



Food, the Environment & the State: A Political Theory of Sustainable Diets

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A thesis submitted in partial fulfilment of the requirements for the degree of

Doctor of Philosophy

2023

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Department of Politics and International Relations, University of Sheffield

August 2023

Word count: 70,320

Abstract

It is widely understood that the global food system is responsible for a large proportion of anthropogenic environmental impact. With this understanding, in recent years the notion of ‘sustainable diets’ has become widespread, both in public discourse and amongst scholars. Today, there exists a vast literature in the natural and social sciences attempting to quantify the environmental impacts associated with different foodstuffs or agricultural practices, and investigating the policy mechanisms available for the promotion of so-called sustainable diets. Up until now, however, there has not been comparable normative work in the field of political theory. This thesis sets out to fill that gap. The overarching question I address is: should states promote sustainable diets? Using Martha Nussbaum’s Capabilities Approach as a normative foundation, in the first part of the thesis – chapters 1 and 2 – I define ‘sustainable diets’ and argue that states have a pro tanto duty to promote them. Then, in the second part – chapters 3-5 – I argue states must balance this duty against other important considerations: food security, access to adequate ‘eating experiences’, and access to ‘dietary identities’. Finally, in chapter 6, I explore how states can promote sustainable diets and give some brief comments designed to guide and evaluate any such efforts.

Acknowledgements

Writing this thesis has often felt like an impossible task. While the work and any errors it may contain are my own, I could not have completed it without the support of a remarkable group of people. I'd like to take the opportunity to thank some of them.

The first person I wish to thank is my supervisor, Alasdair Cochrane. Alasdair, the support you have given me over the years has far exceeded any reasonable expectations. If I ever entered our (often weekly!) meetings dejected by lack of progress or stuck on an idea, I left them reinvigorated, inspired by your curiosity and clarity of thought. There are many moments I'm certain I would have walked away from the project, if it was not for your calm advice and reassurance. I cannot thank you enough.

I'd like to thank Chris Bennett, my secondary supervisor, who has always been generous with his time and provided astute guidance at just the right moments. I am also indebted to the Grantham Centre for Sustainable Futures, for funding this project and for making so many resources available to me for my development, as both a scholar and advocate for environmental justice.

And of course I must thank my family and friends, without whom work would be impossible and life empty. Mum, for the hot water bottles and the heroic proofreading effort. Grum, for picking me up, brushing me off, and talking next steps. Jack and Jed, for always reminding me where to find my towel. Juliet, for the countless pomodoros, and for having faith in me when I didn't have it myself. Jumbo. (Putting it in print is high thanks indeed). Liam and Caroline, for brightening my days with good food and green-fingered distractions. Rosie, Dan, Will, Pete, Elu, Kirst, Nadia, Maria, Josh, and Sally, for reminding me how good life can be away from my desk.

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Introduction: sustainable diets and the state

Diets nourish us and provide the energy we need to go about our lives. They yield moments of pleasure and satisfaction, as well as connection to cultures and communities that we hold dear. They are as foundational to human wellbeing as love, happiness, and friendship. Unlike those concepts though, diets are also a form of material consumption. As such they must be brought into being: in every country, edible plants and animals are cultivated, imported and exported, stored, transported, and cooked in countless ways before arriving at the mouths of eight billion eaters. Crucially, the environmental impacts associated with this global food system are substantial. It accounts for around a third of global greenhouse gas emissions. Because the vast majority of land used by humans is dedicated to agriculture, the global food system is also the primary driver of biodiversity loss. Fertiliser and pesticide run-off mean it is responsible for substantial pollution to soil, rivers, and oceans. The irrigation required to sustain plants and animals accounts for over two thirds of human freshwater use.

Today, there exists a large literature in the natural and social sciences attempting to, for example, quantify the environmental impacts associated with different foodstuffs or agricultural practices, and investigating the policy mechanisms available for the promotion of so-called sustainable diets (e.g. Springmann, Wiebe, *et al.*, 2018; Hebinck *et al.*, 2021; Scarborough *et al.*, 2023). Up until now, however, there has not been comparable normative work in the field of political theory. This thesis sets out to fill that gap. The overarching question I address is: should states promote sustainable diets? Using Martha Nussbaum's 'capabilities approach' as a normative foundation, in the first part of the thesis – chapters 1 and 2 – I define 'sustainable diets' and argue that states have a pro tanto duty to promote them. Then, in chapters 3 to 5, I explore how states ought to balance their duty to promote sustainable diets against three other duties they have with regard to food: to ensure food security, to allow access to adequate 'eating experiences', and to adequately respect citizens' 'dietary identities'. Finally, in chapter 6, I explore how states can promote sustainable diets and give some brief comments designed to guide and evaluate any such efforts.

This introduction comprises four sections. First, I set out the context that informs this thesis, describing how in recent years the notion of 'sustainable diets' has attracted increased attention from the general public, scholars, and policy makers. Second, I survey the scholarly work that has been done with regard to the political theory of sustainable diets. Here, I mostly focus on one paper, using the resulting discussion to frame and contextualise the direction and purpose of this thesis. Third, I describe my methodological approach. Specifically, I comment on my approach to 'political theory'; I introduce Martha Nussbaum's capabilities approach; and I discuss who I consider to be 'subjects of justice'. Fourth, I provide summaries of the following six chapters.

1. Contextualising the promotion of (un)sustainable diets

What do I mean when I say ‘diet’? At its most basic, ‘diet’ just refers to food that a given subject usually eats. The subject can be an individual – I eat a certain diet, which is probably at least a little different to yours – but in this thesis I am almost always talking about the diets of *groups of individuals*. Of course, since no two individuals eat exactly the same food, the diets of groups will never be entirely homogenous. Nonetheless, diets can be categorised according to certain characteristics. Diets are commonly differentiated by the type and quantity of the foodstuffs that are eaten. The NHS, for instance, describes the ‘Mediterranean diet’ as “high in vegetables, fruits, legumes, nuts, beans, cereals, grains, fish, and unsaturated fats, and low in meat and dairy” (NHS, 2020). If a group eats that particular set of foodstuffs, then they eat a Mediterranean diet, if not then they eat a non-Mediterranean diet.

But diets can also be differentiated from one another in ways other than their constituent foodstuffs. For instance, we might contrast a ‘cheap’ Mediterranean diet, constituted by ingredients bought from a value supermarket, with an ‘expensive’ one, constituted by ingredients bought by one’s personal chef at the farmer’s market. From the nutritionist’s perspective, these two diets are the same (ignoring, for the sake of argument, the possibility that the quality of food differs depending on its source), but in an important sense they are different diets. They are different because diets can be differentiated from one another by characteristics attached to the foodstuffs that they are composed of; in this example the characteristic of ‘cost’.

Core to this thesis is the idea that groups’ diets can be differentiated from one another according to their *environmental sustainability*. Later in the thesis I establish a definition of (un)sustainable diets, so here some contextual remarks about the environmental impacts of diets will suffice. When I talk about the environmental impact of diets, I am talking about the various effects on the environment that occur along the supply chain of any given diet; i.e. the points at which it is produced, distributed, and processed. I am talking, for example, about the freshwater use of crop irrigation, about the rubber particles of the Tesco delivery truck’s tyres, and about the local air pollution caused by the wood-fired pizza restaurant. Of course, *all* diets are associated with at least some environmental impact. However, the interesting – and morally salient – thing about diets is that some are associated with different environmental impacts than others. Perhaps the starkest – and the most well-known – example of this relates to diets containing animal products. Meat and dairy provides only 13% of calories and about 30% of protein globally, yet are responsible for nearly 85% of the greenhouse gas emissions associated with food production, as well as a disproportionate level of other key environmental impacts (Tilman and Clark, 2014; FAO, 2017; Scarborough *et al.*, 2023).

Within the natural sciences, there is a general consensus that it would be advantageous for many human populations to change their diets to ones associated with proportionately less environmental impact (e.g. Ripple *et al.*, 2013; Machovina, Feeley and Ripple, 2015; Rosi *et al.*, 2017). Numerous international organisations, such as the International Panel on Climate Change, the World Wide Fund

for Nature, and the United Nations Food and Agriculture Organisation, have called for a transition to more sustainable diets (FAO, 2019; WWF, 2020; IPCC, 2022b, p. 39). The public sphere is witnessing calls for the embrace of sustainable diets, originating from figures ranging from pop stars to racing drivers. There is also increasing awareness of the issue amongst the general public; in some countries the number of people claiming to follow plant-based diets has increased in recent years, a fact that is partly attributable to increased consciousness of the environmental impact of animal food products (Hancox, 2018; Prescott-Smith and Smith, 2022). Despite this however, there is a consensus amongst policy experts that *government intervention* to promote sustainable diets will be required (e.g. Climate Change Committee, 2023, p. 25).

For some people, the notion of state promotion of sustainable diets evokes the image of an overly paternalistic ‘nanny state’, or, even worse, of a ‘sausage Stasi’ conducting raids on the fridges of otherwise innocent citizens (their only crime a life-time love of toad in the hole). Such worries are, to a certain extent, understandable; diets are commonly understood as intrinsically personal things, with the result that state interference is viewed as a *prima facie* unacceptable intrusion into the private lives of individuals. However, while some personal dietary decisions *are* surely outside the realm of legitimate political action, others *do* warrant intervention. Food is not manna from heaven; it has real, morally significant effects associated with it. A core argument of the coming thesis is that the environmental effects associated with diets do sometimes place them squarely within the domain of legitimate political action. It should also be highlighted that state promotion of sustainable diets does not have to occur at the point of the individual eater. There are, as it were, many steps available to governments before they start raiding McDonalds and arresting its customers.

While I offer a more thorough taxonomy later in the thesis, state policies to promote sustainable diets can broadly be divided into two categories: those that affect the supply of diets, and those that affect demand for them. Interventions on the demand side exist on a spectrum based on their voluntary or coercive nature. In recent years, some policymakers have made efforts to influence citizens' eating habits in favour of more sustainable diets, with the majority of these initiatives being situated at the voluntary end of the intervention spectrum. For instance, various public health bodies around the world have begun to change dietary guidelines to take into account sustainability concerns. China has recently changed its guidelines to encourage the consumption of chicken over more environmentally impactful meats, while in 2015 Brazil’s guidelines advised citizens to eat animal products sparingly in order to benefit the environment (Alves Melo, 2015; Xiaoying, 2023). Slightly more coercive forms of demand-side intervention, such as taxes on particularly environmentally burdensome foods or changing the food served in publically-run organisations, are sometimes discussed in policy circles (e.g. Vainio, Irz and Hartikainen, 2018; Dibley, 2021). However, to my knowledge no such policies have been implemented anywhere and they tend to be controversial amongst the general public (Demski, Cherry and Verfuert, 2022, pp. 10–11; Richter *et al.*, 2023). Similarly, no policy makers are seriously discussing implementing truly coercive demand-side policies, such as rationing or banning certain

foodstuffs. Demand-side interventions should also be situated in their proper context, which is that states often *encourage* the consumption of more environmentally impactful diets. For instance, the dietary guidelines of most states recommend the consumption of various animal products for the sake of their citizens' health.

State policies aimed at promoting sustainable diets on the supply side are implemented at various stages of the diets' supply chain to encourage sustainable practices or discourage unsustainable ones. Examples of policies include subsidies and incentives, funding for research and development, certification programmes, environmental standards and regulations, as well as more coercive actions like the banning of particular types of production. States have a long history of guiding agricultural outcomes through policy, and in the 21st century sustainability is emerging as an important priority, at least rhetorically, alongside more traditional priorities like food security and economic stability. For example, the bloc of EU countries has recently updated its Common Agricultural Policy so that 40% of its budget – which itself accounts for roughly a third of the EU's total budget – will be dedicated to 'climate relevant' activities (Boix-Fayos and de Vente, 2023). However, as with policies affecting the demand side, existing policy concerning the supply side warrants examination. For instance, a recent report from the UN's Food and Agriculture Organisation found that many existing agricultural support mechanisms actively encourage environment-degrading practices (FAO, 2021a).

2. Contextualising my contribution

Some ethicists have long been engaged with how the environmental impacts of food ought to guide *individuals'* dietary decisions. For instance, over two decades ago Michael Fox argued that, due to a responsibility to “minimize our impact on the planet and the amount of harm we do”, individuals ought to eschew the “eco-destructive” meat industry in favour of vegetarianism (Fox, 2000, pp. 164, 172). More recently, as the idea of changing one's diet to minimise impact on the environment has become more prominent, with various scholars exploring the practical and conceptual difficulties that individuals face when trying to reduce the environmental impact associated with their diets. For example, Mark Budolfson argues that a diet made up of what he calls “vegan staples” can sometimes have a higher “harm footprint” than comparable omnivore diets (Budolfson, 2016, p. 170). Meanwhile, Anne Barnhill argues that ‘buying local’ is an overly simplistic approach to making the food system more sustainable and might even be a counterproductive prescription for activists to advocate for, if doing so undercuts public support for policy change (Barnhill, 2016).

The obvious worry with individual ‘ethical consumerism’ is the limited causal effect of one's personal consumption habits in the face of the massive scale of the global food system (e.g. Garrett, 2007; Chignell, 2016). This has led some to argue that individuals have duties as citizens, rather than as consumers, to try to promote *government policies* that would make the food system more environmentally sustainable (e.g. Ankeny, 2019). After all, governments have a wide array of actions at their disposal that mean they have substantial power over the *aggregate* environmental impacts

associated with the diets of their citizens. A natural step, then, is to approach this topic from the perspective of political theory; the discipline that is, broadly conceived, concerned with the normative study of the state.¹ There is, however, very little political theory that focuses on the subject of how the state should respond to the environmental impact of diets. Indeed, as far as I am aware, Sarah Kenehan is the only scholar that has addressed this question head-on, in her book chapter ‘Liberal political justice, food choice, and climate change: why justice demands we eat less meat’ (Kenehan, 2019).² In the rest of this section, I engage with that chapter. I first explain her argument, before setting out how my project both differs from her argument and expands upon it.

Kenehan, using the US as an example, articulates an argument in favour of states ceasing to support the practice of industrial animal agriculture due its environmental impact. She first sets out some context. Industrial animal agriculture – what she calls ‘factory farming’ – in the US causes substantial environmental impacts. Those impacts cause significant and unequally distributed harms to individuals both in the US, through various types of local pollution, and abroad, through contributing to climate change. The US state actively supports these harms by supporting production, through mechanisms like subsidies and buyback programs, and consumption, through advertising campaigns. Given this context, Kenehan provides two arguments for reducing industrial animal agriculture in the US, one grounded in a state’s duties to its own citizens, the other in its duties to those abroad. First, she notes Rawls’ position that states ought to order society so that all citizens have access to what he calls ‘primary goods’; substantive freedoms or material resources that enable each citizen to work towards their own conception of the good. She argues that any reasonable conception of primary goods would include freedom from environmental harms, including those caused by factory farming. Therefore, she argues, a just society would not tolerate domestic factory farming. Her second argument relates to the impacts that factory farming has on people abroad. Here, she draws on Rawls’ *Law of Peoples*, in which he argues that state-to-state relationships ought to be predicated on a commitment not to undermine other state’s ‘well-orderedness’.³ A well-ordered state is one “regulated by publicly known and accepted principles of justice and in which the institutions and structures of that society reflect those principles” (Kenehan, 2019, p. 244). Kenehan argues that factory farming, in particular its contribution to global warming, *does* undermine the well-orderedness of other nations, for instance by threatening their ability to maintain human rights standards and public political infrastructures.

¹ A similar point has been made by Bonotti and Ceva, whose work on the state promotion of healthy diets is adjacent to this project: “many of the values and goals that people aim to promote through their individual choices with regard to food... can best be pursued and secured through the coercive machinery of states and supranational institutions” (Ceva and Bonotti, 2015).

² On the face of it, another scholar who *seems* to address the question is Mark Budolfson, in his book chapter ‘Food, the environment, and global justice’ (Budolfson, 2018). However, he is concerned with what sort of food system ought to be promoted and the apparent limits to the moral force of ‘sustainability’ as compared to the need to produce sufficient food for the global population, rather than with exploring *why* states ought to promote sustainable diets. As such, discussion of his work is best left until chapter 3 of this thesis.

³ See (Rawls, 1999)

Given both these arguments, Kenehan concludes that:

...it is fundamentally unjust for the U.S. government to subsidize the production and promote the consumption of animal products. Moreover, taking these obligations seriously means that there are very strong reasons of justice to limit the production and consumption of animal products entirely. (Kenehan, 2019, p. 247)

I will say from the outset that I find the core claim of Kenehan's argument persuasive: liberal states can be (and *are*) bound by duties both not to promote *and* to actively limit particular agricultural practices due to the environmental impacts associated with those diets. Indeed, in some important ways, this thesis is aligned with Kenehan's argument. Both of us are concerned with the distributive implications of diets and their environmental impacts. Both of us are concerned with setting out an 'ideal theory' of how states ought to act in relation to the environmental impacts of diets (Kenehan does not say this explicitly, but I think it's fair to say that proposing the abolition of US factory farming locates her squarely within this domain). Perhaps most importantly, both of us are concerned with pursuing a 'justice-led' approach; we are ultimately concerned with how states ought to organise themselves and their citizens, given certain morally-important facts about the environmental effects of diets.

Yet there are important differences between my project and Kenehan's. The most obvious one is that we build our arguments upon different normative foundations; where she builds her argument on a Rawlsian framework, I employ Martha Nussbaum's capabilities approach. I introduce the capabilities approach in the next section, as well as explaining my rationale behind employing it. Apart from our different normative starting points, without the space constraints faced by Kenehan in her single chapter, I can be more ambitious in three main respects.

First, Kenehan's focus on food produced on factory farms is, in my opinion, too narrow. It is true that factory farms are very often responsible for considerable environmental impacts, but rearing livestock using more conventional means is by no means environmentally neutral and can even entail greater impacts. (For instance, all other things being equal, a grazing cow produces more greenhouse gas emissions than one confined to a feedlot). Perhaps with this sort of worry in mind, towards the end of the chapter Kenehan broadens her argument to include all foodstuffs "generated via animal agriculture in industrialised parts of the world" (Kenehan, 2019, p. 246). Yet this is still too narrow a net. After all, as noted by Budolfson, some non-animal derived diets cause the same or even worse environmental impacts than those containing animal products, depending on how they are produced, transported, and prepared (Budolfson, 2016). The carbon footprint of a mango delivered by helicopter surely rivals that of any burger. Of course, we could interpret Kenehan to be using animal products to illustrate a general point; perhaps she would be as quick to condemn air-freighted mangos as she is factory farmed beef. But to do this in a systematic manner requires some way of differentiating between diets that are associated with acceptable environmental impacts and diets associated with unacceptable

ones. In other words, a theoretical definition of ‘(un)sustainable diets’ is required, a conception that explains what precisely is morally significant about the environmental impact associated with diets. This is a task I take on in this thesis.

Second, recall that Kenehan’s argument is that the state ought not to *actively* support particularly harmful diets. While not necessarily implied by Kenehan’s argument, to me this notion of ‘active’ support seems to imply the existence of some ‘baseline diet’ that would be returned to if the state ceased to intervene in citizens’ diets by, for example, providing subsidies for particular forms of production. Yet it is hard to know what such a baseline diet would look like, or if it is something that could even exist. This is because, briefly put, food systems have been and continue to be fundamentally shaped by the actions of states, whether they intend to or not (very often they *do* intend to). Therefore, the idea that states can choose whether or not to be actively involved in the sustainability of diets is misguided. Rather, the decision they face is *how* they will be actively involved. (On this subject, in chapter 6 I provide a taxonomy of the ways in which states affect the sustainability of diets). However, there is also a more fundamental normative point to be made here, which is that I am dubious that it would be desirable for states to be neutral actors with regard to diets, even if such a thing were possible. (Again, to be clear, Kenehan does not imply that it *would* be desirable). Consider, for example, bank robberies. It seems right that the state ought not actively support such a practice by, for instance, teaching safe cracking in schools and subsidising getaway drivers. But most people would also agree that the state ought to provide police to prevent the robbery in the first place. Bank robberies and diets are different things, but hopefully the parallel is clear. If the environmental effects of, say, factory farming are incompatible with justice, then surely this fact should guide state actions, whether or not the existence of factory farming is *caused* by actions taken by the state. In this thesis I attempt to mount such an argument.

