes on

non-consequentialist grounds. Perhaps we are making a mistake about value, and this mistake leads us to holding objectionable attitudes towards the non-human world? I will argue that it is difficult to show that anthropocentrists make such a mistake.

Critics of anthropocentrism have targeted a wide range of ideas and practices. In this chapter, I focus on what I believe to be two important lines of critique, and on how they relate to climate change. First, I briefly discuss what I will call *ethical anthropocentrism*: the idea that humans have wrongly acted (and continue to act) in their self-interest, at the expense of non-human things. I narrow down the circumstances in which, and why, this would be objectionable. I then argue that since in the context of climate change humans are not in fact acting in their collective interest, this critique is misplaced and can even make the phenomenon of anthropogenic climate change more difficult to understand and address.

The second anti-anthropocentric critique I consider is more precise and easier to define, and the bulk of the chapter focuses on it. This view concerns an anthropocentrism about value. This *value anthropocentrism* is embodied in attitudes that are considered objectionable because they rely on the putatively mistaken idea that all value is in some sense dependent on humans. On this view, value would, generally speaking, no longer exist if all humans (or all sentient beings capable of valuing) ceased to exist. This kind of view implies that any value that is found in nature only exists thanks to humans. I am not here defending this anthropocentric view directly, but I will argue that it can be harmless, and even beneficial, to commit to the view. This is because it does not make it more difficult to achieve goals that environmentalists and those concerned by climate change consider important. I argue that it is difficult to show that this kind of anthropocentrism is mistaken, and that it is difficult to avoid.

Both of these accounts of anthropocentrism are present in the literature in environmental ethics in particular. I focus on the first because it represents a common and perhaps intuitive, though imprecise, understanding of anthropocentrism. I focus on the second because I believe this is a

more precise claim that often underlies the first conception of anthropocentrism. It is also highly pertinent to the focus of this thesis: the preservation of value in the face of climate change. This kind of anthropocentrism is the focus of much debate in environmental ethics, where a large literature is dedicated to finding value that is independent of human valuers, or less precisely (but more commonly) intrinsic value in nature.

I will begin by following Hayward (1997) in considering what he calls ethical anthropocentrism: the idea that humans are acting in their self-interest, at the expense of the interests of others. I argue that this first critique of anthropocentrism is impossible to sustain in a context of climate change because humans, as a class, do not in fact act in their own interest when they fail to take effective action. I argue that this broad anthropocentrism does not need to lead to poor climate policy, and that avoiding a human perspective, in fact, could hinder effective action by obscuring why climate change is important, as well as its actual causes. Anthropocentrism might still, however, be preventing humans from acting as they should, by misleading them about what their interests are. To investigate the case for this claim, in the third section I turn to the value-focused critique of anthropocentrism, namely the idea that we make a mistake by thinking that all value is in some sense dependent on humans. This mistake could lead us to not act as we should by blinding us to the irrationality of our choices, and the value losses they cause.

As I argue in section IV, however, this kind of value anthropocentrism is difficult to avoid. Moreover, as I argue in section V, value anthropocentrism, in the context of climate change, does not necessarily lead to the neglect of non-human values. Indeed, value anthropocentrism has few consequences for the question of what, ultimately, has value. Value anthropocentrists can also make some key arguments environmentalists often want to make against interventionist climate policies. As such, I conclude in section VI, we need not worry that an anthropocentric view of value leads to the loss of non-human, environmental values. We do not need to abandon

anthropocentrism of the kinds I discuss to act effectively to protect the environment and to combat climate change.

II - The first view: humans are wrongly acting in their self-interest

The first understanding of anthropocentrism I consider is this: humans are giving undue consideration to human interests, compared to non-human interests. This is what Tim Hayward (1997) has called the "ethical critique of anthropocentrism". On this view, anthropocentrism is the mistake of giving exclusive or arbitrarily preferential consideration to the interests of humans above other beings. This is an attitude that we as individuals could adopt when we decide how to weigh human and non-human interests. It is also an attitude that, much more perniciously, can infect policymaking, perhaps thereby contributing to widespread climate disaster and ecological destruction. This section, then, is dedicated to

> *Ethical anthropocentrism*: we should give greater consideration to the interests of humans than to non-human interests

The kind of anthropocentrism is taken to be objectionable for a range of reasons. First, it could have caused bad consequences for the planet and be continuing to do so. By prioritising human interests, on this view, we have neglected the interests of other organisms and nature more broadly, leading to widespread ecosystem degradation and to phenomena such as climate change, which is clearly harmful to non-human interests.

Second, some versions of this view are objectionable independently of their consequences. These versions of the view are manifestations of straightforwardly wrongful speciesism or human chauvinism. This version of anthropocentrism is taken to involve a grave moral error, the error of failing to give non-human interests their due weight. It may seem like ethical anthropocentrism as such, not just some versions of it, is obviously objectionable in this second way. After all, giving preferential treatment to one species over all others looks like a clear case of speciesism, which is

often considered to be wrong in a way analogous to racism: a morally irrelevant characteristic is used as a basis for radically different treatment.

It is, however, possible to discriminate without being a speciesist, if the discrimination is non-arbitrary. Those who give human interests greater consideration than non-human ones may well have non-arbitrary reasons for doing so. One such reason is to do with sentience. If sentience matters (say because pain and pleasure matter, or because what matters is something else that pertains to organisms that can plan and direct their lives) then we can at least be justifiably sentientist. This implies giving priority to the interests of sentient beings, and does not need to be arbitrary.[43]

Adopting a less anthropocentric view that does not privilege the interests of humans could also lead us to care less, rather than more, about climate change. As Joseph Heath has argued, one thing that makes the present climate crisis different from previous periods of climate change is the way it affects humans. The climate has often changed in the past, but this is the first time that our ecological niche, and with it complex human civilisation, is endangered by it. If we adopt a broader, less anthropocentric, view, climate change looks a lot less important:

> The flooding of Venice would be a great loss to humanity, but Venice has only been a human population center for around 1500 years. Before that it was a lagoon, and if it returns to being a lagoon, its brief metamorphosis into a center of human learning and culture will be but a small footnote in the much longer, natural history of the place.
>
> (Heath, 2022, p. 13)

Focusing on the effects of climate change on humans allows us to view the threat it poses in an anthropocentric, but non-arbitrary manner. The reason why climate change is important to us is that we adopt an anthropocentric perspective, in which human interests have disproportionate

[43] In this chapter, my targets are largely critiques of anthropocentrism that are also critiques of sentientism. I am open to the idea that the kind of anthropocentrism that denies that non-human sentient beings have value independent of humans is wrong. The difference between anthropocentrism and sentientism is of great importance for animal rights and the treatment of sentient animals more generally, but it does not matter a great deal when it comes to the significance of climate change or what we ought to do about it.

importance, as opposed to a point of view of the universe, from which climate disasters are plentiful and relatively unimportant.