The third difference between mine and Kenehan’s approaches is the space I give to balancing states’ duties to promote sustainable diets against *other* important values associated with diets. To set the scene, note that at one point Kenehan argues that states ought not intervene in diets that are necessary for human survival and flourishing, before asserting that the consumption of animal products is unnecessary for the achievement of these things, at least in countries where the availability of varied diets mean that animal products are unnecessary for achieving a nutritionally balanced diet (Kenehan, 2019, p. 246). Here I think she moves too fast in at least two ways. First, her assertion that a lack of access to meat does not undermine individuals’ flourishing appears to carry with it the implicit assumption that if it did, then factory farming would be permissible. In other words, she seems to assume that ‘sustainability concerns’ – my term, not hers – are trumped by the right of citizens to lead flourishing lives. Given that the environmental impact of one group of people’s diet plausibly impacts on the ability of another group’s ability to flourish, this position demands further examination. Second, it is not immediately obvious to me that the consumption of meat *is* always unnecessary for human flourishing, even accepting cases where it provides vital nutrition. After all, the ways in which human

flourishing might rely on eating meat plausibly include, for instance, the accessing of particular flavour sensations to culture-affirming food practices. Clearly, this point only becomes more pressing once we widen our definitional net to include in the potential scope of states' duties not only meat produced on factory farms but *all* 'unsustainable diets'. A focus of this thesis will therefore be to explicate some of the other duties that states have with regard to their citizens' diets – for instance the possible duty to ensure citizens' access to adequate 'eating experiences' – and explore how those duties might be impacted by the promotion of sustainable diets.

In summary, let me highlight the primary contributions of this thesis. First, I provide a holistic definition of (un)sustainable diets. Second, I mount an argument for why states have a justice-led duty to promote sustainable diets. Third, I explore some of the normatively significant dimensions of diets that may be affected by state promotion of sustainable diets, with my aim being to provide a perspective on some of the conflicts and harmonies that might be encountered upon pursuing such a strategy.

3. An applied political theory of sustainable diets

In this section, I first set out some key definitions and assumptions that undergird my methodological approach, as well as making some wider comments about the sort of contribution political theory can make to the topic of (un)sustainable diets. I then introduce Nussbaum's capabilities approach, which will act as my basic normative framework as the thesis progresses. Finally, I outline some limitations with regard to whom – or what – I count as a legitimate 'subject of justice' in this thesis.

3a) The 'state' and the role of ideal political theory

When I say the 'state', I mean a sovereign political entity that exercises authority over the citizens and affairs of a specific jurisdiction. For the majority of this thesis, I am concerned with thinking about the sorts of diets states ought to promote under 'ideal conditions'. By this, I refer to a hypothetical scenario where societal factors are conducive to the state acting in accordance with justice, without significant constraints or limitations. Of course, this form of theorising is not without its critics, and it is worth briefly addressing three challenges. (These challenges are, fundamentally, challenges to ideal theory itself, but I have tried to frame them as challenges to this particular project so as to not get too off track).

First, ideal theorising can be challenged on the grounds that states are rarely, if ever, motivated to organise their affairs according to principles of justice. What states' true motivations regarding dietary policy will vary; one government might not want to reduce consumption of a favourite dish for fear of the decision being felt at the ballot box, another might want to leverage grain stockpiles for geopolitical gain, in yet another state-actors might be compromised by agribusiness lobbying. Whatever the case may be, to proceed on the assumption that states are somehow motivated by justice is – so the objection goes – not only to disregard the complexities of real-world power dynamics, but is to naïvely appeal to a social contract that holds little or no power. Nonetheless, while it is certainly true that

actually-existing states are motivated by many factors, there is no ‘in principle’ reason why justice cannot be one of them (indeed, surely some states *are* guided by concerns about justice, at least sometimes). By envisioning what justice demands concerning the environmental impacts associated with diets, my aim is to function as a ‘democratic underlabourer,’ providing reasons to support meaningful normative stances that could influence state actions and policies (Swift and White, 2008, p. 54).

The second way to challenge ideal theory is on grounds of feasibility; real-world states face significant limitations to the power they wield over citizens’ diets. There are at least three reasons for this. 1) In today’s neoliberal era even relatively powerful states have ceded substantial power to corporations and multilateral governance bodies when it comes to policy that affects citizens’ diets. 2) The preferences (gustatory or otherwise) of citizens affect how feasible it is for democratic states to promote one diet over another. 3) States and the institutions that govern them are not the only actors that have power over the dietary preferences of citizens. Other influential non-state actors range from the individual farmer to the supermarket CEO to the celebrity chef. Nonetheless, states still wield substantial power over the diets of their citizens. This is true in the abstract; in principle states have a monopoly over the use of coercive force within their jurisdictions, so could compel any of the actors I just mentioned to take actions that increase the sustainability of diets. But it is also true in practice; to lesser or greater degrees, the actually-existing states of today have the power to enact a wide range of policies, regulations, and incentives that affect the sustainability of diets. I therefore proceed on the assumption that states have the capacity to effectively steer the diets of their citizens in whichever way they see fit.

The third way that ideal theory can be challenged is that it is *counterproductive* to the project of bringing about a more just world. For example, Charles Mills has argued that that liberal political theory’s preoccupation with setting out ideal accounts of distributive justice serves to delay the more urgent task of non-ideal theorising (which, for example, would surely make the case for urgent *compensation* to the victims of the blatant injustices that are prevalent within the contemporary food system) (Mills, 2019). However, I do not see why the work of this thesis cannot, at the very least, be compatible with efforts undertaking to identify the injustices associated with diets today. Indeed, a more positive case can be made; it is plausible that envisaging sustainable diets allows us to better identify unsustainable ones, thus actually paving the way for more practical, non-ideal theory.

3b) Nussbaum’s capabilities approach as a normative foundation

I approach this project through the subdiscipline of normative political theory, a discipline that has been described as addressing “conceptual, normative, and evaluative questions concerning politics and society, broadly construed” (List and Valentini, 2016, p. 1). More specifically, mine is an *applied* approach to political theory. Following Brian Barry, I take it that:

...the task of an applied approach to political theory is to analyse some basic political or ethical principles... and see what follows from those principles given the empirical ‘reality of the situation’ that faces humanity today. (Barry, 2012, p.5).

Put simply, the part of ‘empirical reality’ I am concerned with is unsustainable and sustainable diets. More precisely, I am concerned with the various (normatively significant) dimensions of contemporary diets and the possible future alternatives to them. But why do the environmental impacts of diets matter, and what is at stake when states act to change diets in order to make them more sustainable? The answers to these questions, and others like them, will ultimately depend on what we consider to be of *genuine importance*, i.e. our basic normative commitments, or what Barry calls our ‘basic political [and] ethical principles’. In this thesis I choose to use Martha Nussbaum’s capabilities approach to provide this normative foundation, and spend the rest of this subsection introducing it.

The capabilities approach was initially formulated to address a limitation encountered by economic-utilitarian approaches to assessing wellbeing, which were at the time dominant in international development and policy circles. Economist Amartya Sen observed that different individuals have different capacities to transform resources into wellbeing, meaning that available resources do not directly translate into wellbeing (Sen, 1979). He argued wellbeing is better accounted for as the substantial freedoms individuals have to become the kind of person they want to be and to pursue activities that are important to them. To explicate this, he distinguished between ‘functionings’ and ‘capabilities’, where the former are the ‘beings’ and ‘doings’ of individuals, and the latter the real freedoms individuals have to achieve those beings and doings. If I am hungry and have no access to food, then I have not achieved the functioning of being well nourished, nor do I have the capability of achieving it. If I am hungry but *do* have access to food, then I have the capability of being well nourished, but have chosen not to avail myself of the functioning (perhaps I am fasting). If I have just eaten my last available meal, I have just accessed the functioning of being well nourished, but no longer have the capability to access it going forward. Sen thus shifted the focus from individuals’ means (the personal and public resources they can access) to their ends (the substantive freedoms they can access given available resources) (Robeyns and Byskov, 2023).

Martha Nussbaum took Sen’s theoretical account of wellbeing as a starting point and developed it into a “minimal account of social justice” (Nussbaum, 2007, p. 71).⁴ One of her major contributions was to formulate a list of capabilities that she holds are “of central importance in any human life” (Nussbaum, 2000, p. 71).⁵ (For reference, I include a full list of these central capabilities in an appendix at the end of this introduction). She based the list in an account of ‘human dignity’:

⁴ Nussbaum first outlined her capabilities approach in *Women and Human Development: The Capabilities Approach* (Nussbaum, 2000). Then the most significant theoretical development of it came in *Frontiers of Justice: Disability, Nationality, Species Membership* (Nussbaum, 2007).

⁵ Sen himself resisted this move, arguing that nations should arrive at lists of capabilities democratically. Nussbaum, though, disagrees, arguing that such a list can be arrived at through a process of “freestanding reflective intuition” (Nussbaum, 2007, p. 279).

We think about human dignity and what it requires. My approach does this in an Aristotelian/Marxian way, thinking about the prerequisites for living a life that is fully human rather than subhuman, a life worthy of the dignity of the human being. We include in this idea the idea of sociability and, further, the idea of the human being as a being with, in Marx's phrase, 'rich human need'. We insist that need and capacity, rationality and animality, are thoroughly interwoven, and that the dignity of the human being is the dignity of a needy enmattered being (Nussbaum, 2007, p. 278).

Examples of Nussbaum's 'central capabilities' include the ability to lead a healthy life, to access education, to participate in political processes, and to express oneself freely. Nussbaum describes these capabilities in quite general terms, in order to allow that "each of [them] may be concretely realised in a variety of different ways, in accordance with individual tastes, local circumstances, and traditions" (Nussbaum, 2000, p. 105). This flexibility is meant to address concerns that her approach is inconsistent with pluralism, while not compromising on the principle that there exist certain substantive freedoms that are "implicit in the idea of a life worthy of human dignity" (Nussbaum, 2007, p. 70).

Distinguishing it from procedural accounts of justice, Nussbaum's account of justice is concerned with societal *outcomes* (Nussbaum, 2007, p. 82). For her, just societies ensure that all of their citizens (and potentially the citizens of other nations) have access to a *minimum threshold* of all the substantive freedoms that are necessary for a minimally dignified life (Nussbaum, 2000, p. 71). Nussbaum also insists that the central capabilities are both "mutually supportive" and "all of central relevance" to justice (Nussbaum, 2007, p. 75). Central capabilities can therefore not be traded off against one another; citizens' inability to access any one is a failure of justice. Of course, Nussbaum's approach is only a *partial* theory of justice because it solely focuses on universal access to central capabilities, leaving any other requirements for a just society unaddressed.⁶ Nonetheless, I proceed on the assumption that if everyone's central capabilities *were* fulfilled, it would lead to a significantly more just world than the one in which we exist today.

For two main reasons, Nussbaum's capabilities approach is particularly useful to this thesis. First, as I said at the start of this section, it can be used as a normative foundation from which I can proceed with my evaluations. It is worth noting that I am not the first to use the capabilities approach to draw attention to and evaluate the relationship between social justice and the natural environment. A substantial body of literature already exists that has explored this connection and its implications, which serves as a valuable resource to draw upon as the thesis advances. (e.g. Ballet, Koffi and Pelenc, 2013; Holland, 2014, 2021; Peeters, Dirix and Sterckx, 2015).⁷ Second, the list of central capabilities provides

⁶ For instance, it says nothing about inequalities once everyone has reached the threshold minimally dignified life. In this respect, it is less comprehensive than, say, Rawls' theory.

⁷ Nussbaum herself was initially slow to recognise the instrumental importance of the natural environment with regard to social justice (see Holland, 2008b, pp. 319–321)

me a common currency with which to evaluate dimensions of diets that otherwise appear incommensurate. For example, later in the thesis I consider the question of whether limiting individuals' access to particular eating experiences (in order to promote more sustainable diets) is compatible with justice. To undertake this evaluation, I explore the instrumental value of access to adequate eating experiences by evaluating how important it is for the provision of the central capability of 'senses, imagination, and thought'.

3c) The subjects of justice

In this subsection, I briefly discuss who (or what) Nussbaum considers to have entitlements owed to them according to justice, and also make some comments about how I integrate those entities into my argument going forward.

Nussbaum rejects the idea, core to contract theorists from Hobbes through to Rawls, that human cooperation – and relationships of justice – must be based in mutual advantage. Instead, she draws on the Aristotelian tradition that holds that humans are both social and ethical beings; we want to live with others and we have the capacity for ethical reasoning (Nussbaum, 2007, p. 273). When these characteristics of humans are combined with the fact that humans also have certain fundamental needs, she argues the result is that: “a central part of our own good, each and every one of us... is to produce, and live in, a world that is morally decent, a world in which all human beings have what they need to live a life worthy of human dignity” (Nussbaum, 2007, p. 274). She therefore concludes that “our world is not a decent and minimally just world, unless we have secured the ten capabilities, up to an appropriate threshold level, to *all the world's people*” (Nussbaum, 2007, p. 281, my emphasis). According to Nussbaum then, states ought not only be concerned with securing the capabilities of their domestic population, but also with the capabilities of citizens of other states. In the upcoming thesis, I adopt Nussbaum's stance on this issue, although I will explore whether citizens of other countries should receive *identical treatment* to those residing within the state in question.

For Nussbaum, non-human animals ought to have the freedom to live dignified lives, able to flourish as the types of beings that they are. There are questions to be answered about what such lives would look like.⁸ Here though, it is enough to say that Nussbaum stipulates that all sentient animals ought to be considered subjects of justice (Nussbaum, 2007, p. 362). Therefore, a political theory of sustainable diets that employs the capabilities approach as its normative foundation should consider what environmental sustainability looks like for all sentient animals. The obvious point to address, however, is that a huge proportion of the animals in existence today are raised by the very agricultural

⁸ Nussbaum is unwilling to say that animals should simply be left free to follow their 'natural' instincts because nature is not “morally normative, [it] is actually violent, heedless of moral norms” (Nussbaum, 2007, p. 367). But then how can we judge which animal capabilities are valuable and which are not? Alasdair Cochrane suggests that either she is guilty of mystifying animals' inner lives, or that she must fall back on appealing to animals' welfare, thus ultimately making her theory a variant of utilitarianism (Cochrane, 2010, pp. 43–44).

system that is responsible for the environmental impacts with which this thesis is concerned.⁹ Therefore, when assessing the sustainability of a diet it seems I should take into account how its associated environmental impacts affect farmed animals. In principle, I think this is probably the correct position; all other things being equal, how issues like climate change affect farmed animals is a morally salient concern.¹⁰ However, it seems like an odd thing to focus on when the far more pressing concern for farmed animals is that the vast majority of them live short, immiserated lives; lives that surely stray far from any conceivable notion of dignity. So, this thesis primarily concentrates on how (un)sustainable diets impact *human* lives, under the assumption that we are already failing to meet our obligations to animals in a grievous manner, and that diets that do not rely on the rearing of animals should *already* be adopted as a matter of justice (see Cochrane, 2012).

Finally, a note on the moral value of the natural environment itself. Nussbaum considers sentience to be a “threshold condition for membership in the community of beings who have entitlements based on justice”, but admits that it might not be a *necessary* threshold, before ultimately concluding that “we have enough on our plate if we focus for the time being on sentient creatures” (Nussbaum, 2007, pp. 361–362). Clearly, this is not very satisfying, and leaves open the possibility that natural entities such as plants (and perhaps even ecosystems) might be owed consideration under justice. However, while taking this seriously might lead to an interesting set of research questions (what does it look like for an ecosystem to live in dignity?), evaluations that accept the non-sentient environment to be a subject of justice are outside the scope of this project. Therefore, I proceed under the assumption that the natural environment has only *instrumental* value.

4. Chapter summaries

What are ‘sustainable diets’? In chapter 1, I answer this question in two ways. First, using the capabilities approach as a normative foundation, I give a conceptual account. I argue that a diet is sustainable if none of its associated environmental effects undermine any morally relevant individuals’ central capabilities. Second, in an attempt to bridge between this conceptual account and the world we actually inhabit, I explore some of the ‘unsustainability’ of contemporary diets, before shining a specific light on the particularly unsustainable ‘Western pattern diet’. I round off the chapter by setting out four archetypal ‘visions’ of more sustainable diets, which I call *Sustainable Development*, *Promethean Development*, *Green Radicalism*, and *Sustainability Maximising*. As the thesis progresses, I use these visions to help evaluate how the promotion of sustainable diets might affect other important dimensions of diets.

⁹ The global biomass of wild terrestrial mammals is about twenty million tons, compared to six-hundred and thirty million tons of domesticated livestock (Greenspoon *et al.*, 2023)

¹⁰ One can imagine, for example, the lives of broiler chickens getting worse in the future, as increasingly severe heatwaves make the warehouses in which they are grown even less bearable.

Next, I move to address the question of how states ideally ought to act in relation to (un)sustainable diets. It seems obvious that, all other things being equal, states ought to promote more sustainable diets, since unsustainable diets – by my definition – undermine individuals’ central capabilities and therefore represent what Nussbaum calls “a violation of basic justice” (Nussbaum, 2011, p. 74). However, this is just the beginning of the answer. In chapter 2, I address two questions. The first relates to the *basis* of any state duty to promote sustainable diets. What might ground such a duty, except for the broad (and somewhat vague) obligation states have to justice? To answer this question, some interpretation of Nussbaum is required; I argue that state duties ultimately flow from the obligations of individuals, and are generated when institutions are better placed than individuals to ensure those obligations are discharged. The main focus of the chapter, however, is on the second question: what *form* should the state duty to promote sustainable diets take? To answer this question, I first show how two models of responsibility – the ‘liability’ model and the ‘social connection’ model – both generate a strong state duty to limit the unsustainabilities associated with citizens’ diets. I then explore how this duty might change depending on whether those unsustainabilities are borne by citizens’ compatriots, distant people, or future generations. Here, I also introduce Nussbaum’s idea of the ‘tragic conflict’, which occurs when states are faced by a set of obligations that are fundamentally incompatible with one another; I return to this idea as the thesis progresses. Next, I explore how states ought to act in the face of uncertainty about the causal relationships that exist between agents’ diets, the effects of those diets on the environment, and the way those environmental effects affect other individuals’ capabilities. Finally, I briefly discuss the possibility that states have a duty to promote ‘restorative’ diets (i.e. diets that *bolster* individuals’ capabilities via the environment, rather than merely not undermining them).

For the next three chapters, I shift my focus onto how the promotion of sustainable diets might interact with other priorities states have in relation to diets. In the first of these, chapter 3, I examine how the promotion of sustainable diets might affect the duties states have with regard to global food security. I begin this chapter by arguing that states ought to promote food systems that yield sufficient food for their own citizens, while at the same time not undermining the ability of other states to ensure adequate nourishment to their citizens. Next, I explore the causes of hunger, arguing that, while producing *enough* food is clearly important for the prevention of hunger, in the contemporary world hunger tends to be caused by the *maldistribution* of food. With this context in mind, I explore how each of the four ‘visions’ of sustainable diets that I set out in chapter 1 might affect individuals’ access to food. Broadly speaking, I argue that all of the visions would be compatible with ensuring individuals’ access to adequately nutritious diets, although some would require significant changes to the food system. This changes might take the form of, for instance, substantial shifts in consumption patterns or adoption of technologies hitherto unproven at scale.