Of course, the anthropocentric framing favoured by Heath has its problems. First, this era of climate crisis is also distinctive in that it, uniquely, is caused by humans. This might plausibly give rise to duties on humans to henceforth act in a way that is less anthropocentric, repairing the damage we have done to the non-human world. Second, there is still the possibility that anthropocentrism, in the sense of a myopic focus on human interests, is exactly what has caused the disaster in the first place, and continues to prevent effective action to combat it. In that case we have pragmatic reasons to adopt a less anthropocentric worldview.

If this pragmatic critique is adopted, however, then we no longer have what Hayward calls an "ethical critique" of anthropocentrism. According to the ethical critique, anthropocentrism must be the ethical mistake of arbitrarily privileging the interests of humans. Instead, we have what we might call a perspectival critique, according to which anthropocentrism is the mistake of seeing the world from a human perspective, perhaps with an excessive *focus* on human interests.[44] On this view, we are failing to recognise our true position in relation to non-human nature. An ethical critique can paint anthropocentrism as objectionable in itself. A perspectival critique, on the other hand, if it is to be of any practical or policy interest, should point out some negative consequences of seeing the world in this way. Perhaps failing to see the real position we are in with regard to nature has blinded us to the effects of our actions. Showing this convincingly is surely difficult, given the highly complex human and natural systems involved.

Perspectival anthropocentrism, if we understand it simply in the sense of viewing the world from a human perspective, is also difficult to avoid. As we saw above, Heath illustrates one serious

[44] It is possible to have an excessive focus on a particular set of interests, without arbitrarily privileging those interests. Consider, for example, an ecologist studying a harmful invasive species. They are likely to focus on, and have a strong understanding of, the interests of that species, but they are unlikely to recommend that we act to further those interests. Similarly, we as humans can easily obsess over our interests at the exclusion of anything else, without in fact doing anything to further those interests.

danger with even attempting to avoid it in the context of climate change; without it, we might struggle to make sense of the whole phenomenon. This is connected to a broader issue with this flavour of anthropocentrism: our decision-making is necessarily done from a human perspective. This may mean that we cannot avoid seeing the decisions we face in a way that at least gives our interests a prominent place. The questions we face when we need to decide what to do about and to the environment are, as Bernard Williams (1995, p. 234) points out, unavoidably human questions – only we can discuss and answer them, and only we can act in accordance with our answers. This does not in itself imply that we cannot avoid giving our interests undue consideration, but it certainly makes perspectival anthropocentrism difficult to avoid. Ultimately, asking humans to be less focused on the way climate change affects us specifically may be a fool's errand.

A critique that targets ethical anthropocentrism may be more normatively persuasive, and potentially easier to support than one that targets this perspectival kind of anthropocentrism. In the context of climate change, however, the idea that humans have been wrongly acting in their self-interest at the expense of non-human interests immediately runs into one significant problem. The problem is that climate change and ecosystem destruction are clearly not in the interest of humans as a class. As such, we are not now causing them in order to further general human interests.

Climate change, or at least the activities that cause it, can be in the interest of some humans or specific groups of humans. If this is the case, however, then anthropocentrism no longer provides the most apposite explanation of what has caused the problem. Instead, we can (and perhaps should) point to other large-scale, systemic causes, such as capitalism (Malm, 2016), neoliberalism (Parr, 2013) and excess growth in high-income countries (Hickel, 2022). Alternatively, we can highlight simple individualised selfishness, shortsightedness, greed or incompetence. Viewing climate change as a collective action problem can also help explain why it may be rational for

individual actors to not take action to combat it, even if it is not rational for humans as a collective to do so. Inasmuch a focus on anthropocentrism obscures these causes of climate change it is unhelpful in addressing the problem.

An explanation of the causes of climate inaction that is closer to the critique of ethical anthropocentrism holds that climate change benefits the present generation, at the expense of the interests of future generations and of non-human organisms. This is plausibly true in the sense that, for many people alive now and in the past, the lifetime benefits of emissions outweigh the costs in a way that is unlikely to hold in the future. Humans do not prioritise the present over the future because of anthropocentrism, however. There is a great deal of evidence that people generally are imprudent: they prefer present benefits over greater future ones even within their own lives (Warner & Pleeter, 2001). In an interpersonal and intergenerational context the kind of pure time discounting implied by the idea that the interests of future people matter less is not easily defensible (Caney, 2014). We can easily explain why this generational partiality occurs, and why it is wrong, without appealing to a critique based on anthropocentrism.

Those worried about ethical anthropocentrism, however, might have a more specific worry. They might argue that, while idealised or rational humans as a collective would not find it in their self-interest to destroy the environment or cause climate change, real humans clearly do. This might be because real humans, unlike idealised ones, adhere to a kind of anthropocentrism that is damaging both to their interests and to the interests of other organisms.

The question then is why humans would behave in this irrational way. One possible explanation is that they are led by a mistaken view of value – this is the possibility I explore in the remainder of this chapter. [45] If we mistakenly subscribe to an anthropocentric theory of value, then it could both lead us to pursue harmful policies, and be objectionable in and of itself. This could also lead

[45] This collectively irrational behaviour could also be explained by the fact that climate change is a collective action problem. Value anthropocentrism, however, could provide an alternative or complementary explanation.

to the loss of a great deal of value found in the environment. If this is the case then, unlike the other common beliefs about value explored in this thesis, this could be a view that is too influential in policymaking, rather than neglected.

III - The second view: we make a mistake if we think all value is dependent on humans

The idea that we give undue consideration to human interests, which I have discussed so far, is only one way of understanding anthropocentrism. Indeed, this is arguably an uncommon understanding of what anthropocentrism is. In environmental ethics in particular, the focus instead tends to be on value. Here we find a family of accounts according to which anthropocentrism is the view that non-human life forms (and other things) do not have moral value, and only humans do (Kopnina et al., 2018). A desire to avoid this specific kind of anthropocentrism has spawned a very large literature dedicated to finding and justifying value that is in some sense independent of humans (Heath, 2022, p. 22).

Now, no one seriously thinks that only humans have value. If that is what anthropocentrism entails, then anthropocentrism is clearly false, but also not a good description of how anyone thinks or acts. A more plausible reading of this account of value-based anthropocentrism instead centres on *dependence*. On this interpretation, to be anthropocentric is to believe (or to act as if) there is no value in nature that is independent of human valuation:

> *Value anthropocentrism*: All value is dependent on humans (or other sentient creatures capable of valuing), so that without humans there would be no value.

This is not the view that nothing has value independently of any *use* it has to humans. Humans can value things that no one has any use for, and this value can nevertheless be dependent on humans. For example, many of us value the mere fact of the existence of non-human life, or of beautiful landscapes. If these are valuable only because humans value them, then this is still a case of value that is entirely dependent on human valuation.

Richard Sylvan describes the anthropocentric attitude I am concerned with here as "chauvinism". This attitude, to Sylvan, is indefensible. He famously invites us to imagine a world in which only one person remains (1993, p. 16). They set up a mechanism that will destroy every living thing, every animal and plant, but without causing any pain.[46] The last person dies just before the wholesale destruction they have set up actually takes place. In dominant, anthropocentric or chauvinistic views of value, Sylvan points out, there is nothing wrong with the actions of this last person. If all value in some way depends on humans, then there can be no more value lost when all plants and animals are destroyed, because the last human is already dead. The last person certainly seems to, at the very least, have a highly objectionable attitude towards their environment.