Food security is a vital consideration when thinking about the transition to more sustainable diets, but for those who do not have to worry about where the next meal is coming from – and even for

many who do – diets are rarely assessed solely by their calorific and nutritional value. Put simply, we also want our food to taste good! In chapter 4, I take this consideration seriously, by exploring how the promotion of sustainable diets should be balanced against individuals’ access to ‘eating experiences’. I begin the chapter by providing an analysis of eating experiences, then argue that access to *adequate* eating experiences ought to be viewed as a necessary component of a minimally good human life, and is thus deserving of state protection. I draw on literature from the field of aesthetics, in particular the work of John Dewey, in order to cash out what an adequate eating experience might look like. I then assess how each of the four visions of sustainable diets might affect individuals’ access to adequate eating experiences, ultimately concluding that all but one vision – *Sustainability Maximising* – would probably be able to provide more than adequate eating experiences.

The diets individuals eat are frequently understood to be bound up in and supportive of their identities. For instance, a vegetarian is the sort of person who does not eat meat, a Muslim is the sort of person who eats halal food, and a supporter of a local football team may be – depending on the local tradition – the sort of person who gets a pie and chips during halftime. In chapter 5, I explore the extent to which these ‘dietary identities’ should feature in states’ considerations when they promote sustainable diets. Drawing on Kwame Appiah’s liberal theory of multiculturalism, I argue that states should take seriously individuals’ dietary identities, making allowances where possible for those that are important for individuals to live dignified lives. Nonetheless, states need not treat dietary identities as sacrosanct; in many circumstances it will be permissible for the promotion of sustainable diets to come at the cost of individuals’ dietary identities. However, when making this trade-off, states must not violate what Appiah calls the principle of ‘neutrality as equal respect’. The latter half of the chapter is spent discussing how to tell whether states are abiding by this principle.

How might all this manifest when it comes to states’ actions? In chapter 6, I address this question in two ways. I first explore what state action to promote sustainable diets might look like, by providing a taxonomy of the actions that are available to states when promoting sustainable diets. Then, I provide some principles state actors should bear in mind when making policy in this area.

5. Appendix to the introduction: Martha Nussbaum’s list of central human capabilities

The following list of central capabilities is from Nussbaum’s *Women and Human Development: The Capabilities Approach* (Nussbaum, 2000, pp. 78–80):

1. Life. Being able to live to the end of a human life of normal length; not dying prematurely, or before one’s life is so reduced as to be not worth living.
2. Bodily Health. Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.

3. Bodily Integrity. Being able to move freely from place to place; having one's bodily boundaries treated as sovereign, i.e. being able to be secure against assault, including sexual assault, child sexual abuse, and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.

4. Senses, Imagination, and Thought. Being able to use the senses, to imagine, think, and reason – and to do these things in a 'truly human' way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing self-expressive works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to search for the ultimate meaning of life in one's own way. Being able to have pleasurable experiences, and to avoid non-necessary pain.

5. Emotions. Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by overwhelming fear and anxiety, or by traumatic events of abuse or neglect. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development).

6. Practical Reason. Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience).

7. Affiliation. A) Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another and to have compassion for that situation; to have the capability for both justice and friendship. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech). B) Having the social bases of self-respect and non-humiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails, at a minimum, protections against discrimination on the basis of race, sex, sexual orientation, religion, caste, ethnicity, or national origin. In work, being able to work as a human being, exercising practical reason and entering into meaningful relationships of mutual recognition with other workers.

8. Other Species. Being able to live with concern for and in relation to animals, plants, and the world of nature.

9. Play. Being able to laugh, to play, to enjoy recreational activities.

10. Control over One's Environment. A) Political. Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and

association. B) Material. Being able to hold property (both land and movable goods), not just formally but in terms of real opportunity; and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure.

Chapter 1. What is a sustainable diet?

In 2021, Tesco aired a TV ad featuring its vegetarian ‘Plantchef’ range. It shows a woman on a sofa; light from a nature documentary illuminates her face. Over the sound of collapsing glaciers, an Attenborough-like voice grimly announces that the planet continues to warm. Engrossed by the show, the woman distractedly rolls up her sleeves, reaches down, and takes hold of a burger in both hands. We hear the whistles and clicks of dolphins and (with an understated defiance?) she takes a bite. A chirpy voiceover addresses the audience: “we’ve lowered the price of dozens of our Plantchef products, because a little swap can make a difference to the planet” (Masud, 2022).

This ad is a striking example of how mainstream the notion of ‘sustainable diets’ has become. Only a few years ago, my conversations with even environmentally-minded people frequently revealed a lack of awareness about the impact of food on the environment. In contrast, today the ad is legible to even mainstream audiences because people have internalised the notion that different diets have varying degrees of environmental impact.¹¹ However, while readers might already have a rough idea of what sustainable diets are, in the context of this thesis there is still a need to precisely define them, for two main reasons. First, to my knowledge no political theorist has yet done so in a rigorous manner. Second, one of the primary objectives of this thesis is to balance the value of diets being *sustainable* against *other* valuable aspects of diets. To make the value of dietary sustainability commensurate with other such values, I want to ‘convert’ it into a common normative ‘currency’, that of capabilities.

In section 1, I begin this chapter by establishing a conceptual account of environmental sustainability. I do this by outlining a conception of environmental sustainability defined in relation to capabilities. According to this view, the value of the natural environment lies in its ability to support individuals in fulfilling their capabilities. Therefore, a diet's sustainability (or lack thereof) is based on its impact on the environment and its effects on individuals' central capabilities. Put another way, a diet can be considered sustainable if it does not undermine the central capabilities of morally relevant individuals due to its environmental impact. In section 2, I move from this abstract notion of sustainable diets to one more grounded in reality, by describing the *unsustainability* of contemporary diets today. (Recall that when I say ‘diets’ I am not talking about the diets of individuals, but rather about the diets of groups of individuals; the sort of thing that states can affect with policy targeted at both the demand and supply side of food systems). I first describe how my conception of environmental sustainability should be applied to the environmental impacts associated with the entire supply chain of any given diet. I then argue that the (un)sustainability of diets (in the aggregate) can be assessed with reasonable accuracy through the technique of ‘environmental footprinting’, demonstrating the point by describing the interactions between three metrics of environmental footprints – greenhouse gas emissions, biodiversity loss, and deforestation – and individuals’ capabilities. To finish section 2, I describe the

¹¹ Here, the general public has internalised the idea that the traditional burger ingredient, beef, has a particularly high environmental impact, compared to ‘plant-based’ alternatives.

increasingly dominant ‘Western pattern diet’ and the contemporary global food system that enables it, as well as the associated unsustainabilities. Finally, in section 3, I move to discuss what sustainable diets might look like. While there is near universal consensus that substantial changes to the current food system are required to make diets sustainable, profound disagreement exists regarding what exactly that means. Therefore, I opt to outline four distinct visions of sustainable diets, which will serve as units of analysis as the thesis progresses. These are *Sustainable Development*, *Promethean Development*, *Green Radicalism*, and *Sustainability Maximising*. I explain the core tenets of these visions, sketch out the political projects with which they are associated, and attempt to bring them alive by describing how their implementation would affect some everyday foodstuffs.

1. Conceptualising environmental sustainability

The ‘environment’ of ‘environmental sustainability’ did not emerge as a conceptual idea until the 1960s (although of course environmental *concerns* predated this time), but today we have a well-established and commonly held understanding of it (Dryzek, 2012, p. 5). We do not mean our surroundings in general, but a specific subset of them; we mean the atmosphere, coral reefs, oceans, and savannahs, not motorways, police stations, or office blocks. That is, we mean the ‘natural environment’, as distinguished from the ‘human-made environment’. Of course, this distinction is difficult to maintain with analytical rigour, since human activity both affects the natural environment and occurs within it, often to the extent that the two cannot be disentangled. Indeed, fundamentally a human/nature distinction *cannot* be maintained coherently because the two are just not independent from one another. Rather, humans are inseparably *part* of nature, which itself is “an evolving mosaic of interdependent flows, forces, conditions, and relations” (Moore, 2015, p. 79). Nonetheless, even those who are highly critical of the human/nature dualism recognise that humans are “distinctive in this mosaic” due to our outsized capacity to manipulate it (Moore, 2015, p. 79).¹² This is particularly apparent in the context of the 20th and 21st Centuries, in which human impact on the planet’s ecosystems accelerated exponentially (to the extent that many argue a new geological epoch has been initiated – the so-called ‘Anthropocene’). For current purposes then, it is reasonable to define the ‘environment’ in ‘environmental sustainability’ as being comprised by the *natural* environment; i.e. the parts of our surroundings that are not human-made, such as air and the atmosphere, land and geological features, water, plants, and animals. Together, these comprise a set of complex systems that interact with one another and provide life-sustaining resources to all life on Earth.

Reasonable people will disagree about what parts of the environment are worth sustaining. This is at least in part due to practical disagreement about the extent human-made capital can be substituted for natural-capital, a discussion I briefly return to later (see chapter 2, section 4c). Most people,

¹² Jason Moore, one such critic, therefore reaches for terms like “extra-human nature” to describe the natural environment (Moore, 2015, p. 77).

however, will agree that environmental sustainability does not mean keeping all aspects of the natural environment in a ‘stable’ unchanging state. After all, even without the presence of humans, the environment would constantly evolve and transform itself, an ever-changing interaction between systems of climate, ecosystems, and geology. *With* our presence, these natural fluxes are affected by human activities, while at the same time constituting both the site of those activities and the source of material resources needed for them. So, in what condition *should* humans keep the natural environment? As I stipulated in the introduction to this thesis, I assume that the non-sentient parts of the environment do not have inherent moral qualities that requires them to be considered for their own sake. Therefore, our relationship with the environment should be governed according to its instrumental value, which I understand through the lens of the *capabilities approach*. The rest of this section is dedicated to exploring what that looks like in order to define ‘environmental sustainability’.

Nussbaum stipulates a list of central capabilities that she argues are necessary to individuals’ ability to live lives worthy of human dignity (Nussbaum, 2000, p. 72).¹³ In her original formulation of those capabilities she recognises the value that humans can obtain from ‘experiencing nature’, stipulating that humans ought to have the freedom to “live with concern for... the world of nature” (Nussbaum, 2000, p. 80). However, as important as people’s ability to ‘access nature’ may be, it constitutes just one small aspect of the natural environment’s instrumental value. This is because, as Amartya Sen notes, “our very existence as human beings is totally contingent on the environment” (Sen, 2010, p. 131). Put another way, all individuals’ beings and doings have material preconditions, all of which ultimately rely on the environment. Breana Holland, who has done the most work adapting the capabilities approach into theory of environmental political theory, therefore argues that to achieve lives worthy of human dignity, individuals need to “live in the context of ecological conditions that enable the protection of one’s central human capabilities” (Holland, 2014, p. 116).

On my account it is this – the environment’s effects on individuals’ central capabilities – with which sustainability is concerned. More concretely, an action, event, or state of affairs is environmentally sustainable if it is consistent with environmental conditions that do not undermine the central capabilities of morally relevant individuals. For instance, the use of a limited environmental resource is unsustainable if it undermines the capabilities of present or future individuals.¹⁴ This same criterion can be used to evaluate the sustainability of any actions that impact the environment, such as actions that cause rivers to become polluted, soil to be degraded etc.

Before elaborating further, I want to address a worry that this notion of sustainability does not match our intuitive understanding of the term. To illustrate this worry, notice that in conventional use the notion of ‘sustainability’ is often evoked in relation to grand environmental trends spanning whole

¹³ Recall that ‘capabilities’ are “the conditions or states of enablement that make it possible for people to achieve things; [they] are people's real opportunities to achieve outcomes they value” (Holland, 2008b, p. 320).

¹⁴ To be clear, it is not the depletion of the resource per se that is unsustainable (we might call depletion of that type the more neutral ‘unmaintainable’). Rather, it is the depletion of the morally important utility that the resource provides that is unsustainable.

economies or generations. For instance, a now archetypal sustainability framework is that of 'planetary boundaries'. This framework attempts to describe "a safe (ecological) operating space for humanity" by identifying specific global-scale ecological systems and specifying the extent to which they can be depleted or changed before the relatively stable environmental conditions of the Holocene era – within which modern human civilisation has developed – are undermined (Rockström *et al.*, 2009, p. 472). According to this framework, the actions of *humanity as a whole* – or at least large cohorts of humanity – over *long periods of time* are what is relevant to judgments of sustainability. This is broadly representative of how the notion of 'sustainability' is normally deployed; we tend to think of it as being about how humans manage large-scale environmental trends that affect whole populations. Of course, my capabilities-led conception of sustainability agrees that the overstepping of planetary boundaries is unsustainable (I assume that the end of the Holocene would be extremely bad for individuals' capabilities). However, my conception also holds that *any* action, event, or state of affairs can be analysed according to the effect they have on the environmental prerequisites of individuals' flourishing. This means that even comparatively 'local' environmental effects can be assessed as sustainable or not; effects that are, at first glance, too parochial to fit our everyday understanding of 'sustainability'. For instance, imagine I pushed a boulder into a river and that, due to a hydrological quirk, this causes a single nearby home to flood, undermining the residents' central capabilities. On the face of it, it seems odd to call my pushing the boulder an 'unsustainable' action.

But why does it seem odd? Not because the effect is on only one house; if the same house was flooded due to the cumulative effect of numerous boulders being pushed into the river over several years then it would be normal to say that the boulder-pushers acted unsustainably. And not because a direct causal line can be drawn between my action and the environmental effect; we are happy labelling an oil spill from a fractured pipeline or a forest fire sparked by a careless cigarette as unsustainable. On balance, I think the reason for my discomfort at calling the boulder pushing unsustainable comes down to the fact that 'sustainability' tends to be invoked in respect to *future-affecting* environmental effects; the flooding of the house seems somehow *too immediate* to be a concern of 'sustainability'. (Indeed, most definitions of sustainability are explicitly about the relationship between current generations and future ones).¹⁵ However, I do not think there is any morally relevant difference between a capability being undermined by the environment now and one undermined in three, twenty, or a hundred years' time. Ultimately we care about the environment because of how individuals are affected by the it, so on balance I think a reasonable notion of sustainability also will capture these more local instances of unsustainability.

I now describe what might be called the 'spectrum' of environmental sustainability. The environmental effects of an action, event, or state of affairs are 'sustainable' when they are compatible

¹⁵ E.g. The Brundtland Commission famously states that sustainable development is about "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987).

with the central capabilities of any individual who is within the scope of justice. For example, imagine a farmed field is located near a river, so when it rains heavily water runs off from the field into the river. If that runoff does not undermine the central capabilities of people living in the town downstream (or any other population, including people who are spatially or temporally distant), then the environmental effects of the farming operation (or at least the runoff aspect of them) is sustainable. Conversely, the environmental effects of an action, event, or state of affairs are ‘unsustainable’ when they are incompatible with the central capabilities of any individual who is within the scope of justice. For example, if the farm runoff makes the river water unsafe to drink and the townspeople relies on it being potable, then the runoff (and by extension the farming operation that causes it) is unsustainable. Finally, the environmental effects of an action, event, or state of affairs are ‘restorative’ (a choice of words I am reluctantly resigned to, see note) when they enhance the central capabilities of any individual who is within the scope of justice.¹⁶ For example, reducing the farm runoff to the point that the river water is potable again would be a restorative action.

There is one modification required to the conception of environmental sustainability I have just set out. It has been well established elsewhere that the differences between individuals’ circumstances affect their ‘vulnerability’ to environmental conditions, and that this should be accounted for in discussions about how distributive justice intersects with the environment (e.g. Barry, 2012, p. 42). Put in the nomenclature of the capabilities approach, the manner in which environmental conditions *actually affect* the capabilities of individuals is a function of: 1) the degree capability-affecting environmental conditions are present; *and* 2) the vulnerability of the individual in question *to being affected* by said environmental conditions. For example, a climate change exacerbated heatwave causing a crop failure is an example of an environmental condition bringing about a set of circumstances that has the potential to undermine a central capability of individuals (the capability to access adequate nutrition). But the heatwave-triggered crop failure will only undermine individuals’ capabilities if they are vulnerable to that particular effect; e.g. perhaps some individuals cannot afford the food from an alternative supply. With this dynamic in mind, how can we differentiate between cases where individual’s capabilities are undermined due to environmental unsustainability (e.g. the heatwave) and cases where individuals are (just) particularly vulnerable to having their capabilities undermined by environmental conditions (e.g. because they live in poverty)? The answer, it seems to me, is that actions, events, or states of affairs are unsustainable if they bring about environmental conditions that undermine the capabilities of individuals who have a *normal* level of vulnerability to the environment. (Presumably justice would then require allocating additional resources to individuals with higher than normal levels of vulnerability until their vulnerability is at an acceptable level).

¹⁶ The term ‘restorative’ arguably implies that returning environments to some previous condition should be the aim, when in fact I am ambivalent about whether environments resemble a past state or not. It may sometimes be the case that returning an environment to a previous state does bring about environmental conditions that promote central capabilities, but this is not necessarily the case.

But normal relative to what? There are two complicating factors at play here. First, individuals' vulnerability to the environment depends on their circumstances (including, for example, their individual socioeconomic status, their physical health, and economic status of the country in which they reside). Therefore, the normal level of vulnerability will vary from state to state, depending on the vulnerability-affecting characteristics of its citizens and of the state itself. For example, in a poor country that has undeveloped infrastructure and individuals have fewer personal resources, individuals will be more vulnerable to the direct effects of a heatwave, as compared to the individuals of a wealthy country that has the resources to cope with one (e.g. widely distributed air conditioning, good healthcare provision etc.). The second complicating factor lies in the human capacity to adapt to mitigate vulnerability to the environment, something we have of course been doing for thousands of years.¹⁷ Think of the cultural adaptation of the siesta during the hottest hours of the day, the agricultural adaptation of specific crops being situated in the regions with the most stable climates, and the hydrological adaptation of controlling the flow of water to allow cities to be built on what would be flood plains. Each of these cases is an example of human innovation decreasing our vulnerability to the environment. Since these innovations and ones like them will surely continue to be developed and implemented, the average level of vulnerability today is not necessarily a guide for what it will be in the future. (Of course, it is possible that future societies will be unable to adapt to future environments as well as we do currently, so vulnerability will not inevitably decrease). With these two factors in mind, I suggest this definition: an individual experiences normal levels of vulnerability if their capacity to adapt to environmental conditions is aligned with the prevailing circumstances of individuals within their state, circumstances that are determined by the relevant socioeconomic context and by the relevant societal adaptations. I am sure this definition could be refined further, but now is not the time to do so.

I can now give an abstract definition of a sustainable diet. A diet is sustainable when the environmental effects associated with it are compatible with the central capabilities of any individual who is a) vulnerable to the environment to a normal degree and b) within the scope of justice. (Conversely, a diet is unsustainable when the environmental effects associated with it are *incompatible* with the central capabilities of any individual who fits those criteria). What might this look like in practice? That is what I explore next.

2. The (un)sustainability of contemporary diets

In the context of environmental sustainability, a diet is best thought of as the culmination of a long causal chain, of which each 'link' is associated with various environmental effects. Assessing the sustainability of a diet would therefore require evaluating the manner in which those environmental effects affect individuals' capabilities; a diet is sustainable if none of the environmental effects of its

¹⁷ Walter Rodney memorably characterises economic development as man increasing his capacity to “[win] a living from nature” (Rodney, 2018, p. 3)

supply chain undermine any individuals' freedoms to live minimally dignified lives. While this may sound straightforward enough in the abstract, the complexity of the food system (not to say the interactions between individuals' capabilities and the environment) makes practical assessments challenging.

To illustrate this complexity, consider what it takes for one piece of baked salmon to arrive on someone's plate. The process begins with methane being drilled out of the ground, perhaps somewhere in Siberia. Leaky infrastructure means that as much as half of the gas – which has a potent warming effect on the climate – is released straight into the atmosphere, but some stays under human control and is piped to a nearby fertiliser production plant, where it is burnt to produce ammonia; as a by-product carbon dioxide is also emitted. The ammonia is loaded onto a ship – a ship fuelled with low grade diesel and made with steel produced in China in vast, coal-fired facilities – bound for Mato Grosso in Brazil. Upon arrival, the ammonia is spread over land that was once rainforest, but is now fields of soy crops. Some of the ammonia bonds to nitrogen in the air and fertilises the soil, while the rest produces toxic gases in the local area or is washed off the fields into nearby waterways, contributing to water pollution. The eventual soy beans are shipped to a processing plant in France, at which point they are ground, combined with fish meal made up of bycatch, and transported by truck to a saltwater loch in Scotland. There, the feed is used to rear thousands of fish in net enclosures, releasing large amounts of effluence into the loch, as well as acting as a disease vector for local wild animals. When mature, the fish are harvested, put on ice, and – via a depot or two – transported to a nearby supermarket. From there the eater drives it home, cuts off the head and tail – the waste will likely be incinerated by the local council – and cooks it in an oven, for which the electricity is generated by spinning turbines driven by a combination of natural gas, nuclear fission, and wind.

Diets are composed of tens or hundreds of foodstuffs which, just like salmon, are the outcome of numerous production, distribution, and processing practices, often occurring in several countries, with the eventual eaters potentially located in another country still. The environmental effects associated with these diets are both hard to grasp, and have ramifications on individuals' capabilities across multiple spatial and temporal scales. So, how can we begin to make judgements about the differing sustainability of diets?

One way to evaluate the sustainability of diets is to empirically investigate specific 'links' in their supply chains, and the way that those links directly affect the environment and through it individuals' capabilities. A good example of this kind of work comes from Noam Chen-Zion, who in a recent paper details how the overfishing of Senegalese waters by EU trawlers has been a major factor in driving the undocumented migration of Senegalese people to Spain, where they go on to be exploited in the informal economy (Chen-Zion, 2023). In this example, the diets that contain tuna caught by the EU trawlers are associated with the environmental degradation that is overfishing, which in turn contributes to the undermining of the Senegalese people's central capabilities. By my account, those tuna-containing diets are, therefore, unsustainable, at least with regard to the trawler 'link'. (Of course,

the environmental effect of overfished waters is not the sole cause of the Senegalese migrants' capabilities being undermined – broadly speaking they are extremely vulnerable due to the structures of modern imperialism – but it is *one* cause). However, while Chen-Zion's study is illuminating and there would be great value in more work like it being done, there are two main problems with evaluating the sustainability of diets in this way. The first is there is a limit with regard to the types of environmental impacts it can account for. For instance, it is (relatively) easy to join the causal dots between the near exhaustion of fish stocks off the Senegalese coast and the migration of Senegalese fishers. It is much harder to understand the causality between, for instance, the emissions from the UK's cattle herd and a specific impact of climate change. Second, from a practical perspective it would be nearly impossible to investigate all the 'links' of diets in such a detailed way.

Another method of establishing the sustainability of diets is conducting 'environmental life-cycle analyses' on them. These analyses attempt to systematically evaluate the environmental impacts of a diet throughout its entire life cycle, from production and all its inputs, through to distribution and processing. They typically assess diets against various environmental indicators such as greenhouse gas emissions, pesticide run-off, water usage, and waste generation in order to give a general impression of the overall 'environmental footprint' of any given diet. This method is one of the most straightforward – and by far the most popular – ways of linking conceptual notions of sustainability (like the one I just set out) to practical judgements of sustainability about diets. In just a second, I too use environmental footprinting to give an idea of the varying sustainability of different diets.

Before doing so, however, it should be noted that using the environmental footprints of diets as a stand in for their sustainability is not without its limitations. The main reason for this is that the unsustainability associated with each 'unit' of any given environmental impact will vary depending on where and when the impact occurs. For example, excessive water consumption can have grave impacts on capabilities in areas where water is scarce, or not affect capabilities at all in areas where water is plentiful. The environmental needs of different populations can also determine the extent to which environmental factors affect capabilities. For example, some communities understand particular areas of land as being sacred, meaning that land-use change may affect capabilities much more significantly than it would do in other contexts. For this reason, it is not possible to draw a straight line between any given environmental metric and the undermining of individuals' capabilities. In other words, the environmental footprint of a diet is an *imperfect proxy* for its environmental sustainability, at least as I have conceptualised it. Nonetheless, footprinting can still provide an insight into the varying sustainability of different diets.

Next, I describe how three environmental impacts associated with global food system undermine individuals' capabilities: climate change, biodiversity loss, and deforestation. In doing so, my objective is not to provide a comprehensive picture of the unsustainabilities associated with the food

system.¹⁸ Nor do I aim to provide a sense of the scale of the problem, although perhaps that is a secondary outcome. Rather, mine is the modest aim to illuminate some practical connections between the ‘environmental footprints’ I have just described above and individuals’ capabilities. By doing so, I seek to demonstrate that environmental footprints can serve as a useful indicator, offering a rough proxy for measuring sustainability. Then, at the end of the section, I describe how the environmental footprint of a meat-heavy ‘Western pattern diet’ is disproportionately large as compared to other diets, meaning it is particularly unsustainable.

The global climate is warming due to human-caused greenhouse gas emissions, with the mean temperature rise so far at around 1.1 degree centigrade compared to preindustrial times (IPCC, 2023). The global food system is responsible for 25-30% of global greenhouse gas (GHG) emissions, primarily due to fertiliser production and use, deforestation, and emissions from livestock, although transportation and processing also cause some emissions (Garnett, 2011; Tilman and Clark, 2014). Until relatively recently, it was hard to speak with certainty about the impacts of climate change on presently existing people. However, the last decade has seen progress in the field of ‘extreme event attribution’, which uses modelling to assess the extent to which present-day extreme weather events, such as heat-waves, droughts, hurricanes, and flooding, have been influenced by climate change, thereby demonstrating the extent to which climate change is already undermining capabilities, both directly and indirectly. An ongoing review of extreme event attribution studies finds that 70% of extreme weather events have been made more severe by climate change (Pidcock and McSweeney, 2021). According to the latest IPCC report on the impacts of climate change, these mean that millions of people face “acute food insecurity and reduced water security” (IPCC, 2022a, p. 35). It is also possible that climate change drives conflict between people, by increasing resource scarcity and migration, although this is a contested subject (Reuveny, 2007; Gleditsch, 2021). Capability-undermining environmental impacts that will occur in the near future due to climate change can also be anticipated. Sea level rise will displace 1-5% of the world’s population (Dasgupta *et al.*, 2009). Extreme weather events will continue to become more frequent and severe, and temperature rises will be unequally distributed, meaning that some places will become increasingly inhospitable (IPCC, 2018). According to the IPCC, by 2100 approximately 50-75% of the global population could be exposed to periods of “life-threatening climatic conditions” due to extreme weather events (IPCC, 2022a, p. 183). Looking further into the future, the situation the IPCC describes is potentially devastating for the central capabilities of future generations; they characterise the present day as “a brief and rapidly closing window of opportunity to secure a sustainable and liveable future” (IPCC, 2022a, p. 35)

The second impact I describe is biodiversity loss. ‘Biodiversity’ refers to “the variety of genes, species, or functional traits in an ecosystem” (Cardinale *et al.*, 2012). Biodiversity loss can happen

¹⁸ It would be possible to describe many other ways the global food system undermines the central capabilities of both current and future generations. Other examples are freshwater depletion; pollution from fertiliser and pesticide use; other types of land use change; pollution from livestock excrement; soil erosion.

gradually, where an ecosystem is degraded over time, or suddenly, where an ecosystem is physically destroyed (Barnosky *et al.*, 2012). Since life evolved on Earth there have occurred five mass extinctions, defined as where at least three quarters of species on Earth are lost (Barnosky *et al.*, 2012). The most recent was sixty-five million years ago and was most likely caused by a meteorite striking the Earth (Barnosky *et al.*, 2011). Currently, solely due to human activity, the Earth is experiencing extinction rates comparable to that event (Barnosky *et al.*, 2011, p.55). Agriculture is responsible for the vast majority of land-use change and correspondingly is the primary driver of land-based biodiversity loss. Furthermore, the intensive model of farming employed by most large-scale producers relies on monocultures and high levels of pesticide use, which can be incompatible with sustaining biodiversity (Garibaldi *et al.*, 2017). Off land, ocean biodiversity is also being undermined by intensive fishing (Garcia, S.M.; Zerbi, A.; Aliaume, C.; Do Chi, T.; Lasserre, 2003). Biodiversity loss undermines capabilities in many ways, but examples include reducing crop yields and destabilising fisheries, undermining crop resistance to invasive species, exacerbating climate change by reducing habitats' carbon sequestration, and by generally degrading environments from which people draw use-value (e.g. cultural, spiritual, aesthetic, or monetary) (Gibbs *et al.*, 2010; Cardinale *et al.*, 2012; Dirzo *et al.*, 2014).

The third impact I describe is deforestation, which is done to either create new agricultural land, or alter existing agricultural land. In 2020, 26 million hectares of tree cover was lost globally; an area larger than the United Kingdom (Voiland, 2021). Agricultural expansion is the primary driver of deforestation, with large-scale commercial operations accounting for 40% of tropical deforestation, and subsistence agriculture for 33% (FOA, 2020). While regional variation exists, cleared land tends to be used for cattle grazing and for feed, food, and fuel crops (Gibbs *et al.*, 2010). Deforestation exacerbates other environmental impacts, like climate change, biodiversity loss, soil erosion and acidification, and eutrophication.¹⁹ But it is also implicated in directly undermining the capabilities of people who rely on forest integrity for their livelihoods, or are exposed to pollution caused by forest destruction (de Oliveira *et al.*, 2020; FOA, 2020). Furthermore, these people are frequently subject to violence by the states and multinational companies that carry out the deforestation (van Solinge, 2010). It also seems very plausible that a combination of land use change and biodiversity loss undermines the capabilities of future people by depriving them of the opportunity to experience natural ecosystem; as Nussbaum says, individuals ought to be able to live “with concern for and in relation to animals, plants, and the world of nature” (Nussbaum, 2000, p. 80).

In the final part of this section, I move to describe the state of contemporary diets today, which are encapsulated by the so-called ‘Western pattern diet’. I do so by briefly describing what this diet looks like to the eater, then describing the three main stages of its supply chain: production, distribution, and processing. Here my objective is twofold. First, I want to explain how the Western pattern diet is

¹⁹ Eutrophication is water pollution in the form of plant and algal growth, caused by the releasing excessive nutrients into a local environment.

responsible for a large environmental footprint. Second, I want to give the reader a broad picture of the contemporary food system, in anticipation of the next section, where I describe some possibilities for making diets more sustainable.

Since the mid-twentieth century, there has been a significant increase, both in quantity and variety, in the availability of food worldwide. As a result, there has been a widespread transition from diets primarily based on starchy staples with low variety, to diets with greater variety that include more foods of animal origin, highly processed and refined foods, and fewer fruits, vegetables, and pulses (Odermatt, 2011; Statovci *et al.*, 2017; da Costa *et al.*, 2022). This diet tends to be referred to as the ‘Western pattern diet’ and it is made possible by – and so for my purposes is synonymous with – the contemporary global food system. The Western pattern diet was initially associated with wealthy industrial and post-industrial nations, but it is quickly being adopted globally, albeit with countless variations determined by cultural, social, political, economic, and biophysical circumstances (da Costa *et al.*, 2022). While it has provided many people with nutritional benefits, it is also, as I described above, responsible for vast environmental impacts. I will now detail why this is the case.

The contemporary food system – and thus also the Western pattern diet – is characterised by the so-called ‘industrial’ mode of agriculture, which “aims for the production of the greatest quantity of food in the smallest amount of space with the least labour, all for the goal of maximum profits” (Barnhill, Budolfson and Dogget, 2018, p. 4). While arguably agricultural production has strived for such aims since its inception, industrial agriculture is characterised by the deployment of quite recently developed technologies, such as fertiliser produced using the Haber-Bosch process, chemical pesticides, mono-cropping techniques, genetically modified seeds, large volumes of (fossil fuel enabled) irrigation, and a high reliance on mechanical assistance. The production aspect of the contemporary food system is responsible for the vast majority of its environmental footprint, accounting for 81% of its GHG emissions, 79% of soil acidification, and 95% of eutrophication, as well as 90% of water scarcity (Poore and Nemecek, 2018). As we will see in the next section, there are various ideas for how the techniques of industrial agriculture could be made more sustainable, but it is also worth noting that different forms of production within the industrial system are associated with vastly different environmental footprints. For instance, in the US a kilo of grass-fed beef produces approximately 170% of the emissions of beef produced on feedlots, primarily because grass-fed cows take longer to grow and do not reach the same size as those on feedlots (Capper, 2012).

Just as important as how food is produced is *what* is produced in the first place. The clearest example of this is the production of animal-based food, which tend to require much more environmental resources than plant-based foods, meaning that versions of Western pattern diets that are low in animal products are associated with much smaller environmental footprints (Castañé and Antón, 2017; Chai *et al.*, 2019). For instance, a recent study of people in the UK found that the diets of people eating a vegan diet are associated with only 25% of the greenhouse gas emissions of people eating a diet high in meat (Scarborough *et al.*, 2023). In the last fifty years, though, average per capita meat production has nearly

doubled (although it is worth noting that some countries eat much more than others; the average North American eats nearly twelve times that of the average Indian, for example) (FAO, 2023b).

The industrialisation of the global food system – and thus the rise of the Western diet pattern – is intrinsically connected with the globalisation of supply chains. Of course, global movement of food is not unique to the 20th and 21st centuries, but whilst before the pre-industrial era most countries produced much of their own food, globalisation means that it is now quite normal for countries to rely on imports for the majority of their needs. The wide variety of foods available within the Western dietary pattern relies on distribution networks that allow the supply of numerous foodstuffs to bypass pre-industrial seasonal and geographical constraints. Distribution's biggest environmental impact is its contribution to the global food system's GHG emissions, of which it makes up 10-15%. Food that is air-freighted causes by far the highest levels of emissions per unit of food. For instance, mangos tend to be imported to the UK by plane, meaning that 60% of the GHG emissions of the average mango in the UK are due to transport (Frankowska, Jeswani and Azapagic, 2019, p. 13). However, while air-freight is extremely carbon intensive, it accounts for only 0.16% of total global food miles; the majority of food miles are completed by boat (60%), followed by road (30%), and rail (10%) (Natasha Christian, 2018). These latter methods of transportation are much more carbon efficient than air-freight, meaning that even when food is sourced from distant countries, the emissions per unit of food are relatively low. For instance, 8% of the emissions of an avocado shipped from Mexico to the UK are due to its transportation (Ritchie, 2020). It is also interesting to note that some diets accumulate a high proportion of their transport-related emissions at the consumer end. For instance, 1% of *total* UK emissions are generated as food is driven home from the supermarket (Garnett, 2003).

Processing of food involves the various ways in which it is prepared, stored, eaten, and disposed of. In general, the environmental impact of the Western pattern diet due to processing is relatively small, with the exception of food waste. Approximately a third of the world's food production goes to waste, with nearly half of this wastage taking place during processing. This, of course, leads to unnecessary environmental consequences throughout the production and transportation phases (FAO, 2011; Dorward, 2012). Globally, about 12% of meat produced for human consumption is wasted. (Chemnitz and Becheva, 2021, p. 23). In poorer countries, this waste is mainly due to a lack of infrastructure, while in richer countries, oversupply leads to waste at the consumer level (Scarborough *et al.*, 2014; Tilman and Clark, 2014). The disposal of food waste in landfills is also a major source of methane when food is landfilled.

The production, distribution, and processing that underpins the Western pattern diet that dominates the contemporary world are variously responsible for substantial environmental impacts and, therefore, unsustainability. In the next section, I introduce four alternatives to the Western pattern diet.

3. Envisioning sustainable diets

I now move to describe the practical proposals for achieving more sustainable diets. There is near universal consensus amongst scholars, farmers, activists, governments, and businesses that it is possible to reduce environmental footprint of the contemporary food system to a substantial degree. Almost all agree this will require significant changes to the food system. However, the consensus ends when it comes to what should actually be done. In no particular order, disagreement relates to: the technologies or practices that ought to be deployed; the feasibility and/or desirability of developing more sustainable agricultural technologies or practices; the feasibility of changing supply and/or demand for particular foodstuffs; how the food system should be organised in relation to other socially useful systems (e.g. the energy system). Confusing matters further, there is also disagreement regarding how best to *implement* reforms within the food system; some commentators argue that decisive state-led programmes are essential, others defend bottom-up consumer-led change, others defend the role of private business. Put another way, the practical changes proposed are often difficult to separate from the context of the political and social projects of which they are a part.

Nonetheless, while almost no two people propose the same conception of a sustainable food system, it is possible to identify some general patterns and themes. In the rest of this section, I outline four distinct ‘visions’ of sustainable diets. Three of these visions are intended to represent a prominent contemporary discourse about how diets – and the food systems that bring them into being – ought to be transformed. These are *Sustainable Development*, *Promethean Development*, and *Green Radicalism*. The fourth vision – *Sustainability Maximising* – is not included as a plausible potential vision for human diets, but rather as a kind of philosophical baseline; an imagining of what diets might look like if the sustainability of food systems was acted on as an overriding priority. In the following, I describe each vision in turn, explaining their core tenets and sketching the political projects within they are situated. Then, in tables 1 and 2, I provide a brief illustrative comparison of how these visions claim to enhance the sustainability of two food products, namely beef and salad leaves.

The first dietary vision, which I call *Sustainable Development* is a *reformist* vision that holds that the global food system can be made sustainable through gradual, targeted interventions that are compatible with current political and social structures. This vision represents the mainstream orthodoxy when it comes to sustainable diets and is promoted by international development organisations like the United Nations Food and Agriculture Organisation and the World Bank, transnational agrifood companies, and, to varying degrees, national governments (Constance and Moseley, 2020, p. 68; Smith, 2020). Put briefly, this vision proposes incorporating concern for environmental impacts into agricultural practices through the implementation of ‘sustainable intensification’, a collection of practices that aim to improve the productivity and efficiency of agricultural systems while minimising negative environmental impacts by managing food systems more intelligently and deploying appropriate technology. While some who are aligned with the *Sustainable Development* vision

acknowledge that certain aspects of current diets, such as the high consumption of meat and dairy by the affluent, may not align with environmental goals, the vision maintains that most aspects can be made sustainable with relatively little disruption to the composition of diets.

I call the second vision of sustainable diets *Promethean Development*.²⁰ This vision, named after the mythical representation of audacious human progress, places its faith in the ability of human ingenuity and the application of new technologies to solve environmental problems. Of course, a reliance on the application of technology is important to *Sustainable Development* too, and there is some overlap between the two visions. However, the *Promethean Development* vision stands out for its proposal to move away from conventional ‘industrial’ farming techniques and move towards technologies that could fundamentally revolutionise agriculture. In its most radical form, this approach even seeks to eliminate the need for soil and living animals. With this in mind, the technologies proposed by *Promethean Development* are often speculative or not yet proven to work at scale. According to this vision, the Western dietary pattern could in principle be sustainably maintained and adopted by all of humanity. The advocates of *Promethean Development* are heterogenous in their political projects. On one side, it has been argued that synthetic meat has a role to play in a ‘fully automated luxury communism’ since if deployed at scale it has the potential to, for example, reduce the value of meat-like commodities to near zero, thus bringing about a new age of “post-scarcity” (Bastani, 2019, p. 174). Meanwhile, start-ups promising meat substitutes are attracting billions in venture capital, presumably driven by the prospect of lucrative returns (Chemnitz and Becheva, 2021, p. 65).

In contrast to both of the previous visions, *Green Radicalism*, holds that it is primarily the industrialisation of the global food system that is responsible for its unsustainability. Its proponents therefore reject the ethos of ‘productivism’ – i.e. ever increasing production and consumption as a desirable goal – which they argue is central to the contemporary global food system. Instead they propose a shift to diets that are consistent with humans *co-existing* with the environment (as opposed to managing it, as with *Sustainable Development*, or separating from it, as with *Promethean Development*). Practically, *Green Radicalism* advocates changes to industrialised diets like embracing organic or agroecological production techniques and localised supply chains, eschewing manufactured inputs, and, broadly speaking, trusting in ‘natural’ ecological processes to alleviate unsustainable environmental impacts. These changes are incompatible with the large-scale production of energy intensive foodstuffs, such as animal products and out-of-season plants, so the vision entails a substantial shift in the composition of diets. *Green Radicalism* has its strongest backing from individuals who are opposed to the current ‘corporate food regime,’ with the ‘food sovereignty’ movement being one of its main supporters.²¹

²⁰ The reference to Prometheus is borrowed from Dryzek’s taxonomy of environmental discourses (Dryzek, 2012, p. 53).