Sylvan insists, against the anthropocentrist, that what the last person does is clearly wrong. Someone who wants to defend the anthropocentric view must bite the bullet and insist that it is not. Someone who agrees with Sylvan, on the other hand, must provide an explanation for why there is value that is independent of humans, and how this value works. Both sides of this argument tend to find the other very difficult to convince, leaving the debate at something of an impasse. As Norton and Sanbeg (2021, p. 697) put it, it has been impossible in environmental ethics "to establish a non-controversial value foundation for the discussion and resolution of impasses regarding environmental actions and policies", because both sides are equally fully convinced by the arguments favouring their position. The anthropocentric position, to many people, continues to be deeply implausible. Meanwhile, it has proven difficult for non-anthropocentric thinkers to provide convincing theories of value. Sylvan thought such a theory could only be provided through a new, environmental ethic, and he argues that the last person's action must be wrong because there is intrinsic value in nature. The question, then, is where and why such value exists.

[46] This also works as an argument against sentientism if we assume that the last person is the last sentient being too.

Not all who think humans objectionably act in their self-interest, or who think humans objectionably dominate nature, object to an anthropocentric view of value. Take the views of Dale Jamieson (2010) and Robert E. Goodin (1992). They both, I take it, believe we display objectionable attitudes towards nature. They do so, however, because they believe good human lives require a certain view of nature. This view is anthropocentric in the sense that they still hold (and Goodin (1992, p. 44) explicitly states this) that all value is dependent on humans as valuers. Holmes Rolston III (1994), for example, is opposed to this kind of value anthropocentrism. This type of anthropocentrism is what I will discuss in the remainder of this chapter. I will argue that there are reasons to doubt that value anthropocentrism is objectionable. If I am right, then this is a problem for Rolston, but not for Goodin or Jamieson. Their claims are more easily defensible, but they do little to condemn anthropocentrism about value.[47]

The critique of value anthropocentrism, which holds that we are wrong to think all value depends on human valuers, is both more precise than the claim that humans act in their self-interest, and more easily supportable. I will not seek to prove that value anthropocentrism is the correct way to think about value. I will, however, suggest that there are reasons to think it is a plausible view. I will also argue that even if this view is widely held, this need not have bad consequences for the environment, because it entails no substantive view about what has value (instead, it is a view about the *source* of value). I will first present some reasons to doubt the critique of value anthropocentrism. I will then focus on the consequences of this view being widely held and

[47] There is also a separate kind of claim that I will not discuss much. This is the merely descriptive claim that humans dominate nature. I think this (at least on some plausible readings) is clearly true. If the further normative claim is made that this is in itself objectionable, then one may arrive at the value claim I discuss here. If one then adds the further (plausibly true) normative/descriptive claim that this domination is bad for humans and the planet, then one arrives at the conclusion that this kind of anthropocentrism leads to poor outcomes, such as climate change. I will discuss this kind of consequentialist claim later, and specifically whether value anthropocentrism encourages policy that is harmful to the environment. But I will not discuss the idea that humans dominate nature on its own, because I think it is obviously true (if evidence is needed, see for example Vitousek et al., 1997) and (at least for a normative philosopher) relatively uninteresting.

reflected in climate policy, and argue that anthropocentrism about value cannot be used to support some controversial climate policies that it might be thought to support.

As I have suggested, anthropocentrism about value can be objectionable in two ways. First, it may be that anthropocentric attitudes towards nature are objectionable precisely because they rest on this view of value. If there in fact is value that is independent of human valuation, and we as humans deny this, then we may exhibit objectionable attitudes towards the non-human loci of such value. This would be akin to viewing another person as an object, when we in fact ought to see them as a person. This worry is only pressing, however, if we are in fact making a mistake about value.

As an example of this kind of view, focusing on the wrongness of the anthropocentric attitude itself, Dale Jamieson argues that:

> It is not too much to say that as a civilization we treat the Earth and its fundamental systems as if they were toys that we can treat carelessly, as if their functions could easily be replaced by a minor exercise of human ingenuity. […] Seen in this way, our collective behaviour towards nature seems to be the paradigm of disrespect.
>
> (Jamieson, 2010, pp. 441–442)

This is not, I think, an uncommon view, broadly speaking. It is not only held by environmental activists. The key point is that humans hold objectionable attitudes towards nature. If we, as humans, fail to recognise value that is independent of human valuation, then this can readily explain why anthropocentric attitudes towards nature are objectionable: they rely on a mistake about value.

It is worth pointing out that this kind of argument, when read on its own, is likely to be most attractive to non-consequentialists. Consequentialists generally do not care what attitudes people hold, unless their holding those attitudes has relevant consequences. Non-consequentialists, however, can think these attitudes important independently of these consequences. They might, for example, think it objectionable if I view another person as an object, regardless of whether I

act on that view. I will take a non-consequentialist stance in assuming that attitudes can be objectionable, even if they have no consequences.

Second, and regardless of whether or not this anthropocentric attitude is in itself objectionable, an anthropocentric view of value, if widely held, may have bad consequences for nature and for humans. On this view, an anthropocentric value theory has led humans to unsustainable choices, causing disasters such as climate change and biodiversity loss. As an example of this, consider Rolston's view, quoted in the introduction to this chapter, that there is something "hazardous" about adopting anthropocentric attitudes towards nature. These claims are commonplace in various explanations of why we are in the conundrum we are at the moment: our anthropocentrism has blinded us to the consequences of our actions, and prevents us from acting as we ought to today. This mistake might also, as discussed in the previous section, blind us to the fact that failing to act to combat climate change is not in fact in our interest as humans.

IV – Anthropocentrism about value is difficult to avoid

It is difficult, however, to avoid some anthropocentrism about value. More specifically, it is difficult to avoid the view that there is no value that exists independently of human valuation, or the view that there would be no value without humans. I will later argue that this anthropocentric view, even if reflected in climate policy, does not necessarily lead to any environmentally harmful consequences. In this section I will not directly defend this form of anthropocentrism – instead I will show that attempts to avoid it are fraught with difficulty.

First, when we reason about value we unavoidably do so from an anthropocentric perspective. As Hayward puts it,

> Any attempt to construct a radically non-anthropocentric value scheme is liable not only to be arbitrary - because founded on no certain knowledge - but also to be more insidiously anthropocentric in projecting certain values, which as a matter of fact are selected by a human, onto nonhuman beings without certain warrant doing so. This, of course, is the error of anthropomorphism, and will inevitably, I believe, be committed in any attempt to expunge anthropocentrism altogether.
>
> (Hayward, 1997, p. 56)

There are two related issues identified by Hayward here: the issue of knowledge, and the issue of anthropomorphism. The first is connected with the perspectival anthropocentrism discussed earlier. This kind of anthropocentrism is impossible to avoid. We make decisions from a human perspective, and the information available to us is available to us because we are humans. As Williams argues, this has the further consequence that what we do must be based on human values, in the sense that these are values that humans can "understand themselves as pursuing and respecting." (Williams, 1995, p. 234) In this sense, then, any value that guides human action must be anthropocentric. Those who want to defend the idea that nature has value that is independent of humans also face some difficult epistemological questions. If this value can be seen or detected, then how come anthropocentrists cannot see it, and why (as is often claimed) has this value not historically been recognised (see Norton, 2005, p. 304)?