²¹ While the food sovereignty movement’s primary aim is to grant people control over their own food systems, it is also closely linked with promoting sustainability through methods such as agroecology, re-localising production, and modifying consumption patterns (e.g. Smith, 2020, p. 93).

The three visions of sustainable diets I have described so far are intended to represent dietary imaginaries that actually exist in the world. Therefore, to a lesser or greater extent, it is possible to imagine states promoting each of them, since part of the work their proponents have already done is balancing the demands of sustainability against other demands. However, while each is, on its own terms at least, more sustainable than many contemporary diets, the implicit allowances they make on behalf of other values, such as identity, people’s tastes or the livelihoods of agriculturalists, plausibly serve to undermine their diets’ sustainability. These compromises are understandable and (as we will see in later chapters) often justifiable, but it is also useful to imagine a vision that prioritises sustainability over any other value. After all, my conception of sustainable diets is potentially very morally demanding; unsustainable diets undermine people’s ability to lead minimally dignified lives. Given this demandingness, we need to examine closely what pursuing sustainable diets as much as we possibly could would look like. To this end, I propose a final vision, ‘Sustainability Maximising’, which prioritises sustainability above all other values. This vision focuses on finding the most effective production, distribution, and processing practices that increase sustainability to the greatest extent possible, while still providing sufficient food for the human population. For the sake of argument, I imagine that this diet is composed solely of the product ‘Huel’. Huel is a powder that is mixed with water into a shake and claims to be a ‘nutritionally complete’ meal replacement. It is made from a combination plant-based ingredients, including oats, rice, peas, flaxseed, so it is plausibly an extremely sustainable source of nutrition. That is, in any case, what I will assume.

To finish off this section, in tables 1 & 2 I illustrate the four visions by describing the practical measures each would take to increase the sustainability of two foodstuffs that both feature prominently in many Western pattern diets: *beef* and *salad leaves*.

Table 1. Measures to improve the sustainability of beef

<i>Sustainable Development</i>	High yielding, ultra-efficient breeds chosen; methane reducing additives added to feedstock; the unsustainability associated with feedstock reduced through the use of sustainable intensification of high yielding crops; perhaps a moderate reduction of beef consumption from globally affluent (move to less impactful meats and plant-based substitutes).
<i>Promethean Development</i>	Technology enables production to be decoupled from unsustainability, this may take the form of direct interventions in conventional agriculture (e.g. direct methane capture) but also, more likely, as whole new modes of production (e.g. lab grown meat); beef consumption of affluent can remain the same or increase, as can the rest of the global population’s.
<i>Green Radicalism</i>	Some beef produced as part of whole agro-ecological systems, but vast majority of beef production and its corollary consumption halted, with other sources of nutrition coming to the fore. Beef consumption becomes a rare luxury.
<i>Sustainability Maximising</i>	Beef production is halted entirely.

Table 2. Measures to reduce the unsustainability of salad leaves

<i>Sustainable Development</i>	Sustainable intensification principles followed and ‘smart crops’ deployed (accurate fertilisation and insecticide use, GMO high yielding varieties etc.); the most unsustainable aspects of distribution are reformed (e.g. biofuels to decarbonise air freight); consumption levels remain much the same.
<i>Promethean Development</i>	Vertical urban agriculture deployed (e.g. hydroponics); the inputs required are made more sustainable through economy-wide changes (e.g. low carbon electricity and direct air capture of CO ₂).
<i>Green Radicalism</i>	Production – and corresponding consumption – is sensitive to traditional seasonal constraints to avoid fossil energy use; production aligned with organic/agro-ecological principles; distribution limited to avoid excessive energy use; some citizen growing in urban areas.
<i>Sustainability Maximising</i>	Salad production is halted entirely.

4. Conclusion

Shortly after its debut, the advertisement depicting a woman eating a Tesco ‘Plantchef’ burger, which I described at the beginning of this chapter, was banned by the Advertising Standards Authority. The ASA said that claims of the advertisement could not be substantiated because, due to ‘complex production processes’, it is not possible to verify whether food products like the burger are associated with less environmental impact than a meat-based alternative. In response, Tesco said that they had never made the claim that the range was ‘wholly sustainable’, only that it was ‘better for the planet’ (Masud, 2022).

So, what would a ‘wholly sustainable’ diet look like? At the beginning of this chapter I gave a capability-led account of sustainable diets. I argued that the environmental sustainability of a diet depends on how the environmental impacts associated with its supply chain affect the central capabilities of morally relevant individuals who are vulnerable to the environment to a normal degree. Therefore, the environmental impacts associated with a wholly sustainable diet are entirely compatible with all (morally relevant and normally vulnerable) individuals’ central capabilities. In the second section of this chapter, I explored how we can make practical judgements about the sustainability of diets, then described the profound unsustainability of contemporary diets and the contemporary global food system that make them possible, with a particular focus on the broad category of diets that is the Western pattern diet. Finally, I set out four ‘visions’ of sustainable diets, which will serve as points of analysis as the thesis progresses. (The ‘Plantchef’ burger would, I think, fit in somewhere between *Sustainable Development* and *Promethean Development*).

There are a couple of things to take away from this chapter. First, given the unsustainability of current diets, promoting wholly *sustainable* diets would be a hugely ambitious project. No currently existing state’s efforts to promote sustainable diets are anywhere close to bringing them about. Second,

many popular understandings of what states would need to do to promote sustainable diets are overly narrow. The promotion of sustainable diets would require policies that ameliorate capability-affecting environmental impacts at each step of the global food system. Thus, policies to promote wholly sustainable diets would need to aim at bringing about structural change, with a particular focus on systems of agricultural production. So, should states implement such policies?

As a general rule, I think that states should adopt a broadly liberal approach regarding the diets of citizens. This notion naturally flows from the liberalism of the capabilities approach. As Nussbaum says, “where adult citizens are concerned, capability, not functioning is the appropriate political goal” (Nussbaum, 2000, p. 87). Put another way, states ought to be concerned with whether individuals *can* fulfil central capabilities, it should not be concerned with *how* individuals fulfil them. Thus, all other things being equal, the state should be ambivalent about whether individuals gorge themselves on beef burgers or follow an abstemious diet of vegetables and pulses. However, this chapter has demonstrated that *all things are not equal*: unsustainable diets profoundly undermine individuals’ capabilities. Moreover, the fact that we can envisage more sustainable diets means that the capability-undermining environmental effects of diets are not inevitable by-products of human existence; they are, to at least some degree, a result of the development of morally sub-optimal ways of producing, distributing, and processing our food. Therefore, states should not adopt laissez faire attitudes to the diets of their citizens. Rather, they should take unsustainable diets seriously, as a matter of justice. The next chapter is dedicated to exploring what that would look like.

Chapter 2. State duties regarding sustainable diets

In the last chapter, two observations were key. First, the central capabilities of humans are materially reliant on the resources and processes of the natural environment. Second, human diets are the products of various supply chains, of which each ‘link’ has the potential to have significant effects on that same natural environment. In combination, these observations mean that every diet can be assessed according to the ‘capability-affecting’ environmental impacts of its supply chain, or what I call its ‘sustainability’. I argued that many contemporary diets – and in particular the increasingly prevalent Western pattern diet – are profoundly unsustainable, and described four visions of (more) sustainable diets. This chapter is concerned with how states should respond to this state of affairs. Put simply: should states promote sustainable diets?

If one is committed to a capabilities-led conception of justice, then the obvious answer to this question is ‘yes’. As I have defined them, unsustainable diets undermine the central capabilities of at least some morally important individuals and thus represent a “violation of basic justice” that demands urgent moral attention from the state (Nussbaum, 2011, p. 74). But, as I noted in the introduction to this thesis, this is the beginning, not the end, of the answer. In particular, there are two sets of questions that demand attention. The first relates to the *basis* of a state duty to promote sustainable diets. Why exactly might the state have such a duty? What grounds it, apart from the broad – and so far vague – obligation states have to ‘justice’? The second set of questions relates to the *form* of the state duty. To what extent are states bound by the duty? What if the duty conflicts with another state duty? What can be said regarding the distribution implications of the duty? How, if at all, does the duty vary depending on who it is owed to? What should states do when faced with uncertainty about the sustainability of diets? In this chapter, I provide answers to both sets of questions.

In section 1, drawing on Nussbaum’s capabilities approach, I argue that state duties flow from the obligations of individuals, and are generated when institutions are better placed than individuals to ensure those obligations are discharged. Thereafter, the bulk of this chapter focusses on the *negative duties* individuals have with regard to the unsustainable environmental effects of diets.²² In sections 2 and 3, I explore how the ‘liability’ and ‘social connection’ models of responsibility generate state duties, arguing that they imply far-reaching state duties to limit the unsustainabilities associated with diets. In section 4, I explore how those duties should be balanced against other duties, and how they change depending on whether they are owed to individuals across borders or who are yet to exist. It is in this section that I introduce Nussbaum’s idea of the ‘tragic conflict’, which I will return to frequently as the

²² In addition to making the discussion more straightforward, the focus on negative duties is warranted for two reasons. First, as I described in the last chapter, most contemporary diets are, as a matter of fact, unsustainable. Therefore, the upholding of negative duties is particularly relevant and urgent in today’s world. Second, in liberal political philosophy, negative duties are often considered to be more stringent than positive duties. As I will show at the end of the chapter, this is not necessarily the position of proponents of the capabilities approach. Nonetheless, hopefully my argument is made less controversial by relying primarily on negative duties.

thesis progresses. In section 5, I discuss how states should respond in the face of uncertainty about the causal relationships that exist between agents' diets, the effects of those diets on the environment, and the way those environmental effects affect other individuals' capabilities. Finally, in section 6 I briefly defend the idea that states sometimes have a duty to promote capabilities abroad by adopting 'restorative' diets. I conclude by summarising the 'pro tanto' duty states have to promote sustainable diets, and explain how this propels us towards the discussion of the proceeding three chapters.

1. Individual duties as the basis of state duties

'State duties' are the obligations of states; the collections of social institutions that exercise legitimate authority over a group of citizens. Some of these duties relate to the political rights of citizens, such as those that pertain to democracy, transparency, or accountability. Others – and it is these with which this chapter is concerned – are duties to organize and regulate the political communities they govern. State duties should be distinguished from their practical policy manifestations. For instance, if a state has a duty to prevent murder, then laws against murder and the various state-led mechanisms of power enforcing such laws are examples of the state fulfilling that duty, rather than duties in and of themselves. In a just society, all state duties are at the very least consistent with justice, and many will be in service of it.

What state duties does Nussbaum's capabilities approach propose? To understand this, we need to first explore the moral basis of state duties in the approach. Although the capabilities approach is wholeheartedly 'political', with Nussbaum frequently asserting that individuals' access to capabilities ought to be a goal of "public policy", she does not spend much time exploring moral foundations of state duties (Nussbaum, 2000, pp. 77, 87, also 2011). On its face this is surprising, given that the issue – intertwined as it is with questions about the justification of political authority – has traditionally been a focus of political theorists (e.g. Rawls, 2001, p. 40). However, the minimal attention given by Nussbaum to the formation of state duties is explained by the 'methodological individualism' that underpins her approach (Robeyns, 2017, p. 184). This is the idea that social phenomena are best explained by reference to the actions, beliefs, and attitudes of individuals. Therefore, for her, the 'state' is not an entity that *can have* duties; the state is a social structure, and social structures are the accumulation of the actions – sometimes coordinated, sometimes not – of many thousands of individuals.

I now turn to a key passage in *Frontiers of Justice* in which she addresses the apparent tension between her commitment to methodological individualism and her endorsement of state duties:

To say that 'we all' have duties is all very well, and true. But it would be good if we could go further, saying at least something about the proper allocation of duties between individuals and institutions, and among institutions of various kinds.

Institutions are made by people, and it is ultimately people who should be seen as having moral duties to promote human capabilities. Nonetheless, there are four reasons why we should think of the duties as assigned, derivatively, to institutional structures. (Nussbaum, 2007, p. 307)

I discuss the ‘four reasons’ Nussbaum mentions momentarily, but I first want to emphasise the conceptual implications of the above passage, as they are important to this chapter’s argument. Nussbaum is claiming that, in certain circumstances, the duties of individuals ought to be taken up by institutions. To be clear, this is not to endorse some mysterious transmogrification of institutions into the sort of entities that can be the bearers of duties. Rather, it is to say that individuals should ensure that institutions operate in ways that uphold whichever duties are deemed to be best upheld via institutions. For the sake of brevity though, it is reasonable to say that institutions hold duties, and that those duties *flow from the duties of individuals*. It is this understanding of institutional duties that I move forward with.

Here, I briefly pause to replace the term ‘institutional duties’ with ‘state duties’ because my concern is with what the *state* ought to do regarding sustainable diets, rather than with institutions more broadly. That is not to say that other institutions could not hold duties generated in the manner I have just described; indeed, I think it is likely they do, and recognising this plausibly leads to a more widespread duty to promote sustainable diets than the one I am going to defend. However, since I am proceeding under the assumption that power ultimately resides with states, I do not think that too much is lost in the move to focussing solely on states.

Nussbaum identifies four kinds of situations where it is appropriate for the duties of individuals to be designated to states. First are situations in which ‘collective action problems’ mean individuals cannot effectively organise to ensure rights are respected and/or responsibilities are discharged. To illustrate, she gives the example of a system of property rights, arguing that managing such a system through individual ethical decisions would be a “recipe for massive confusion and failure”; a better solution is for individuals to delegate the relevant rights and responsibilities to an appropriate institutional structure (Nussbaum, 2007, p. 307). Second are situations in which fairness is at stake. We all have duties to promote capabilities, but some might be more or less inclined to do so; appropriately designed institutional structures ensure that individuals’ efforts align properly with their duties. Third are situations where individuals acting alone lack the “cognitive and causal” capacities to protect their rights or discharge their responsibilities (Nussbaum, 2007, p. 308). She gives the example of climate change, in relation to which individuals plausibly bear certain duties, but often lack the capability to bring about the necessary (collective) action, or the knowledge about the specific measures that need to be taken. Fourth, she worries that a world in which no duties were designated to institutions would be one where individuals’ lives were “devoured” by complex and taxing considerations about how to

maximise the capabilities of humanity (Nussbaum, 2007, p. 309). Much better, she says in a conclusion that also holds for the three other situations, that:

Institutions impose on all, in a suitable fair way, the responsibility to support [and respect] the capabilities of all, up to a minimum threshold. Beyond that... people are free to use their money, time, and other resources as their own comprehensive conception of the good dictates. (Nussbaum, 2007, p. 310)

It is worth briefly highlighting another situation that Nussbaum does not mention, but I think is quite uncontroversial; institutions also play an important *regulatory* role in relation to the duties individuals have to one another. That is, through promulgating rules and the use of coercion, just institutions ensure that individuals respect the duties that they have to one another. My co-citizens, for example, have a duty to not undermine my capability of bodily health; that duty plausibly generates duties on the state to prevent others from carrying out activities that might pollute my local environment.

The environmental effects associated with (un)sustainable diets will often give rise to state duties, for exactly the sort of reasons Nussbaum highlights. These reasons are implicitly reiterated as the chapter progresses, but the point bears being made explicitly here:

- *Collective action problems*: the capability-undermining environmental impacts associated with diets are often collectively caused, with the result that coordinating a response at the individual level would be practically impossible.
- *Fairness*: for various reasons, different states, groups of individuals, and individuals have varying responsibility for the unsustainabilities associated with diets. State-led coordination is plausibly required to ensure that benefits and burdens are appropriately shared as the problem is addressed.
- *Epistemic capacity*: as I will argue shortly, individuals ought to have the freedom to eat diets consistent with their central capabilities, while ensuring those diets do not infringe of the central capacities of others. However, the global food system is hard to understand and individuals should not have to devote their lives to careful consideration of long and opaque food supply chains and their associated environmental impacts. Rather, their institutions should ensure that the sets of decisions they can make regarding diet are all consistent with justice.
- *Practical capacity*: many agents are not only unaware of the complex, systemic changes that are necessary for transitioning to more sustainable diets, but they are also unable to bring about such changes. Many of the changes required may only be within the capacity of the state (policy change, state-led investment, etc.).
- *Regulation*: as we will see, individuals have various duties regarding the environmental effects of diets. Just societies would ensure that those duties were respected.

To summarise, according to the (methodologically individualist) capabilities approach, the provisioning of rights and discharging of duties are ultimately the responsibility of individuals. State duties, though, are generated in circumstances where the state is better placed than individuals to ensure those responsibilities are upheld. Importantly, the duties individuals have in relation to the environmental effects of their diets seem well-placed to generate state duties, since the capability-undermining impacts of the food system is an issue that requires coordinated action at the societal level.

2. The liability model and state duties

The goal of this and the next section is to establish the negative duties individuals have to not undermine one another's central capabilities via the environmental effects of diets, and the state duties that follow from these individual duties. I do this through the concept of 'responsibility'. Individuals have a duty *to not become responsible* for undermining other's central capabilities. Drawing on Iris Marion Young, I argue that individuals become responsible in two ways (Young, 2011). First, individuals are responsible if they are, or would become, 'liable' for undermining another individual's capabilities. This type of responsibility, and the state duties it generates, is the topic of this section. Second, individuals can become responsible due to their 'social connection' to the undermining of capabilities. That is the topic of section 3. My overall argument is that there are individuals who are responsible for a very large proportion of the capability-undermining environmental effects associated with diets, and that this translates into expansive state duties to promote sustainable diets.

The liability model (with its language adapted for a capabilities-led approach) holds that an agent is liable (and therefore 'responsible') for the undermining of an individual's capabilities when a direct cause-and-effect relationship can be established between the undermining of the individual's capabilities and a specific action, or actions, taken by the agent; and the agent can be held morally blameworthy for the action(s) (Young, 2011, pp. 97–100). In this section, I discuss what it means for an agent to fulfil these conditions, and discuss the state duties that are generated as a result.

As per the first condition, in order to ascribe responsibility, the liability model requires that a direct cause-and-effect relationship can be established between an agent and the undermining of individuals' capabilities. I take it that 'direct causation' requires a relatively clear chain of causation between identifiable individuals who have had their capabilities undermined, and the actions (or inactions) of identifiable agent(s) (Eckersley, 2015, p. 348). To make this concrete, imagine a broiler facility operating near the Musi River in India. It houses hundreds of thousands of birds and thus results in significant environmental impacts. Of concern in this example is the waste generated by the farm, some of which is regularly discharged into the Musi. The watercourse is used for drinking water, so the contamination undermines the capabilities of individuals downstream of the facility. For the sake of argument, let's say that the agent managing the facility – call them 'the boss' – has complete control over everything that occurs at the facility and that the discharges are caused by their bad management. In such a situation, the boss has 'directly caused' the undermining of the individuals' capabilities

downstream; the chain of causation that brings about the contaminated drinking water terminates with them.

Where control over a situation is not held by just one agent, direct causation can be shared. For example, we might imagine that as well as the boss' poor management, facility workers cut corners when it comes to waste management, meaning that the discharges into the river are made even worse than they would have been otherwise. These are cases of joint causation; the boss and the workers *both* directly cause the river pollution. Agents can also directly cause environmental effects via other agents and technologies that are under their control. We might think that directly causing an effect via something else is oxymoronic, but it is the agent in question's control over the 'chain' of causation that is of importance, not the agent's proximity to the environmental effect. In a world in which food production is often controlled by remote agents, it is important to acknowledge this. For example, we can imagine that executives running the corporation that owns the broiler facility ordered its construction despite knowing that such facilities inevitably cause some pollution, no matter how exemplary the on-site waste management practices. In such a case, it does not matter if the executives never set foot at the facility; the fact that its construction was under their control means that they directly caused the water pollution.

I do not need to elaborate any further on what direct causation looks like; it is quite an intuitive concept. I will quickly note, however, that there are many cases where a direct causal link between agents, environmental effects, and individuals' capabilities may well exist, but is shrouded by uncertainty. Perhaps the most obvious example of this is when environmental effects are caused by the aggregate actions of numerous agents, which makes it hard, or even impossible, to follow the chain of causation from the actions of any one agent to any particular capability-undermining effect. I discuss how states ought to react to uncertainty like this later, first in section 3, then in section 5.

Let's take stock. The task at hand is to describe the circumstances in which individuals have a responsibility not to bring about capability-undermining environmental effects, with a view to use that responsibility to inform the duties states have with regard to unsustainable diets. In this section, I am exploring how individuals have a responsibility to not become *liable* for their environment-affecting actions. I just explained the first condition that must be present for an individual to be liable for a potential environmental effect; they must be directly causally implicated in bringing it about. The second condition required for liability is that they are morally blameworthy for the action that brought the effect about. In what follows, I continue using the example of the Musi pollution. I first simply stipulate a situation where the boss would also be morally blameworthy, and explain the state duty that is generated as a result. I then explore some cases where the boss would not be blameworthy, but where I think state duties are generated nonetheless.

Let us intuit a situation where the boss would be obviously morally blameworthy if they were to cause the river pollution. Perhaps they are fully aware of the harm that would be caused by neglecting proper waste management protocol, but plan to secretly keep the money it would cost for themselves,

spending it on frivolous luxuries. In such a case, if the boss directly caused the river pollution they would be failing in their responsibility to not become liable for the undermining of the downstream population's capabilities. (Or, put more simply, they would be failing in their duty not to undermine the downstream populations' capabilities). What does this mean with regard to state duties? Since states have 'regulatory' duty to ensure that individuals comply with their duties, the Indian state has a duty to prevent the boss from undermining the downstream population's capabilities. How the state fulfils that duty practically is not my concern here, but, for illustrative purposes, this might manifest in a regulation preventing the discharging of harmful pollutants into the environment.

However, we can also imagine examples where the blameworthiness of the boss is diminished, or not present at all. Here there is not the space to exhaustively list the conditions required for moral blameworthiness. Instead, it is enough to consider the following three sets of cases. First – in a contrived example that I provide a variant of below – the boss might appeal to the fact that his workers are so lazy that even if he had followed proper waste management protocol, the pollution would have occurred anyway. We might think that an effect being overdetermined in this way undercuts an individual's blameworthiness, since their acting in the morally right way makes no difference to the eventual outcome. Second, imagine cases where the boss is *ignorant* of the fact that neglecting proper waste management would cause water pollution, or – in an example of 'moral ignorance' – does not understand its ethical impact (Peacock, 2021). Perhaps, for example, the water pollution has its effect in a distant part of India, or the boss has been convinced by industry propaganda that the effluence is completely harmless. It is usually understood that ignorance can excuse individuals of moral blameworthiness, or at least mitigate it somewhat, because if one genuinely does not know that an action leads to an outcome, it seems unfair to hold them to the same moral standard as someone who intended it (Young, 2011, pp. 97–98). Third, we can imagine cases in which the downstream population has consented to the facility's pollution. Perhaps they are glad of the jobs the facility brings, enjoy the fresh supply of chicken, or are, for some reason, inclined to support this kind of industrial agricultural development no matter the cost to themselves. Again, if the water pollution has been consented to then it seems unfair to hold the boss morally blameworthy, at least to the same degree that we would hold them if they did not obtain consent.

Let us assume, for the moment, that in all the cases I have just described the boss' moral blameworthiness is dissolved, meaning they are no longer liable for the undermining of the downstream population's capabilities. Where does that leave state duties regarding the water pollution? It would be odd for ignorance, consent, and no-difference-making to mean that states should permit actions that undermine individuals' capabilities. But what is the alternative, given that state duties flow from the duties of, in this case, the boss, and they are not failing in any of their duties? I consider each case in turn.

Let us first consider cases where individuals' actions make no difference to whether or not the capability-undermining effect comes about. As I said before, the example of the lazy workers is slightly

contrived; more realistically, we might imagine the executives of the corporation that own the broiler facility appealing to the fact that if they had not constructed it, someone else would have. I do not think it is plausible that such an appeal alleviates the executives' blameworthiness. The fact that the downstream individuals' capabilities would have been undermined anyway does not change the fact that, in the event, it was the executives that did so. Therefore, this is a straightforward case of responsibility as liability, and should be treated by the state as such.

Next, let us consider cases where ignorance appears to absolve the boss of their responsibility. I draw attention to two points. First, in such cases, the boss *would be* responsible *if only* they properly understood the consequences of their actions. Second, the Indian state *is* in a position to properly understand the consequences of the boss' actions (or should be in such a position; more on states' ability to understand environmental causes and effects in section 5). Considered together, these two points mean that the state should organise society in such a way that the boss fulfils the obligations they *would* have if only they had full knowledge of the relevant facts. This aligns with one of Nussbaum's initial justifications for states duties; states often have more capacity than individuals for understanding how different systems and social structures interact with one another, a fact that holds particularly strongly regarding humans' interactions with each other via the natural environment. Put another way, states should provide (metaphorical) guardrails constraining individuals from accidentally performing actions that undermine other individuals' basic abilities to flourish.

(It is perhaps worth noting that *the way* the boss should be treated by the state plausibly varies depending on whether or not they are *in fact* blameworthy. Individual blameworthiness might, for example, justify *punishment* that ignorance might excuse. Again though, the practical implementation of state duties is not my concern here).

Finally, consider cases where individuals consent to having their central capabilities undermined by an environmental effect. To begin with, I am not sure that the state should permit individuals to consent to having their capabilities undermined at all. As I noted in the introduction to this thesis, Nussbaum is very clear that individuals should not be *forced* to act on the freedoms offered by a full set of central capabilities; even with access to plentiful food, an individual is permitted to fast (Nussbaum, 2000, p. 87). But there is an important moral difference between choosing to fast and making the choice to never again have access to food; it seems to me that some rights are the sort that individuals ought not be able to give up.²³

For the sake of argument though, let us assume that individuals can consent to such a thing; after all, each individual is, first and foremost, sovereign over their own lives. In such circumstances, it seems to me that states should ensure that the conditions necessary for genuine consent are present; this aligns with Nussbaum's claim that states should ensure that individuals have the 'cognitive and causal'

²³ Nussbaum would be concerned that those making such a decision were motivated by so-called 'adaptive preferences'. This is the notion that individuals may accept and even embrace bad conditions, since preferences can be "deformed by ignorance, malice, injustice, and blind habit" (Nussbaum, 2000, p. 114).

capacities to be treated and to treat others fairly. Again, this is not the time for an exhaustive discussion of the conditions of valid consent. To give a placeholder though, take it that in order to consent to having one's capabilities undermined, one must have a full understanding of what is involved and the decision must be made freely in conditions where one party does not dominate the other. This ideal is very far from being realised today, with many millions of people submit 'voluntarily' – in that they are not physically coerced into making the decision – to environmental conditions that undermine their central capabilities, but in situations in which to do otherwise would be to undermine their capabilities even further. So, in the examples I gave earlier of the downstream community 'consenting' to the water pollution, the state ought to ensure they are fully informed of the consequences the pollution has to their health and, more fundamentally, that their bargaining power within society as a whole is not so weak that they have no choice but to consent to whatever environmental conditions they are subjected to. It is only under these, or similar, conditions that consent would permit the boss to pollute the river.

(As a point of interest, note that that the above appears to demonstrate that individuals' negative duties can generate positive duties on states, in this case to ensure the conditions are present for the downstream population to give valid consent. Such a possibility is plausible; for instance, negative individual duties to not harm one another translate into positive state duties to wield coercive power to ensure that individuals do not violate their negative duties. However, in the above I think that the full duty of the boss might be something like 'I have a duty to not become liable for the undermining of individuals' capabilities *unless* I can obtain valid consent from those individuals'. If this is the case, then the states' positive duty to ensure that the conditions required for valid consent are present flow from the boss' positive duty to do the same).

I have just explored three instances where lack of blameworthiness might absolve individuals from being liable for bringing about unsustainable environmental effects (although I only took two of them seriously). A plausible general rule can be drawn from that exploration. That is, the conditions that are required for *individuals* to be blameworthy should inform and even generate *state* duties. Combined with states' basic duty to enforce individuals' duties to not become liable for undermining each other's capabilities, this implies a broad set of state duties to constrain environment-affecting actions that would directly cause the undermining of central capabilities.

3. The social connection model and state duties

The liability model generates state duties in relation to environmental effects that would be directly caused by identifiable agents. However, there are two types of environment-affecting actions for which individuals cannot be held liable, but which I believe they still have some responsibility towards.

First are environment-affecting actions that have no discernible effect by themselves, but have profound effects when combined with the effects of others' actions. Climate change is a good example of this. As I described in chapter 1, the global food system is responsible for a substantial proportion of anthropogenic greenhouse gas emissions, and therefore has caused – and will continue to cause – a rise

in global temperatures. In turn, by disrupting the particular set of climatic conditions in which human civilisations have developed and grown accustomed to, these rising temperatures are causing various capability-undermining effects, effects that will almost certainly worsen significantly in decades to come. It is impossible, however, to attribute any capability-undermining effects of this temperature rise to any particular agent within the global food system; the climate system and its effects are just too complex. (Arguably, this is due to our epistemic limitations rather than a qualitative difference between the effects of climate change and, say, the river pollution of last section; I discuss this point briefly in section 5).

Second are the actions of individuals that contribute to the social structures that enable or encourage capability-undermining environmental effects. To see what I mean here, notice that no agent is ever truly the ‘prime mover’ of a chain of causation that ends in a capability-undermining environmental effect. For example, the executives who take the decision to build the broiler facility of section 2 do not take the decision to construct in a vacuum. Perhaps their corporation is publically owned and the returns expected by shareholders can only be achieved by expanding operations. In such a context, the executives might see no alternative but to build the new broiler facility. In doing so, they are conceivably meeting public demand for chicken, demand that advertising executives, public health bodies, development agencies, shopkeepers, and even individual eaters of chicken have all played a part in creating. None of those individuals directly cause the water pollution, but their actions nonetheless contribute to bringing it about.

In both these cases, I take it that individuals become responsible for the capability-undermining environmental effects through their ‘social connection’ to what Young calls ‘structural injustice’. Young argues that structural injustice is present when the distribution of resources, opportunities, and privileges is skewed in favour of certain groups while systematically disadvantaging others (Young, 2011, pp. 45–52).

How does responsibility for structural injustice come about? Structural injustice is not caused by the actions of any specific individuals. Rather, it is caused by the actions of thousands of individuals, all acting according to the “normal rules and accepted practices” of the institutions and social systems that organise their societies (Young, 2011, pp. 47–8). According to Young, individuals become responsible for the effects of structural injustice through their relationship – their ‘social connection’ – with the unjust institutions and social systems of society:

The social connection model of responsibility says that individuals bear responsibility for structural injustice because they contribute by their actions to the processes that produce unjust outcomes... All who dwell within the structures must take responsibility for remedying injustices they cause, though none is specifically liable for the harm in a legal sense. Responsibility in relation to injustice thus derives not from living under a common constitution, but rather from participating

in the diverse institutional processes that produce structural injustice. (Young, 2011, p. 105)

So, according to the social connection model, individuals become responsible for unequally borne capability-undermining environmental effects through their *participation* in the processes that bring those effects about. ‘Participation’ here is understood as engaging in or benefiting from activities that disproportionately undermine capabilities through their associated environmental effects, or supporting policies and practices that enable such activities. As observed by Eric Godoy, an individual’s responsibility for the effects of structural injustice scales relative to their participation in those structurally unjust processes (Godoy, 2017, p. 112).

Godoy has also observed how well structural injustice describes climate change, where individuals who are responsible for more emissions tend to be much less vulnerable to its consequences (Godoy, 2017, p. 112). Indeed, a similar observation can be made with regard to practically every capability-undermining environmental effect; those who benefit most from environment-affecting actions are very often those whose capabilities are most insulated from their effects (this pattern becomes even more stark once we consider future generations as a potential vulnerable party). It is no surprise, then, that the unsustainability of the global food system also manifest in a structurally unjust pattern, with those who benefit from them not bearing a fair share of the environmental costs, and those who are most affected by those costs often having the least power to change the system.

The benefits of unsustainable environmental effects partly accrue in the form of profits to, for example, the shareholders of agrifood companies, with the burdens falling on vulnerable groups of people forced to bear the environmental effects of food production and processing. But the pattern of structural injustice is also visible in the dietary consumption habits of individuals. In order to provide an illustrative example of a group that benefits from structural injustice, here I draw on Ulrich Brand and Mark Wissen’s notion of a “transnational consumer class” whose consumption patterns “imply a disproportionate claim on global resources, sinks and labour power” (Brand and Wissen, 2013, pp. 698, 687). Let us assume that this group of individuals consumes much less sustainable diets than other groups of individuals, while enjoying lives where their capabilities are relatively shielded from the associated environmental effects.²⁴ Each state contains some individuals who belong to the transnational consumer class, although wealthier states tend to contain a higher proportion as compared to the rest of the state’s population. The social connection model suggests that individuals belonging to the group bear more responsibility for the capability-undermining effects of unsustainable diets than individuals

²⁴ Does such a ‘transnational consumer class’ actually exist in relation to food? Hirth et al, drawing on Brand and Wissen’s framework, say yes, defending the existence of an ‘imperial mode of food provision’ that services the group’s dietary consumption (Hirth, Bürstmayr and Strüver, 2021). And the data does seem to support this. For instance, increases in wealth correlate strongly with increased meat consumption. (It is interesting to note, however, that in highly affluent countries meat consumption has flattened off or even decreased slightly; perhaps the transnational consumer class isn’t quite as rapacious in its appetite for meat as it is for other forms of consumption) (Vranken *et al.*, 2014).

who eat more sustainable diets. As with responsibility as liability, I take it that individuals have a duty to not become responsible for the structurally unjust aspects of unsustainable diets. But how is such a duty discharged?

We might think that members of the transnational consumer class should at least partially discharge it through changing their consumption habits; by, for example, choosing to eat organically produced food, or moderating their meat consumption. Arguably that position has some merit.²⁵ However, Young argues that “most of us are objectively constrained by the rules, norms, and material effects of structural processes when we try to act alone” (Young, 2011, p. 111). She therefore stipulates that responsibility for structural injustice is inherently *shared*, by which she means it is responsibility that individuals “personally bear”, but they do not bear it alone (Young, 2011, p. 109). As a result, she argues that responsibilities revealed by the social connection model should be discharged through *collective action* (Young, 2011, p. 111). Since Young is primarily concerned with how individuals can discharge their responsibilities themselves, for her this takes the form of individuals organising collectively in the public sphere in order to bring about change in social institutions (Young, 2011, p. 151).

However, as noted in section 1 of this chapter, Nussbaum argues that individual duties that require collective action to be upheld successfully are often best designated to social institutions like the state. Therefore, I take it that the social connection model reveals a state duty to work towards ameliorating the structural injustices in which its citizens (or *some* of its citizens) participate. Returning to our example, this means the social connection model reveals a state duty to ameliorate the unsustainability of the transnational consumer class’s diet. This might mean, for example, banning the consumption of certain foodstuffs, or ensuring that the individuals whose capabilities were undermined by the environmental effects along the diet’s supply chain receive appropriate compensation. The social connection model reveals a similar state duty with regard to any other structural injustice associated with unsustainable diets.

4. Responsibility to compatriots, outsiders, and future generations

In the previous two sections I explored the responsibilities individuals have in relation to the capability-undermining effects that are associated with diets. Drawing on Iris Marion Young’s two models of responsibility, I argued that individuals have a duty to not become *liable* for the undermining of individuals’ capabilities, and also to not become *socially connected* with the undermining of

²⁵ After all, if it is participation that generates responsibility, then avoiding participation plausibly diminishes responsibility. Young would reply that individuals have no choice but to participate in (unjust) social structures. But this is a *practical* claim. Is it true with regard to the unequal distribution of unsustainable environmental effects within the contemporary food system? To a large extent the answer is ‘yes’: in the Global North individuals cannot help but participate and benefit from that food system. Nonetheless, it seems plausible to me that choosing to not participate in the food system’s worst excesses – air-freighted berries, soy fed beef, etc. – might negate *some* of an individual’s responsibility.

individuals' capabilities. Since – as per section 1 – state duties flow from the duties of individuals, these individual duties imply duties on states to prevent their citizens from becoming responsible in either of those ways.

So far, however, I have talked in general terms about the responsibilities agents have to not undermine the capabilities of 'individuals'. In this section, I explore how state duties might change depending on *who* their citizens owe responsibility to. While doing so, I also introduce the idea of 'tragic conflicts' – which occur when the state holds duties that cannot be reconciled with one another – and discuss how states ought to act upon encountering them (Nussbaum, 2005). As the thesis progresses, the identification of tragic conflicts will prove to be a core part of my analysis.

4a) Compatriots

Let's begin with the state duties generated by the negative responsibilities individuals have to their currently existing compatriots. Much of Nussbaum's work is focussed on the nation state, and she stipulates that individuals who belong to the same nation have strong obligations to one another (e.g. Nussbaum, 2000). As implied by my discussion in sections 2 and 3 of this chapter, this entails an obligation to not undermine each other's capabilities via the environmental effects of unsustainable diets. But what form of state duty would this generate? To explore that question, let's return to the example of the water pollution from the broiler facility.

We might intuitively think that the state ought to simply take action to *prevent* the water pollution, by, for example, regulating the discharging of polluting substances into watercourses. Of course, it is the undermining of individuals' capabilities that is of moral importance, not the environmental effect itself, and capabilities can often be met in various different ways. It is therefore plausible that in at least some cases it is acceptable for the state to allow the water pollution to continue, as long as its capability-undermining effect is ameliorated. Perhaps the downstream individuals' access to fresh water can be secured by piping it to them from elsewhere, or they could be given the resources to relocate to a part of the river that is unpolluted. To be clear, this is not to say that any level of disruption to individuals' lives is permitted as long as there exists a conceivable route to them having their central capabilities met. Just the opposite is true; individuals build their lives and build dignified lives within the circumstances in which they find themselves. So, all other things being equal, individuals should not have the circumstances of their lives altered to accommodate the environmental effects of others' actions.

However, there is one situation where it is acceptable for individuals' lives to be substantially reorganised to accommodate for what would otherwise be a capability-undermining environmental effect, and that is when the environmental effect is a result of an action that is itself required for the fulfilment of central capabilities. We can imagine, for instance, a situation where the chicken facility is required to provide adequate nutrition to the local area. In such a case, the relocation of the downstream

population might well be justified, and the state would have a crucial role in, for example, establishing that the facility is indeed fulfilling an essential need, ensuring that the downstream population is properly compensated, etc.

What about situations where an environmental effect is required for the fulfilment of central capabilities, but its capability-undermining effect cannot be mitigated? Imagine, for example, a situation where the supply of chicken is required (in order to provide adequate nutrition), but the downstream population cannot be relocated and an alternative water supply cannot be made available to them. In this hypothetical, the Indian state has two duties that cannot be reconciled with one another; the duty to ensure its citizens do not fall victim to capability-undermining environmental effects and the duty to ensure its citizens have access to adequate nutrition. Nussbaum calls these types of situation, where a conflict between two sets of obligations cannot be resolved, ‘tragic conflicts’ (Nussbaum, 2005). By entertaining such a concept, Nussbaum is rejecting the notion that the central capabilities of individuals can only ever ‘appear’ to conflict, since once the ‘right’ choice has been made (e.g. allow the pollution to allow the supply of adequate food), the “conflicting obligation drops away, no longer exerting any claim” (Nussbaum, 2005, p. 1010). Rather, Nussbaum believes that once a decision has been taken to prioritise one claim over another, the conflicting obligation persists – as what is sometimes called a ‘moral remainder’ – with both duties binding the party in question, even when circumstance forces them to choose one over the other (Nussbaum, 2005, p. 1007).²⁶ In the current example then, the Indian state faces an moral dilemma, caused by the tension between its duty to safeguard citizens from capability-undermining environmental effects and ensuring their access to adequate nutrition.