Second, as Hayward points out, when we see valuable things around us we are always in danger of projecting human values onto non-human things. How, say, are we meant to understand the good of another organism without reference to what is good for us? And how are we meant to, in a way that is not centred on us as human valuers, decide whether the good of that other organism is impersonally good, in the sense that we have agent-neutral reasons to promote it? For some, especially utilitarians, these questions are easy enough to answer. Utilitarian animal right advocates in particular (see especially Singer, 1995, 2011) seek to expand the circle of non-instrumental moral concern by pointing out salient features of humans that they take to ground the value of persons, such as sentience or the ability to feel pleasure and pain, and then point out that other organisms share these features. As Joseph Heath (2022, p. 6) has argued, however, these features are only

salient because we as humans see that they matter to us when we experience them. In effect, when engaging in this expansion of the circle we start from a set of human values and merely expand their application.

We cannot act based on value that is not in this sense anthropocentric. To do so we would need to understand the world from the point of view of non-human entities. This does not, however, mean that there can be no value that is independent of humans. Here, Donald S. Maier (2012) provides a useful distinction between anthropocentric value in the sense discussed so far in this section, and what he calls anthropogenic value, which is in some way generated by humans, or at least dependent on the actual or possible presence of human valuers. There could, conceivably, be value out there that we cannot easily see or grasp from our anthropocentric perspective, and that nevertheless exists independently of human valuers. When environmental ethicists, following Sylvan, look for non-anthropocentric value they tend to in fact be looking for this kind of non-anthropogenic value.

It is difficult to establish whether there can be non-anthropocentric[48] value in this non-anthropogenic sense. Even if there is value that is independent of human valuation, this is likely to part of a sentientist picture, in which no value is independent of some sentient being. This is the conclusion that utilitarians of various stripes, for example, are likely to arrive at. More "pure" non-anthropocentric and non-sentientist theories of value, such as ecocentric and biocentric ones, are difficult to defend.

To take one prominent biocentric example, Paul W. Taylor's (1986) influential theory holds that all organisms are "teleological centers of life", with goal-oriented activities, maintaining and reproducing their life. They systematically pursue their individual good from their own point of view. This, on Taylor's account, gives all organisms inherent worth, and gives us all prima facie

[48] I use non-anthropocentric value rather than non-anthropogenic value because this is the norm in the environmental ethics literature, although I agree with Maier that non-anthropogenic is a more accurate description.

duties not to frustrate or harm them in their pursuit of that good. All organisms that reproduce their life through these goal-oriented activities have value independently of humans. We then have at least one reason to not interfere with all such organisms, and not to harm them.

Holmes Rolston III's theory of value, meanwhile, is perhaps best described as ecocentric. On his view, sentient valuers are not required for value. Instead, value can be generated by systems that are "able to produce values" (Rolston, 1994, p. 29), including organisms, species, ecosystems, and even the entire earth. Perhaps only humans can observe value, but these other entities can also be sources of it. To Rolston, if we see, for example, an organism in nature making use of something to defend its own life, then that thing is valuable.

Both of these accounts are troubled by a normative gap: the fact that an entity has a good does not in itself mean that others have any reason, never mind a duty, to promote that good. Consider the COVID-19 virus. It seems like it has a good of the kind Taylor and Rolston are interested in. It mutates, infects people, and thrives, and seeks in various ways to do this ever more effectively. It seems unlikely, however, that we as humans have any reason at all to promote that good. Instead, we have many reasons to work against that good. As Darrel Moellendorff (2014, p. 49) puts it, "[f]rom the claim that species and ecosystems value themselves, there is no reason for concluding that we have reason to value them."

Adherents of these kinds of views assert that various entities have a personal good, and from there infer that there is some impersonal value involved. Persons are loci of value in a particular sense: if something is good for a person, then that thing is not valuable just to that person (personal value) but also valuable *sui generis*. It then properly guides the actions of other agents, acting morally. It is this latter kind of value we are properly interested in here, and it is what I refer to when I say "value". Only this kind of value has broader normative importance, as opposed to simply playing a prudential role for the entity whose personal value it is.

Moreover, an anthropocentric view of value can be defended from a value pluralist perspective. Christine M. Korsgaard (2003), for example, argues that "[t]he value of values comes from valuers, and not the reverse, and that fact – that we are the source of value – is also what makes us worthy of moral consideration. Humanity […] is the ultimate source of value." (Korsgaard, 2003, p. 85) She thinks that while animals can be sources of value too, their status as such depends entirely on us as humans. Meanwhile, even if sentient animals can be valuers too, this again brings us at best to sentientism, a view that still denies the presence of independent value in non-sentient parts of the environment. This, in fact, is the view that Korsgaard has adopted in later work (Korsgaard, 2018). She argues that value depends on sentient creatures making certain objects ends of their actions, thereby conferring value on them. Sentient animals can also do this, on Korsgaard's later view, because they, like humans, have selves with a degree of self-consciousness and continuity. All value, however, depends on these sentient selves, and therefore there can be no value that is independent of sentient beings.

I have not here shown that there can be no successful non-anthropocentric (or non-sentientist) theory of value – I have merely argued that the search for one is difficult, and may be misguided given our human perspective on the world. I am doubtful that such a theory can succeed beyond proving sentientism (the view that all value is dependent on sentient beings).

Critics of anthropocentrism, however, tend to not just claim that value anthropocentrists make a mistake about value – they also argue that this mistake, if it is widespread, leads to poor policy consequences. In the remainder of this chapter I will be interrogating this further claim. The question I will be asking is this: if we, and policymakers in particular, persist with an anthropocentric (or sentientist) view of value, what are the consequences?

V - The consequences of anthropocentrism about value in a context of climate change

As with the idea that humans are acting in their self-interest at the expense of other interests, the connection between anthropocentrism about value and environmental damage and climate change

is far from straightforward. Even if all value in some sense depends on humans, we have all sorts of reasons not to unnecessarily harm other organisms and to care about the environment. For one thing, and as already mentioned, as humans we depend on the environment for our survival. We require healthy, diverse ecosystems, and a source of clean water and food. Many of us also enjoy unspoilt wilderness and beautiful landscapes. We do not want them to be harmed, much like most of us hate seeing animals in pain. Clearly, many parts of the non-human environment are of immense instrumental value, and this gives us reasons to act in ways that protect non-human organisms and the places they live. Unspoilt nature, for example, could also be non-instrumentally valuable because it is of constitutive value to a good human life.

There are various possible reasons to be worried, however. Regardless of whether an anthropocentric view of value is in itself objectionable, it could at least conceivably have bad consequences. For example, it could lead us to a myopic worldview in which we fail to notice or properly appreciate damage to non-human interests before it is too late. This seems an apt description of climate change. For a long time, an industrialising world has focused on the fulfilment of human preferences and interests, the full consequences of which did not become fully apparent to the relevant decision-makers until irreversible damage to non-human interests (and, derivatively, to human interests too) had occurred. Moreover, a focus on human value may even now be blinding us to the long-term effects of continuing climate inaction on non-human and human interests alike.

Establishing this connection in a convincing way is difficult, however. Take climate change policy as an example. As Joseph Heath (2022, p. 1) has pointed out, recent work in climate ethics and on the philosophical aspects of climate policy makes almost no reference to the kind of traditional debates in environmental ethics that I discussed in the previous sections (see for example Broome, 2012; Caney, 2010; Gardiner, 2011; McKinnon, 2022; Shue, 2022). This is no doubt at least partly because of a widespread perception that the question of whether there is any value independent

of human valuation makes little difference to what we ought to do about climate change. Anthropogenic climate change is certainly bad for animals, plants and other parts of nature, but it is also bad for humans, and policymakers and philosophers know this.

More positively, humans also have anthropocentric value-based reasons to care about the ways climate change affects nature. Climate change may lead to breakdowns in the ecosystems that humans rely on. Moreover, it may be that pristine, thriving nature is valuable to humans because we need it to make sense of our own lives (Goodin, 1992). Much the same can be said about the protection and promotion of biodiversity – this, too, is straightforwardly very important for humans.

Value anthropocentrism, one might think, would at least preclude some ways of preserving nature. Take the rights of nature, the idea that parts of nature have rights against being destroyed or despoiled, or a positive right to be preserved (see Boyd, 2017). Humans, in this framework, have the responsibilities that these rights give rise to. Rights of nature are generally justified with reference to the intrinsic value of particular parts of nature, value that is independent of humans. However, as Patrik Baard (2024) has recently argued, even these rights can be supported from an anthropocentric perspective. Rights of nature are usually justified because some particular part of nature is valuable to a community of humans, perhaps as constitutive of a way of life, or of a cultural identity. If granting rights of nature is the best way to protect these, then they can be justified because of the importance of the protected thing to a human community. The rights are then grounded in a value that is entirely dependent on a group of humans.[49] On Baard's expressive legal view, these anthropocentric values come to be appropriately expressed through rights of nature.[50]

[49] These cases are often ones that feature irreplaceable relational value of the kind defended in chapter 2. Rights of nature could plausibly be a useful tool for protecting some instances of such value.
[50] This way of thinking about rights of nature is analogous to the way group rights can be justified even if groups do not have any moral status, because group rights can be a good way of protecting individual interests.

Generally, the view that all value is dependent on human valuation in some way does not imply that only human interests matter. It does not even entail that only humans have intrinsic value. A situation where some natural thing has intrinsic value despite only being valuable due to some human reaction to it can occur on various theories of value, including, for example, on Philip Pettit's (1991) view of response-dependence. If we adopt an approach like Pettit's we can argue that a natural thing is intrinsically valuable only if it intrinsically is such that an idealised human valuer would respond to it with a valuing attitude. On such an account, human responses are constitutive of the intrinsic value of the object, and that value is therefore dependent on human valuation. More broadly, the claim that value is dependent on human valuation, on its own, may have no necessary consequences at all for the question of what has value, or even what has final value. These questions will have different answers depending on which substantive theory of value one chooses to adopt. In this sense value anthropocentrism is content-independent: whether it is true or not has little if any impact on the question of what is valuable.

Another way of putting this point, making use of a pluralist fitting attitude approach to value, is to say that when I put to one side the question of whether there are things that are valuable independently of human valuation I leave open the separate question of whether there are some things that it is fitting to value in certain specific ways. This is separate from the question of which things it is appropriate to value in a general sense. Let us assume it is fitting to value an object, independently of the presence of any valuer. Whatever this thing is, someone who subscribes to value anthropocentrism can still find it appropriate to value it, for reasons that in some sense depend on humans, even if they do not recognise that it is independently fitting to do so. This is the sense in which value anthropocentrism is content-independent: it entails no judgement on what, on balance, can be valued.[51]

[51] On a pluralist account, the value anthropocentrist could still fail to understand the particular way in which it is fitting to value the thing. As such, the anthropocentrist could subject the thing to a valuing attitude that is appropriate for external reasons, but not fitting.

These are some general reasons to doubt that the anthropocentric view that all value is dependent on humans itself, even if widespread among policymakers, leads to undesirable consequences for the climate or the environment. However, opponents of this kind of anthropocentrism need not claim that those who have an anthropocentric view of value cannot explain why, say, climate change is bad. A more serious worry, instead, is that this kind of anthropocentrism precludes certain arguments environmentalists want to make against specific policies. Considering these kinds of arguments is a good way of testing whether value anthropocentrism really is content-independent, such that it does not determine any substantive questions of what is valuable.

Environmentalists often worry that anthropocentrism licenses certain objectionable or even dangerous policies that intervene in nature. They think only a non-anthropocentric view can provide some important arguments against such policies. Specifically, the thought is that only if there is intrinsic value in nature, or (to be more precise) value that is independent of human valuation, can we show why some policies are wrongheaded. The worry remains, then, that even if anthropocentric attitudes are not based on a mistake about value, and therefore not objectionable on non-consequentialist grounds, and even if they do not prevent us from understanding phenomena like climate change and biodiversity loss, they might still lead us to pursue some specific environmentally harmful policies.

In the remainder of this section I consider two interventionist policies that critics of anthropocentrism often want to oppose on the grounds that they embody an objectionable attitude towards the environment. I choose these cases because they seem particularly difficult for the value anthropocentrist: on the face of it, it looks like someone committed to an anthropocentric view of value will struggle to make these environmentalist arguments. The two policies are, first, the assisted migration of species and, second, Solar Radiation Management (SRM). They both involve extensive human intervention in the environment, and similar arguments have been made against both.

I – The assisted migration of species

Climate change is already causing plant and animal species to migrate to more hospitable areas, where they are subject to more suitable temperatures and conditions (Chen et al., 2011). For some species, however, this may not be possible – there may simply be no suitable location that is close enough, or that they can access without help. In such circumstances, humans could assist them in relocation.

This policy is more controversial than one might think. In particular, the policy is thought to involve objectionable human intervention in the natural environment. I consider two versions of this objection.

> *The Objection from Ecosystem Integrity* (based on Rolston, 2001): Species have intrinsic value by virtue of their role as part of the ecosystem they are located in. Assisted migration removes species from their ecosystem in an unnatural way. Assisted migration, then, undermines the intrinsic value of species by removing species from that system.