In the context of this thesis, there are three things to say about tragic conflicts. First, I proceed on the assumption that states are not operating in conditions of absolute environmental scarcity, meaning that there are, in principle, sufficient environmental resources to cater for all individuals’ central capabilities, if only societies were organised appropriately. It follows that any tragic conflicts that arise are the result of improperly organised societies, not an inevitable outcome of individuals sharing a finite planet. For example, it is my belief that India is, in theory, able to produce sufficiently nutritious food in sufficient quantities to feed its whole population without having to accept dangerous river pollution (by enforcing strict pollution standards; by curtailing its population’s growing reliance on chicken for food; etc.).

Of course, the claim that we do not exist in conditions of absolute environmental scarcity is an empirical one and I could be wrong in making such an assumption. On this possibility, I want to make two comments. First, it is important to note that the presence of seemingly intractable conflicts does not necessarily demonstrate conditions of absolute environmental scarcity; sometimes the intractability arises due to a lack of imagination with regard to how societies could be organised differently. This

²⁶ I borrow this terminology from Bernard Williams (Williams, 1973, p. 179). Nussbaum agrees that such conflicts are not merely *prima facie*, where once the right choice has been made any moral obligation on the other side dissolves.

lack of imagination is understandable, since the organisational failures that lead to conflicts between different rights can often take place over years, even over generations, or might have come about for seemingly rational reasons. For example, the use of artificial fertiliser – which allows for cheaply increasing the productivity of many crops – is central to contemporary agriculture, so at first glance we might think the capability-undermining effects that are associated with its use (caused by, for instance, greenhouse gas emissions from its production) are a regrettable upshot of securing sufficient food for the world’s population (a tragic conflict). However, it is probably the case that the use of artificial fertiliser could be substantially reduced, or even eliminated, while maintaining sufficient food supplies, if only societies committed to actions that offset any loss of crop productivity (e.g. eating less meat, committing more resources to boosting productivity in less environmentally-impactful ways). In other words, the tragic conflict could be dissolved (and thus *is not* tragic), if only major reorganisational steps were taken. (Of course, there is a debate to be had about the extent to which infeasibility can cause tragic conflicts; if it is politically infeasible to reduce meat consumption, does that mean the conflict is indeed tragic? However, I put that question aside for now). The second comment I want to make regarding the assumption that we do not exist in conditions of absolute environmental scarcity is that if it is wrong, then it is not only my thesis that has a problem, but the majority of contemporary liberal political theory. This is because arguably *the* core tenet of liberal political theory – that each and every individual is of equal moral worth, and that society ought to be organised in a way that reflects this – is hard to square with a reality in which there are only sufficient environmental resources to ensure good lives for *some* individuals.²⁷

I now return to the second of my three comments regarding tragic conflicts, which is that the moral remainders that tragic conflicts leave ought to be understood to guide state actions going forward (Nussbaum, 2005, p. 1010). In the short-term, this might entail taking actions that ameliorate whatever the negative impact is as much as possible (it could not be ameliorated entirely, since otherwise it would not be a tragic conflict). This might mean, for instance, providing the population downstream of the chicken farm with targeted healthcare to try to treat the worst of the symptoms. In the long-term, the moral remainder obliges the state to do its best to reorganise society so that the conditions that cause the tragic conflict are not present going into the future. This might mean, as I have noted already, shifting the Indian population’s diet towards one that is both healthy and non-polluting.

The third of my comments on tragic conflicts is that just because a conflict between two duties is tragic does not mean that there is nothing to be said about how the conflicting duties ought to be prioritised over one another. After all, while all individuals ought to have access to the entire set of central capabilities, access to some capabilities might be more urgent than access to others, depending on the given context. For example, in many contexts a convincing argument can probably be mounted

²⁷ For an insight into how canonical political theories might be reimagined for conditions of absolute environmental scarcity, see Tim Mulgan’s *Ethics for a Broken World* (Mulgan, 2014).

that one group's access to food trumps another group's access to the central capability of 'play'. However, as this thesis proceeds I will not try to adjudicate between the conflicting claims at the heart of tragic conflicts. Rather, I think it is enough to highlight the existence – or even the *possibility of the existence* – of tragic conflicts that might arise due to the promotion of sustainable diets. Adjudicating between such conflicts would, I think, require a context-specific, deliberative approach that is outside the scope of this thesis.

4b) Outsiders

Is the state duty to constrain unsustainable diets any different when the unsustainability in question affects the capabilities of individuals outside of the state? For instance, we might imagine that the river pollution I have discussed above flows straight into the sea, leaving Indians unaffected and instead polluting the drinking water of some people living in northern Sri Lanka. It is quite clear to me that the state duty persists in such a case. After all, the duty flows from the negative duty individuals have to one another not to undermine each other's central capabilities. The state duty is therefore founded in the basic liberal principle that, except in exceptional circumstances, it is impermissible to undermine the capabilities of others, rather than any *positive* duty to outsiders (the existence of which I discuss in section 6 of this chapter). This principle endures across borders and thus states have a duty to constrain *all* actions that bring about unsustainable diets, even if they cause an unsustainability that affects individuals outside their jurisdiction.

Nevertheless, it seems plausible to me that the state duty to constrain unsustainable diets is *slightly* weaker with regard to individuals outside of the state's jurisdiction. This is because it is commonly held that individuals have special obligations to their compatriots (e.g. Miller, 2005). Assuming this is right, in certain circumstances the state's duty to constrain unsustainable diets would be trumped, specifically when abiding by it would undermine the central capabilities of the state's own citizens. That is, it might be tolerable for states to not constrain a diet that undermines the capabilities of outsiders via the environment, if that diet was essential to the central capabilities of the state's own citizens. As in the last subsection though, such a set of circumstances would constitute a tragic conflict and is therefore not without moral consequence. Practically speaking this might mean the state should compensate those affected, as well as make significant efforts to change the circumstances so that the unsustainable diet in question can be eliminated as soon as possible.

4c) Future generations

I take it that individuals who are currently living have a duty to not take actions that would undermine the central capabilities of future generations, and this duty implies a correlative state duty. For example, if the use of pesticides in India today mean that future generations will have insufficient natural

pollinators remaining to grow necessary crops, the Indian state should take action to curtail the use of pesticides.

Similar to above, it is plausible that individuals have a special obligation to those already living, meaning that if a tragic conflict arises between current generations and future generations, states may be justified in choosing to promote the capabilities of current generations over future ones. It is worth saying, however, that I am not sure that this prioritisation of current generations is without limits. For instance, should states prioritise the central capability of ‘play’ of some of its citizens over all future generations’ central capability of bodily health? My intuitions say not, but it is hard to know what other position to adopt because Nussbaum does not give any guidance regarding the relative importance of different central capabilities nor about how to weigh the interests of the many versus the few. As above in 4a), the issue can be sidestepped by observing that for states to be faced with decisions like this, we would surely have left conditions of moderate environmental scarcity and entered the realm of absolute scarcity. (Again, if we assume conditions of only moderate scarcity, then tragic conflicts between current and future generations’ capabilities should, in principle, only arise as a result of accidents or poor societal design).

The problem, though, is that future-affecting accidents are difficult to avoid and societies difficult to design appropriately because states are faced with substantial *uncertainty* with regard to future generations. This uncertainty is partly due to the fact that we cannot know the preferences of future generations. Here the capabilities approach is a useful starting block; if Nussbaum is correct, the central capabilities represent near-universal facts about the composition of human flourishing that we can use to inform our future-affecting actions. However, while we can say that future individuals will require, at the bare minimum, access to a full set of capabilities, we cannot know what their preferences will be about *how* those capabilities should be fulfilled, since this depends on their conception of the good life. Would future generations begrudge us the destruction of the Amazon, or – ensconced in their holodecks – think our present concern about it parochial?

Amongst capabilities theorists, there is broad agreement that the solution to the fact that we cannot know future individuals’ preferences is that we ought to leave them a natural environment that allows them the freedom to choose between a wide variety of functionings (e.g. Holland, Linch and Amy, 2016). Disagreement arises regarding the way in which the actions of present generations impact on that freedom. This debate centres on the question of the extent that ‘natural capital’ can be ‘substituted’ with other forms of capital. A high degree of environmental substitutability means that if environmental resources become scarce in the future, the wellbeing of future generations will not be negatively affected, since they will be able to rely on alternative resources. For example, food can be grown in laboratories when soil is depleted, air conditioning provided in place of a climate with less fierce heatwaves, etc. Sen argues that the capital humans obtain from the natural environment is almost *entirely* substitutable, and therefore reasons that “what we are obligated to leave behind is a generalized capacity to create well-being, not any particular thing or any particular resource” (Anand and Sen, 2000,

p. 2035). Conversely, Fabian Scholtes argues that by assuming substitutability and continuing to pursue actions that affect the natural environment in potentially irreversible ways, present generations foreclose the options of future generations, which he describes as a form of “environmental domination” (Scholtes, 2010, p. 290).

In response to arguments like Scholtes’, the point is sometimes made that by *not* taking environment-affecting actions in the present, we are *also* foreclosing options for future generations (e.g. Beckerman, 1999). For example, we can imagine that if our ancestors had never accessed the abundant energy source of fossil fuels for fear of producing climate change, we might never have benefited from the countless capability-affirming technologies of industrialised societies today. On balance, many people would say that some (non-catastrophic) climate change is ‘worth it’ for the capabilities many individuals enjoy access to today. Perhaps similar can be said about the environment-affecting actions taken today in the service of global food provision? For instance, if making diets sustainable threatened future generations’ access to affordable food, future generations might prefer that we kept food systems as they are.

However, while the potential trade-offs of promoting more sustainable diets should not be ignored (I explore some of them in depth in chapters 3-5), broadly speaking I think it is prudent to err towards Scholte’s position. For one thing, the high degree of substitutability supported by Sen implies a belief that we can (or in the future will be able to) *understand* all the instrumental value humans gain from the incredible complexity of the natural environment and then *recreate* it. This strikes me as overconfident (and perhaps even hubristic), especially given the empirical fact that, despite the optimistic talk of ‘environmental decoupling’ from some economists, human economies remain deeply reliant on extracting resources from the natural environment (Jackson, 2011; Raworth, 2017).

Therefore, as a general rule states have duties to preserve the natural environment roughly in its current state, in order to avoid accidentally (and irreversibly) undermining future generations’ abilities to lead flourishing lives. It is worth noting, however, that this rule is dependent on the degree of environmental substitutability present generations can reasonably expect will be accessible to future generations. For instance, if tomorrow an affordable artificial alternative to natural pollinators was invented that performed the same function as bees and other pollinating insects without any negative impact on the production of crops and the overall health of wider ecosystems, the duty to protect and maintain natural pollinators might fall away.

5. States’ responses to uncertainty

States do not have a perfect understanding of the causal relationships that exist between agents’ actions, the effects of those actions on the environment, and the effects of the environment on individuals’ capabilities. In this section, I first discuss how states should act to reduce this uncertainty, then how they should manage the uncertainty that is inevitably left over, and what this means for state duties regarding unsustainable diets.

5a) States should act to reduce uncertainty

The point that states should limit uncertainty as much as possible is an obvious one, but worth making because in contemporary discussions about the unsustainability of diets – and the food system that underpins them – it is common for agents to appeal to the inscrutability of supply chains in order to avoid liability for capability-undermining environmental effects. But the food system and its associated environmental effects are not mysterious; it is ultimately *just* a collection of causes and effects, many of which could be understood by properly resourced state actors. This might involve, for example, developing better tracking and monitoring systems for food supply chains, as well as promoting transparency and disclosure requirements for food producers and distributors. More fundamentally, the fact that there exists so much uncertainty about causal responsibility for environmental effects is at least partly due to the incredible complexity of the globalised food system. A strong argument can be made that capability-undermining situations in general – including but not limited to unsustainable environmental effects – are not just obscured by the complexity of the food system, but *enabled* by it (e.g. Moore and Patel, 2020). Appropriate state action might, therefore, have to involve a recognition that the advanced globalisation that has led to such opacity in supply chains needs to be examined and restructured in ways that prioritise transparency and accountability.

5b) The models of responsibility and uncertainty

It bears restating that the social connection model for ascribing responsibility is itself, in part, a response to the fact that there are epistemic limitations to understanding how agents' actions effect individuals' capabilities via the environment (see the start of section 3 of this chapter). This is important because it means that the state duties that flow from responsibilities revealed by the social connection model are, effectively, one way states can and should respond to uncertainty. We might think of the social connection model as a kind of 'responsibility backstop'; it allocates responsibility to those agents who – through their participation in some aspect of them – are implicated in unsustainable diets in *some way*, but not to the extent that they directly cause them.

The fact that the social connection model is partially a response to uncertainty means there is some overlap between the capability-undermining environmental effects for which the social connection model assigns responsibility, and the environmental effects for which the liability model *would* assign responsibility if only more was known about the causal relationships in question.²⁸ This is significant because, while the responsibilities revealed by the social connection model generate strong state duties, those revealed by the liability model will often generate more straightforward state duties,

²⁸ We might wonder: in conditions of full knowledge, would the social connection model be redundant? I am not sure, but I suspect not. As I said in section 3, the social connection model does not merely assign responsibility in the face of uncertainty regarding causal responsibility for effects; it also reveals the responsibility individuals have to not contribute to the *social structures* that enable unsustainable actions. One could argue that in conditions of full knowledge responsibility could be assigned accurately for even this, but this seems implausible to me. In any case, not much hangs on this since we are very far away from having conditions of full knowledge.

since they are usually to do with constraining agents from taking specific environment-affecting actions. Moreover, if liability for environmental effects is overlooked, specific agents that ought to be held to account might evade consequences.²⁹ Given this, states should act to the best of their abilities to push back the veil of epistemic opacity and uncover the agents who are *liable* for the unsustainable environmental effects associated with diets.

There is also an argument that the standard for establishing the ‘direct causation’ required for assigning liability should be lowered in the face of uncertainty. While I did not have space to discuss it above – and can only gesture towards it here – one of the main obstacles to establishing direct causation is when a harm is caused by the aggregate of many agents’ actions, leading to various forms of causal overdetermination. In the face of such problems, Holly Lawford-Smith has argued that individuals may be held responsible if their actions can be “reasonably expected” to lead to the undermining of individuals capabilities (Lawford-Smith, 2016, p. 76).³⁰ I find it plausible that the assignation of liability for capability-undermining environmental effects should be judged according to such a standard. States would obviously have to decide what constitutes a ‘reasonable expectation’ and in doing so they would run the risk of overstating liability and thus over-generating state duties. But I think this could be quite easily avoided; states could focus on the agents who have the most ‘difference making’ capacity, such as corporations, public health bodies, etc. And the alternative is to risk dramatically understating liability by allowing agents to ‘hide’ behind collective causation.

5c) A pragmatic response to uncertainty

While we live in an age of relative clarity due to modern environmental science, to a certain extent the interactions between human activities, human’s capabilities, and the natural environment remain opaque. As alluded to above, this opacity grows even darker when we attempt to predict the effects of our actions further into the future, since we cannot know the wants and needs of future generations, nor the extent to which natural capital is substitutable with other forms of capital. The fact that responsibility for structural injustice is sometimes extremely diffuse means that even the assignation of responsibility through social connection can be uncertain, meaning the ‘backstop’ function of the social connection model cannot entirely make up for uncertainty.

However, even in the absence of full knowledge about what unsustainabilities exist and which agents are responsible for them, an argument can be mounted for quite comprehensive state duties regarding unsustainable diets. We know that in a world where all responsibilities are discharged, most of the unsustainabilities of the food system would disappear. This is because all food (and thus almost

²⁹ Additionally, if we were to take a view on the feasibility of states’ implementing these duties, state duties grounded in liability might also be perceived by states’ citizens as more reasonable or fair, since actions that can be demonstrated to lead to the direct undermining of capabilities are intuitively wrong in a way that actions that contribute to structural injustice are sometimes not

³⁰ Lawford-Smith talks of ‘harm’ rather than capabilities, but the basic argument remains unchanged.

all the unsustainabilities associated with food) is brought about by humans, so for every unsustainability there is very likely some agent or some collection of agents who are morally responsible for it, either due to liability, social connection, or both. We *also* know what a world where all responsibilities were discharged would look like. It would look like a world where no – or far fewer – individual’s capabilities were undermined by the environmental effects associated with diets. Therefore, if states are unsure about what their duties regarding unsustainable diets are, they should simply *act to promote sustainable diets* in whatever way they can. In many cases, the moral risk of doing too much is, I think, less than doing too little (the three chapters following this one explore the moral risk of doing too much in much more detail).

So, states should do all they can to understand the specific responsibilities (both liability and social connection) agents in their jurisdiction have with regard to the unsustainabilities of the global food system, and enact specific measures to constrain those agents in order to promote sustainability. When uncertainty is such that no such responsibilities can be established, states should err on the side of promoting sustainable diets.

6. State duties and environmentally restorative diets

So far, this chapter has been focused on the state duties that flow from individuals’ duties to not become responsible for the undermining of other individuals’ capabilities. As I said in the introduction to this chapter, I think that focus is warranted, given the actual fact of unsustainable diets in the contemporary world and that negative duties are generally more accepted by political philosophers. However, Nussbaum also defends a *positive* duty to bolster and promote each other’s central capabilities. So, for the sake of completeness, I want to briefly discuss the positive duties individuals have with regard to one another according to Nussbaum’s capabilities approach, and the state duties regarding the environmental effects of diets that might flow from those positive duties.

In *Frontiers of Justice* Nussbaum rejects the notion, core to contract theorists from Hobbes through to Rawls, that human cooperation must be based in mutual advantage. Instead, she draws on the Aristotelian tradition that holds that humans are both social and ethical beings; we want to live with others and we have the capacity for ethical reasoning (Nussbaum, 2007, p. 273). When these characteristics of humans are combined with the fact that humans also have certain fundamental needs, she argues the result is that: “a central part of our own good, each and every one of us... is to produce, and live in, a world that is morally decent, a world in which all human beings have what they need to live a life worthy of human dignity” (Nussbaum, 2007, p. 274). Given this, she argues all individuals have a duty to assist other individuals whose capabilities have not yet been secured. This is not a superogatory duty, but a minimum condition of justice: “Quite simply, our world is not a decent and minimally just world, unless we have secured the ten capabilities, up to an appropriate threshold level, to all the world’s people” (Nussbaum, 2007, p. 281). For the same reasons as discussed in section 1, she takes it that this individual duty to provide assistance will often be best discharged through

institutional structures, even providing some general principles that ought to inform state duties. For example, according to Nussbaum, affluent states have a duty to give away a significant proportion of their GDP to states that do not have sufficient resources to ensure their citizens' central capabilities are met (Nussbaum, 2007, pp. 316–317).

It seems plausible to me that states could, at least partially, discharge their positive duties through the promotion of what I called earlier in the thesis 'restorative' diets. To see what I mean, recall that the environmental effects associated with diets may be unsustainable, sustainable, or restorative. Respectively, these descriptors indicate environmental effects that undermine capabilities, have a neutral effect on capabilities, or *bolster* capabilities. In theory, states could, I think, deliver aid via the promotion of restorative diets. For example, imagine Indian citizens eat bananas that are grown using conventional methods on plantations in Sri Lanka. The Indian state might fund a programme of 'regenerative agriculture' in Sri Lanka, an agricultural practice that is costlier to implement and run than conventional practices, but is supposedly better across various environmental metrics, especially with regard to the local environment. These improvements would plausibly bolster some of Sri Lankan citizens' capabilities, for instance by reducing the incidence of asthma due to improved air quality near crops or improving individuals' access to the "world of nature" (Nussbaum, 2000, p. 157). Thus India is not only acting in accordance with its negative duties, but is also working towards fulfilling its *positive duties* via the promotion of restorative diets.