This objection holds that the assisted migration of species leads to a loss of value. Part of the value of species, on this account, depends on their role in their specific ecosystem. That value is lost if the species is removed from that specific ecosystem (see Sandler, 2010, p. 429). This version of the objection seems to rely on a non-anthropocentric value theory. To Rolston, the value of the species partly depends on its location. "It is not preservation of species that we wish, but the preservation of species in the system. It is not merely what they are, but where they are that humans must value correctly […] The species can only be preserved in situ; the species ought to be preserved in situ." (Rolston, 2001) For this objection to succeed there must be intrinsic value in nature. However, it is entirely possible for an anthropocentrist to allow such value. Perhaps, following the response-dependence view, species and their location in the correct ecosystem have intrinsic value that is constituted by the response of an idealised human observer. Even a preferentialist could plausibly think that there is value in species in specific locations, if enough

people have a preference that this be the case. Though this would no longer be a case of intrinsic value this does not seem to weaken the objection much.

What is more, there is a more plausible version of this objection that does not require the presence of intrinsic value at all:

> *The Green Objection* (Moellendorf, 2014, p. 190): An important aspect of the value of a species is that it is the result of natural processes, and not a human artifact. Assisted migration turns the species into a human artifact. Therefore, it undermines or destroys this value.

This objection might seem even more directly reliant on non-anthropocentric value. After all, what, one might ask, is the wrong of turning something into a human artifact to an anthropocentrist? A value theory like Goodin's (1992), discussed earlier in this chapter and in chapter 2, can answer this question. It can accommodate the objection while being anthropocentric. On Goodin's view, humans need some sense and pattern to their lives. This, in turn, requires that their lives are set in a larger context. The products of natural processes, untouched by human hands, provide us with that context. This is why untouched nature is highly valuable. The assisted migration of animals, in turn, changes what was a valuable species to a mere human artifact. This results in value loss. Goodin's view of value can support *the green objection*, despite being a value anthropocentric theory. Armed with this version of the objection, environmentalists can protest against the intrusive nature of the assisted migration of species, without having to defend an alternative to anthropocentrism.

More generally, *the green objection* could be supported by an argument to the effect that humans simply value natural processes that are in some sense (sufficiently) independent of humans. This view does not depend on Goodin's controversial theory of the good life, but can still be reached from an anthropocentric position. A view according to which something is valuable because humans value it is evidently anthropocentric. It can nevertheless support *the green objection* against the assisted migration of non-human species.

ii – Solar Radiation Management

A similar objection is sometimes put against the deployment of Solar Radiation Management (SRM). SRM is a form of geoengineering that, in various ways, decreases the amount of radiation from the sun that warms the earth by reflecting some of that radiation back into space (IPCC, 2023b, pp. 1489–1494). The most researched form of SRM, Stratospheric Aerosol Injection (SAI), involves the injection into the stratosphere of aerosol particles that reflect sunlight, preventing that sunlight from reaching earth. This could potentially be a cheap way of ensuring global warming is stopped or even reversed, but it remains highly controversial.

Among political theorists and philosophers there has been much discussion of moral hazard issues relating to SRM (Baatz, 2016; Schoenegger & Mintz-Woo, 2024) as well as the so-called termination problem (if SRM is pursued and then suddenly terminated without emissions having reached net zero there could be sudden and catastrophic global heating) (McKinnon, 2022, pp. 156–157; Svoboda et al., 2011). These arguments, however, tend to turn less on questions of environmental value, and focus instead on empirical disagreements, attitudes to risk, and sometimes on questions of global justice.

I will instead discuss a family of arguments where non-anthropocentric value plays a key role. These can be variously characterised as arguments from domination (the terminology I will use) or arguments from respect or hubris. From the point of view of these objectors, those who are in favour of geoengineering proposals such as SRM display an objectionable attitude or philosophy. Dale Jamieson, in an early attack on geoengineering, argues that even if a measure like SAI were successful, "it would still have the bad effect of reinforcing human arrogance and the view that the proper human relationship to nature is one of domination." (Jamieson, 1996, p. 332) Later Jamieson has gone on to argue that geoengineering "violates a duty of respect for nature"

(Jamieson, 2010, p. 441). Christopher J. Preston[52] (2011) makes similar claims: to him, there is value in there being parts of nature that are relatively untouched by human influence. SRM is wrong, then, because it affects the climate of the entire earth, meaning that there would no longer be such untouched parts of nature.[53]

To be more precise, what Preston and Jamieson in fact object to in this case must be *intentionally* affecting the entirety of nature. Because of our greenhouse gas emissions, the climate, and nature to the extent that it is affected by the climate, is already affected by human action – it may even be the case that there no longer are any parts of it that are not meaningfully affected by climate change. Until now, however, most climate change has happened unintentionally. Earlier it was an unforeseen side-effect of other activity, and in recent decades it has become a foreseen side-effect. Widespread human impact on the climate means that there is no longer much, if any, nature that is even relatively untouched by human influence. This means that the value of having such nature has been lost. Until now, however, most climate change has happened unintentionally, as a side-effect of other activities. Earlier it was an unforeseen side-effect of other activity, and in recent decades it has become a foreseen side-effect. Geoengineering, by contrast, involves using the earth's climate systems in an instrumental fashion. What Jamieson and Preston object to, then, is *intentionally* affecting the entirety of nature. On their more precise view, there is value in there being parts of nature that are relatively untouched by *intentional* human influence. There is still such value, and geoengineering, if implemented, would lead to its loss.

Their argument can now be stated like this:

> *The domination argument*: There is value in there being parts of nature that are relatively untouched by intentional human influence. SRM would lead to the loss of this value.

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[52] It should be noted that Preston ultimately concludes that geoengineering can be permissible in case the benefits outweigh the badness of treating nature in this way – on his view, it can be the lesser evil.
[53] My discussion of the domination argument, particularly of the form it takes in Preston, is indebted to some unpublished work by Lukas Tank and Christian Baatz.

In this form, however, the argument can rely on value that is dependent on humans. After all, the idea that human intentions make some kind of difference to the amount of value there is in nature evidently ties that value to the mental states of human agents. This means that we could, for example, adopt a view of value according to which having parts of nature that are untouched by intentional human interference is valuable because this is (to follow Goodin) necessary for us to make sense of our lives and position in the world. Alternatively, we might think that a certain valuing response is appropriate only for nature that is untouched by intentional human action, and that this response (that an idealised observer would have) is constitutive of the value of such nature.

We have, then, yet another case in which, despite surface appearances, the debate over whether there is value that is independent of human valuation is not relevant. Environmentalists can make *the domination argument* against geoengineering while being anthropocentric about value. Value anthropocentrism is not necessary for this argument against SRM, but it is compatible with it.[54]

I have chosen to discuss these two policies, and these two objections, because they are the objections that most clearly seem to rely on non-anthropocentric notions of value. I have shown that they do not, in fact, need to rely on a non-anthropocentric value theory. This means that environmentalists can sustain these objections while being value anthropocentric.[55] This is fortunate, for as I argued in section IV, anthropocentrism about value can be difficult to avoid.

[54] Interestingly, this argument against SRM does seem to require the perspectival kind of anthropocentrism discussed earlier in this chapter. Only from an anthropocentric perspective can human intentions, and human mental states more broadly, determine how much value of a specific kind there is in nature. In this sense, the kind of value this argument appeals to must be anthropocentric, even if it is not anthropogenic.
[55] Note that I have said nothing about whether these objections are compelling. As it happens, I do not believe they are. Their reliance on an unsuccessful non-anthropocentric account of value, however, is not why they fail, as they do not need to rely on any such account.

VI - Conclusion

In this chapter I have sought to get to the heart of what worries about anthropocentrism, particularly in a climate change context, are about. I have moved from the more general idea that humans are acting in their self-interest, to the view that we wrongly think all value is dependent on us. I have argued that these claims are difficult to put convincingly. I have also argued that, even if they are true, these forms of anthropocentrism do not seem to cause harmful climate outcomes or prevent us from arguing against environmentally harmful or controversial policies.

First, I argued that even if it is objectionable for humans to prioritise their self-interest, we evidently are not doing that in the context of climate change. Moreover, failing to adopt a human perspective would make it more difficult to understand and act against climate change. I then focused on the more precise claim that we wrongly think all value is dependent on human valuation. I argued that it is difficult to show that this is a mistake, and that this kind of anthropocentrism can be difficult to avoid. I also argued that such a commitment to anthropocentrism about value need not lead to any negative consequences for the environment, nor does it preclude prominent arguments against interventionist climate policy. As such, we do not need to abandon anthropocentrism in order to preserve value in the face of climate change.

These are not the only possible forms of anthropocentrism. The field of environmental ethics contains a rich literature of claims about and around anthropocentrism, and there are certainly prominent versions of the claim that I have not even been able to mention here. The focus on anthropocentrism about value, however, is important. As I have argued throughout this thesis, the main objective of climate policy should be to preserve those things that we have most reason to preserve – that is, those that are highly valuable in some way and also under particular threat. There are certainly many mistakes about value that we could be making that would lead to unnecessary losses of value. In this thesis, for example, I have argued for the importance of not overlooking irreplaceable value, and cautioned against neglecting the value of future autonomy.

Anthropocentrism about value, however, is not this kind of mistake. It does not have the deleterious policy implications that neglecting these other forms of value has.

Conclusion

Anthropocentrism, as I argued in the final chapter, is not an enemy of effective climate action. Instead, we as humans ought to recognise our central responsibility to act to protect the environment from the effects of anthropogenic climate change. This thesis has been an argument about how we ought to do so. Most importantly, we cannot do what we must, and what is right, without seeing that value is plural – it comes in many forms and appears in many places. How we should act must depend on what kind of value it is. As we do this, we must not abdicate our responsibility and seek to leave our environment untouched; it is already too late for that. Instead, we must understand and take seriously our position as the only species and generation that can act, and also our position as trustees of the rights of those who will come after us.

As humans, we have always left our mark on our environment, and we both must and will continue to do so. If you follow the river down from Binsey, through Oxford, Berkshire, and London, you will eventually arrive at the vast expanse of the Thames Estuary. At Whitstable in Kent, where, on a good day, you can see the sedimented waters of the Thames mingle into the deeper blue of the North Sea, the shingle beach is broken up by wooden groynes. These barriers, perpendicular to the sea front and reaching far into the water at high tide, offer welcome protection from the wind for those of us there too early in the season. They were built, however, to reduce erosion of the beach and seawall, thereby preventing flooding. Groynes have been used for this purpose in Britain since at least the 16th century.

They have created a new landscape: scarred, in a way, but distinctive, and something that intuitively belongs on the British seaside. As we combat climate change we can hope to, similarly, create new things of value, so that we are not just left to rue losses that we have caused. Some measures intended to preserve value, like the nearby behemoth, the Thames Barrier, are perhaps purely utilitarian, only likely to conserve rather than create value. Others, we can hope, will in time become valued by local communities, and part of new, sustainable ways of life.

I have sought to show, in this thesis, that climate change threatens a broad range of valuable things. We risk losing lives and livelihoods. The lives many people live in the most vulnerable parts of the world are at risk of becoming nasty, brutish, and short, devoid of many of the valuable things that make lives worth living. We can still limit these losses. Importantly, we must effectively mitigate the effects of climate change. We must structure our societies in new ways that are more sustainable, and be ingenious in the methods we pursue to reduce greenhouse gas concentrations in the atmosphere.

The focus of this thesis, however, has been on losses we can no longer avoid. As I have argued, we are already experiencing the loss of a wide range of valuable things, through droughts, heatwaves, floods, and extreme weather events. We do still have some control over what losses we allow. As we do this, we must take the plural nature of value, and what people today and in the future have reason to find valuable, into account. The non-ideal context that we find ourselves in means that we cannot hope to radically change how most people think about value. We can, however, instead take these beliefs into account.

In the introduction to this thesis I raised some questions about how we ought to understand the value that stands to be lost, and how we might act to preserve it. I hope to have made some progress towards answering them now. I have argued that we should understand the potential loss of cultural sites such as Skara Brae in Orkney, threatened by coastal erosion, as a case of irreplaceable value. Many people have built a unique valuing relationship with sites like these, and this gives us reason to prioritise their preservation in adaptation policy. Similarly, we should prioritise the preservation of threatened ways of life, such as that of reindeer herders in Lapland. Communities have build highly valuable relationships with these ways of life, and those cannot readily be replaced.

I also asked why it matters that we do not leave future people with far less untouched, thriving nature, given that they may well get used to their environment and value it either way. The answer

is that we ought to care about their autonomy. To do so, we need not just leave future generations with adequate options, we must also refrain from determining their conceptions of the good in this way.

Most of the questions I asked in the introduction and throughout this thesis converge around questions of what we ought to preserve in the face of climate change. I have not given one comprehensive answer to this question. Instead, I have given a series of answers. We should prioritise the preservation of those things that have irreplaceable value. We should also preserve things that are potentially valuable in diverse ways, and even things that do not seem especially valuable for us today. I have also made arguments about how we ought to do this. We should do it with an awareness of the plural nature of value. We should also do it so that we respect the autonomy of future people. Finally, we can do this from an anthropocentric standpoint.

I started, in chapter 1, by laying the groundwork for my argument. The things that stand to be lost to climate change, and indeed that have already been lost, are various. They are also valuable in different ways, as well as to different degrees. This has important implications for how we ought to respond to climate change. The non-ideal nature of climate change means we face a motivational constraint: we cannot hope to change deeply held beliefs about value in the time we have available. This means that political philosophers as well as policymakers must take into account what people in fact value. A value pluralist approach, as I have sought to show throughout this thesis, can do this while steering a middle course between the easily applicable but mistaken value monism of climate economics on one hand, and the intractable questions and problems of environmental ethics. In doing so we must take seriously the idea that some values are incommensurable, but this need not make rational decision-making impossible.

In chapter 2, I defended the first key pluralist commitment: that some things have irreplaceable value. The intuition that some value cannot be replaced if it is lost tracks a genuine moral consideration, and it is important that it is accounted for in adaptation policy, as we decide which

substitutions of valuable things to allow. Genuinely irreplaceable value is often found where a group or community of valuers have a long-lasting, value-conferring relation to an object. Important examples include ways of life, cultural objects, and practices. In the context of adaptation policy, we should focus on preserving these. When they are lost, we lose value that cannot be replaced. Climate change threatens the ways of life of many communities, and it also threatens places of great cultural importance. These are likely to have irreplaceable value, so we should prioritise their preservation.

I then turned to the future. Once we are gone, and once, we might hope, the earth is no longer experiencing a climate crisis, what do we want the world to look like? In chapter 3 I suggested that we would want to ensure, as far as we can, that those who succeed us can live autonomous lives. I formulated and defended the Trusteeship Principle, which I argued we should use to judge our policy choices for their effects on the autonomy of future people. Importantly, we should, as far as possible, both leave future people free to form their own conceptions of the good, and with the options they need to pursue that good once formed. We need to do this in our role as trustees of the autonomy rights of future people.

I then, in chapter 4, turned to the question of what it would mean to leave future people with a diverse range of options, so that they are able to live autonomous lives. I made use of the option value framework to argue that we are at risk of undercounting or neglecting the value of delaying irreversible losses of various things that might become valuable in the future. As such, adopting a value pluralist approach, we should aim to preserve a range of things that are valuable across different dimensions, and that have distinct potentially valuable properties. We should seek to preserve diversity both within and across different categories of potentially valuable things.

These two chapters do not, of course, offer a comprehensive overview of our responsibilities towards future generations. We are currently treating future generations unjustly: we are not saving enough resources for them to meet their basic needs, and we are not doing enough to act against

climate change. This will lead to unnecessary misery and death in the future. Autonomy, however, is a prerequisite for a certain kind of personhood, and is therefore key regardless of what kinds of lives future people will find themselves living. If we therefore are to act in an ethically more acceptable manner then we can do worse than start from the insight that future people must be autonomous too. We should also account for the plural kinds of value that will and should exist in the future.

In the final chapter my focus was on the consequences of a different, but also commonplace way of thinking about value. I argued that anthropocentrism need not hinder effective climate policy or lead to avoidable losses of value in nature. I did so by focusing on two conceptions of anthropocentrism. First I discussed ethical anthropocentrism, the idea that as humans we wrongly prioritise our interests over non-human interests. I argued that, in the context of climate change we are not in fact acting in the interests of humans as a class. I then turned to value anthropocentrism, or the view that all value depends on humans. This kind of anthropocentrism is difficult to avoid, and it does not on its own justify poor policy choices.

This is what I have done in this thesis. There are many things that I have not done. Above all, I have provided no comprehensive decision rule or policy evaluation method that should be used when deciding what to preserve from climate change. In chapter 2, for example, I argued that we have a strong pro tanto reason to prioritise the preservation of irreplaceable value over other kinds of value. I did not provide a rule for when other reasons can, on balance, trump this pro tanto reason. Still, we can make progress already by noticing that this reason applies to us, and by taking it into account in our decision-making.

Similarly, in chapter 3, I argued that we should use the Trusteeship Principle to evaluate our actions for their effects on future people. This Principle includes a requirement to avoid excessive autonomy costs for the current generation. I did not, however, define this excessive level. Instead I suggested that we should decide it in our roles as trustees of the rights of future people. Again,

however, it is an important step forward if we, in our generation, realise that this is our role, and adopt this less self-centred approach as we make decisions that impact the core autonomy-related interests of future people.

In chapter 4, I did not provide a schema of the specific things that should be preserved in order to ensure that future people have access to a diverse set of options. What I did, however, was to list a range of mistakes that could lead us to underestimate the option value of delaying irreversible losses in the presence of uncertainty. Avoiding these mistakes would reduce the amount of value lost.

Chapter 5 does not show that anthropocentrism about value is the correct way to think about value. Instead, I leave open the option that there may be some value that exists independently of human valuers, and that would exist even without the presence of any humans or other sentient beings. I do, however, argue that the question of whether or not such value exists need not have any bearing on climate policy. Even if we assume that such value does not exist we need not act in environmentally harmful ways.

So, in spite of these limitations, I have been able to make important progress from some very broad and minimal commitments to do with value, towards a more informed and realistic approach to the questions we unavoidably face because of the climate crisis. I have sought to show that there are realistic ways to better account for the plural nature of value, so that we can avoid unnecessary losses of important forms and instantiations of value. I have also laid the foundation for further research that could further refine and determine how value can better be preserved.

What mechanisms, for example, can we use to ensure that those things we have particular reason to preserve are given greater weight in policymaking? In chapter 5 I briefly mentioned rights of nature as a mechanism that could be used to make the preservation of things with irreplaceable value easier. This proposal, and others like it, is worthy of more careful consideration.

The notion of trusteeship discussed in chapter 3 is also worthy of further elaboration. How desirable is it to have specific people or institutions, such as ombudsmen or citizens' assemblies, who are responsible for protecting the rights of future generations? What powers should such institutions have? These are questions I have not answered, but they are important and suitable questions for empirically informed, engaged political philosophy. There is also scope for further investigation of how the methods of conservation biology can better accommodate a diverse range of valuable things, as well as plural values. This way we can avoid the losses of option value discussed in chapter 4.

There are also many important open questions about how better thinking about value, and more effective climate policy, can be implemented in a politically viable manner. The best policy advice is useless if it falls on deaf ears. Studies of how to formulate strong but politically possible climate policies are (and should be) anchored in a specific context and informed by social scientific empirical evidence. Depending on the context, political viability can introduce strong constraints on theorising that is intended to be of practical use. Still, there is important work to be done on how climate policy that attends to value pluralist beliefs can be politically palatable and implementable. As I argued in chapter 1, however, policy informed by value pluralism has an advantage here, because it better corresponds to common beliefs about how value works than monist approaches, for example, do. It is also helpful here if we do not need to abandon an anthropocentric view of value, as I argued in chapter 5.

In a sense, my argument in this thesis is vindicatory of a certain folk view of value. Value pluralism helps us better understand the value lost to climate change, but also how valuers think about and react to the losses that our current crisis is bringing about. Often those who stand to suffer have the best understanding of the value that is being lost, whether this be the value of a way of life or of a significant species or landscape. We should not try to change the way people think about the value around them; instead, climate policy must change so more of that value can be saved.

I regret that I have not done much in this thesis to aid our fight against climate change. The havoc and suffering that our manmade climate crisis is bringing is a great evil of our time. There are many things that could be done to reduce suffering, and to make the future world a better place, one that contains more value and that is a worthier home for us and for those who come after us. There are many things that should be done. As a generation, we are manifestly failing in our duties, both to each other and to our successors, and in the process we are creating a world that is less valuable than it need be. The reasons we are failing are largely not ones to do with poor policy advice, or with a lack of careful thinking about the problems we face. Instead, as a human community we are manifestly and disastrously lacking in our resolve. Better policy advice will on its own not change this, and neither will the most pure-hearted reflection on what we ought to do, and what we ought to save. We can but hope that one day soon the speed of action and the rate of progress will rise to a level commensurate with the crisis. Until then we must continue hoping for, and demanding, better.

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