7. Conclusion

At the outset of this chapter, I posed the question: should states promote sustainable diets? My argument has been not only that they should, but that they have a *duty* to. I began by explaining that, according to Nussbaum, states are not the sort of entities that can bear duties; rather, the duties of states flow from the duties of the agents under its jurisdiction. To reveal the duties those agents have, I drew on the notion of responsibility; agents have a duty to not become responsible for undermining individuals' central capabilities via the environment. Drawing on Iris Marion Young's models of responsibility, I described two ways that agents can become responsible for actions that are associated with unsustainable aspects of the global food system: agents can be *liable* for environment-affecting actions, or they can be *socially connected* to structurally unjust environmental actions or effects (Young, 2011). I argued that the individual duties implied by both these models will very often imply *state* duties, since – broadly speaking, and for various reasons – they are not the sort of duties that can be discharged by individuals.

I then explored *how the* state duty to constrain the capability-undermining aspects of diets might manifest. I began by discussing how the duty might vary depending on whether the individuals whose capabilities are undermined are compatriots, outsiders, or future generations. I allowed for the possibility that states have a duty to prioritise their own citizens, but only in cases of 'tragic conflict', which states are obliged to actively avoid. I then set out some general principles for how states ought

to act on their duty in the face of uncertainty. I argued that states should take active measures to decrease the uncertainty they face, and that they should, potentially, also allow for the assignation of responsibility in cases where there is ‘reasonable expectation’ that agents have caused a capability-undermining environmental effect, which would have the effect of holding more powerful agents to account for their unsustainable actions. I also argued that in the face of uncertainty states should promote a vision of a sustainable diet like those I described in chapter 1. In the final section, for the sake of completeness, I briefly observed that states can plausibly also fulfil some of their positive duties to the citizens of other states by the promotion of restorative diets.

So, states have a duty to promote sustainable diets. That duty is founded in a concern for the central capabilities of individuals – which represent the minimal requirements for living a life worthy of human dignity – so it is a strong, demanding duty. However, it is not a perfect duty; it ought not be carried out unconditionally to the detriment of other important values and duties. Rather, states must balance the duty to promote sustainable diets against other important ethical considerations. Often, the promotion of sustainable diets will be consistent with the fulfilment of individuals’ central capabilities in other domains. Sometimes though, it will conflict and states must determine what – or whose – central capabilities should be prioritised. The preceding three chapters are concerned with this matter. In the next chapter, I explore how the promotion of sustainable diets might interact with state duties to promote food security. Then, in the following two chapters, I explore how the state duty to promote sustainable diets ought to be balanced against what I call ‘eating experiences’ and ‘dietary identities’.

Chapter 3. Sustainable diets and food security

In chapter 2, I argued that states have a strong duty to promote sustainable diets. I also noted, however, that this duty is not unconditional, since it must be balanced against other state duties. One such duty is the duty to ensure its citizens have access to sufficient quantities of nutritious food. Indeed, according to the argument presented in the last chapter, states also have the responsibility to ensure that the actions of their citizens do not hinder other countries' citizens' access to food. The purpose of this chapter, then, is to explore the possible tensions (and synergies) between the promotion of sustainable diets and feeding the world.

This topic deserves attention for two reasons. First, food is a basic human necessity and its provision is the primary purpose of the global food system. Therefore, regardless of how sustainable the food system becomes, if it cannot guarantee people's access to nutritious food, then this must be considered a failure of state policy. Second, the supposed tension between sustainability and 'feeding the world' is a perennial concern in public, policy, and academic discourses. For instance, in 1971 the then US Secretary of Agriculture Earl Butz famously said: "Before we go back to organic agriculture in this country, somebody must decide which 50 million Americans we are going to let starve or go hungry" (Reganold, 2016). Butz, with his pro-industrial farming mantra of 'go big or get out', was no neutral commentator. As we will see though, the sentiment – that more sustainable food systems come at the cost of reduced agricultural productivity and, therefore, hunger – remains prominent today.

My basic argument in this chapter is that there is no inherent 'tragic conflict' between the promotion of sustainable diets and ensuring that people have access to sufficient, nutritious food. Put simply, this is because making diets sustainable would almost certainly not lead to reduced supply of food. In fact, when the threat of continued unsustainability on food production itself is taken into account, a strong argument can be made that unsustainable diets are *more likely* to cause hunger than sustainable ones. However, to finish the discussion there would be to overlook some of the most important aspects of the issue. It is well-established that hunger, starvation, and general lack of access to adequately nutritious food are not caused by insufficient supplies of food, but by maldistribution of the food that is available; put simply, hunger is a political issue. Therefore, the question is: how might the promotion of sustainable diets influence the social relations that currently determine individuals' freedom to access adequately nutritious food? While I cannot hope to give a definitive answer to that question in this chapter, I hope to sketch out some of the debates and come to some preliminary conclusions regarding them.

In section 1, I outline what the capabilities approach says about individuals' entitlement to 'adequate nutrition', the ways in which that entitlement is important for individual's flourishing, and what state duties follow as a result. In section 2, I explore the causes of hunger in the contemporary world, the objective being to properly contextualise the subsequent discussion. Then, in section 3, I explore the tensions and synergies between sustainable diets and the provision of adequately nutritious

diets. Readers will hopefully recall the ‘visions’ of sustainable diets I described in chapter 1. These are *Sustainable Development*, *Green Radicalism*, *Promethean Development*, and *Sustainability Maximising*. I dedicate a subsection to each, first describing how the vision proposes altering agricultural systems, then evaluating how these changes might affect individuals’ access to sufficient, nutritious food. I argue that while each can, in principle, feed the world, they face different challenges in doing so.

1. State duties regarding food security

Nussbaum specifies that the central capability of ‘bodily health’ requires the freedom to be “adequately nourished” (Nussbaum, 2000, p. 78). This is a central capability for two reasons. First, it is required for the achievement of other capabilities, enabling one to live a healthy life, to participate fully in society, and to pursue the goals and projects that one finds worthwhile. Second, a diet that provides adequate nourishment enables individuals to avoid the negative experiences and health consequences that derive from *inadequate* nourishment. I take it that individuals have access to adequate nourishment when they “have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO, 2006, p. 1).

States have a duty to ensure that the political communities they govern are organised in such a way that their own citizens are food secure, by which I mean they have adequate access to sufficiently nutritious food. (Some scholars and activists use the term ‘food security’ pejoratively, in contrast to terms like ‘food sovereignty’ or ‘right to food’. I engage with some of those perspectives as the chapter progresses, but for simplicity’s sake use the term ‘food security’, as just defined, throughout).

But, as discussed in the last chapter, states do not only have duties to their own citizens. Rather, they also have duties, both negative and positive, to respect the central capabilities of people living outside their jurisdiction, as well as the capabilities of future generations. So, just as states have a duty to ensure the diets of their citizens do not cause environmental effects that undermine the capabilities of individuals in other states, states also have a duty to ensure that the diets of their citizens are consistent with the food security of citizens in other jurisdictions. So, states ought to promote diets that provide food security to their citizens, while also not undermining the food security of other, nor the food security of future generations. Is the promotion of sustainable diets compatible with these obligations? In order to answer this question, I begin by exploring why it is that people go hungry in the first place.

2. Why do people go hungry?

The intuitive explanation for hunger, starvation, and general poor access to adequate nutrition is that these things are caused by supply side issues; by there simply not being enough nutritious food. With this in mind, we should begin by noting that ‘absolute’ shortages of food – where demand outstrips available supply – are, for now, a phenomenon of the past. Before the widespread industrialisation of the global economy, absolute food shortages were relatively common, caused by crop failures or when

populations outgrew available food sources. Indeed, up until the mid-18th Century, there was a widespread, and not unreasonable, belief that limits on agricultural productivity constituted natural limits on both population and economic growth (Malthus, 1798; Wrigley, 2006).³¹

However, this so-called ‘Malthusian trap’ was sidestepped; the last three hundred years have seen successive agricultural advancements, heralding huge increases in food production (Overton, 1996a; Gill and Conway, 1999; Broadberry *et al.*, 2015). This was achieved through substantially increased agricultural productivity, which allowed for the production of more food per unit of land while requiring less labour, as well as a huge expansion of the amount of land used for agriculture; half of the Earth’s temperate land is now dedicated to agriculture, compared to just 10% in 1700 (Ritchie and Roser, 2013). The result is that total global food production comfortably exceeds the amount required to feed the world's population; while current global population is around 8 billion people, it is estimated that there currently exists sufficient supply – albeit with some changes to consumption patterns, which I will discuss in due course – to feed up to 9.7 billion people adequately nutritious diets (Berners-Lee *et al.*, 2018).

However, despite the ample availability of food, today around 927 million people live in severe food insecurity, defined as running out of food for a day or more at a time, with another 1.4 billion people living in moderate food insecurity, defined as occasionally having to skip meals or having poor access to adequately nutritious food (FAO, 2021b, p. 18). How is it the case that such high levels of food insecurity prevail in a world that produces more than enough food to feed its entire population? For the beginning of the answer, we can look to Amartya Sen, who in the 1980s challenged the then consensus that famines were caused by declines in food availability. Rather, he argued, famines are “a matter of some people not having enough food to eat, and not a matter of there being not enough food to eat. While the latter can be a cause of the former, it is clearly one of many possible influences” (Sen, 1981, p. 343). According to Sen, famines are caused when individuals’ ‘endowments’ (their assets, ability to grow food, access to land, access to state assistance etc.) cannot be exchanged for adequate food. The obvious question, then, is what are the causes of this discrepancy?

The notion that the root cause of the problem lies on the supply side continues to exert intuitive appeal. The argument goes that people go hungry when the price of food is unaffordable, and that therefore the problem of hunger should be solved by increasing production of food, since doing so increases supply, which in turn decreases prices. Generally speaking, it is this ‘productivist’ solution to food insecurity that is supported by mainstream development organisations, transnational corporations, and numerous scholars working in the agrifood sector (Constance and Moseley, 2020, p. 65). The productivist solution has some merit – both in the abstract and in actuality – in that it is broadly true

³¹ In his discussion of Adam Smith grappling with the problem of agricultural productivity, economist Tony Wrigley summarises the problem well: “Though it might be true that with each mouth there came a pair of hands, no comfort could be drawn from this trite observation, since the hands of the son could not be expected to produce as much as the hands of the father” (Wrigley, 2006, p. 436).

that the cheaper food is, the more people can afford it, and there is *sometimes* a real-world link between the amount of food produced and its price. However, it is a surprising fact that the real-world link is so tenuous that levels of production are arguably not even the *main* determiner of food prices. There are various reasons for this, but perhaps the most dramatic is that, since food is understood as (just another) commodity tradeable on the global market, it is subject to speculation. As a result, the two most recent spikes in global food prices (prior to the coronavirus pandemic and the war in Ukraine) in 2008 and 2010 correlated not with any drop in food production – which in both years was at its highest ever level – nor with an increase in demand from prospective eaters, but with, respectively, the collapse of the US housing market and with fears about global inflation caused by central banks’ quantitative easing. In both cases, investors bought up the relatively ‘safe’ food commodities, and it was this that caused prices to spike (Russell, 2022, pp. 50–63).

More fundamentally, even if we imagine a market free of ‘distortions’ like those caused by speculation, there is – of course – no ‘natural law’ that means that increased agricultural production will reduce prices on food goods *at all*, let alone to the extent required to make up for the variation in purchasing power between people in the global economy. For one thing, increased production often enables more of *certain types* of foods to be produced, which are not necessarily available by those most in need. For instance, soy beans are a nutritious food, so one might think that increasing their production might lead to improved food security, by decreasing prices for its (disproportionately poor) eaters. Yet the vast majority of soy produced is used for animal feed, so increases in its production are most likely to lead to decreased prices of animal products, consumption of which is dominated by relatively affluent individuals (Ritchie and Roser, 2021). (Of course, the increased availability of animal products might allow some individuals who previously could not afford to consume them to do so. However, demand for meat is quite ‘elastic’, meaning that when production of livestock products increases, it is disproportionately individuals who already food secure who increase their consumption of meat). In another example, it is increasingly profitable to use agricultural production in ways other than food production, regardless of the human need for lower prices. For instance, an increasing proportion of agricultural land is used to grow biofuel crops, displacing food crops in order to decarbonise the consumption patterns of, primarily, the globally affluent (e.g. Tenenbaum, 2008).

None of this is to deny the underlying logic of the productivist position; all other things being equal, increased supply of food *would* lead to better access to food (and decreased supply will lead to worse access). But in reality, total supply of food is just one, surprisingly weak, determinant of food insecurity. The true determinants of food insecurity are the political and economic factors that shape *who has control over food*. This is because, as with all other sectors of the contemporary global economy, the food system functions to serve the economic or political interests of particular groups of people, not the interests of people in general. In some situations, keeping people fed is deemed important; people must be fed in order to provide labour and even the most authoritarian regimes can often be maintained through the social contract of maintaining sufficient food supplies (so-called

‘democracy of bread’). But ultimately, people go hungry today because sating that hunger is not politically or economically expedient. David Reiff said the following in relation to the 2008 food crisis, but it holds true for food insecurity more broadly:

[I]t is the result of such things as the current relations between haves and have-nots, on how world markets work, on what technologies we use (and the moral and political assumptions behind those technologies) – when all is said and done, about what kind of world we want to live in, about the world order that now exists and the world order that might one day exist. (Reiff, 2016, p. 3)

Once we have acknowledged that the underlying reasons for hunger are primarily political, what is left to be said about the tensions between promoting sustainable diets and providing access to sufficiently nutritious diets? First, there *is* still a need to demonstrate that making diets sustainable will not lead to absolute scarcity of food. Second, if making diets sustainable would lead to *any* reduction in total food supply this is surely morally relevant; all things being equal less supply will still lead to higher prices and thus worse food availability. Third, and hardest, is a discussion about how the proposed modifications of the different agricultural systems vying for future implementation might affect the social relations gestured towards in the last paragraph. Perhaps the key question in this discussion is: are the various technologies and practices proposed by each vision politically and/or morally neutral, or do they carry with them implications for individuals’ food security? To evaluate this requires engaging with highly contested areas of agrifood scholarship. I cannot hope to resolve such debates fully in this chapter, but I can sketch out what is at stake along with some tentative conclusions.

3. Balancing food security and sustainable diets

In the following four subsections, I discuss how the visions of sustainable diets that I set out earlier in the thesis interact with global food security. In each subsection, I first briefly summarise the given vision’s practical proposals for making production more sustainable (this involves answering two questions: What system of production ought to be promoted? And what foodstuffs should that system produce?). I then discuss the interplay between each vision and the complex domain of food security. In doing so, my aim is to uncover any potential conflicts and synergies that might exist between the two.

3a) Sustainable development

By the mid-20th Century, industrial agricultural techniques – the use of synthetic fertiliser, advanced irrigation, and large scale mechanisation – had been widely adopted in North America and Europe. This led to substantially increased crop yields, especially of staple crops like wheat, maize, and rice. However, these techniques could not be straightforwardly adopted elsewhere in the world because to be utilised effectively they required specialised technical capacity in order to take into account regional

variations in environmental conditions (like soil types, water availability etc.).³² This began to change in the period between 1950 and the late 1980s, now referred to as the ‘Green Revolution’, which saw a series of breakthroughs in agricultural research. One of the most impactful developments was the invention of high yielding cultivars of staple grains that could be deployed in a relatively wide variety of contexts, thus making their distribution and adoption quite straightforward. The dissemination of these cultivars, alongside other Green Revolution techniques, led to increases in agricultural output of some crops, primarily in South Asia and Latin America,

As I described in chapter 1, the *Sustainable Development* vision encapsulates the mainstream, reformist approach to the global food system. Central to this approach is the notion of ‘sustainable intensification’, a collection of technologies and practices to be deployed with the explicit aim to build on and improve – rather than replace – the industrial technologies and practices made dominant by the Green Revolution (Royal Society of London, 2009; Thompson, 2020, p. 52). Broadly put, sustainable intensification can be understood as aiming to increase the efficiency of agricultural production while decreasing – or at least not increasing – environmental impact (Mahon *et al.*, 2017). Practically speaking this means reducing the amount of nitrogen, phosphorous, water, and pesticide required to produce any given unit of food, and closing the ‘yield gap’, the gap between the actual yield and the potential yield of any given piece of land. Proposed methods to achieve this include the use of genetically modified crops, precision application of agricultural inputs, and more efficient livestock management (Tilman *et al.*, 2002; Garnett *et al.*, 2013).

How might the implementation of sustainable intensification affect global food security? Given the parallels between the Green Revolution and *Sustainable Development*, it is valuable to examine how the changes to the food system during the Green Revolution era impacted food security. During the 1960s, concerns arose about the ability of food supply to meet global demand due to the accelerating global population (Ehrlich and Ehrlich, 1968). The increases in agricultural yields brought by the Green Revolution are therefore credited by some to have prevented tens or even hundreds of millions of deaths (e.g. von der Goltz *et al.*, 2020). However, this narrative is subject to critical scrutiny by some scholars who argue that the dissemination of Green Revolution technologies was part of a broader agenda to establish a global free trade regime, wherein food is grown according to comparative advantage and sold on the global market (Constance and Moseley, 2020, p. 65). Furthermore, Green Revolution techniques were capital-intensive, leading to the displacement of small farmers and the concentration of land ownership in the hands of a few large corporations. This leads scholars to question the positive impact of the Green Revolution, with some even arguing that if the progress towards food security made

³² To give an idea of the scale of this project, today in the US and Canada over three-hundred wheat cultivars are grown commercially, with none accounting for more than 6% of total acreage (Olmstead and Rhode, 2011).

by China is removed from the statistics, the Green Revolution actually led to *increased* levels of hunger (Patel, 2007).³³

The divergent assessments of the Green Revolution's impacts are mirrored in current debates about how sustainable intensification technologies are affecting food security. Critics argue that sustainable intensification technologies, like Green Revolution technologies before them, reinforce economic and political structures that systematically disadvantage the least advantaged (Constance and Moseley, 2020, p. 65). Defenders of sustainable intensification, meanwhile, argue that it is 'only' a collection of farming practices, and that these practices are compatible with *any* form of distribution (Garnett *et al.*, 2013; Godfray, 2015). The crux of the matter lies in whether a set of practices can be politically neutral in this manner, and opinions on this issue will undoubtedly reflect one's own political commitments. On balance though, I think proponents of sustainable intensification bear the responsibility of demonstrating how their proposed approach aligns with equitable food distribution in the contemporary world.

Another way *Sustainable Development* could pose a threat to global future food security is if it failed to live up to its sustainability promises, leading to environmental degradation that eventually undermines future food security. Increasing the efficiency of production systems has the potential to reduce environmental harm in principle, but a key question is whether *Sustainable Development* can effectively achieve this in practice and to the extent required. When considering this question, it is worth noting that of all the visions, *Sustainable Development* is the one closest to being realised in the actual world. (This is because it has support from powerful institutions and states, and because many of its techniques help make farming more profitable, since they increase yields, reduce the need for expensive inputs, and – compared to conventional farming at least – preserve the productivity of land). It therefore counts in favour of the proponents of *Sustainable Development* that, at least on some metrics, agricultural production is being decoupled from its environmental footprint. For example, since 1970 globally greenhouse gas emissions per unit of food produced have declined by about 40%, while numerous individual countries have reduced the environmental footprint of their agricultural production against other key metrics like water and nitrogen use (Bennetzen, Smith and Porter, 2016; OECD, 2019).

However, given that we are worried about leaving the environment in a state that future generations can continue to produce adequate food, we should note that improvements in efficiency are not the same as improvements in net sustainability. For instance, while the greenhouse gas emissions of food per unit have decreased, we have not observed a corresponding absolute reduction in emissions; on the contrary, total emissions from the global food system are currently at their highest levels ever (Tubiello *et al.*, 2022). Partly, this is due to an increase in global population. But it is also due to a

³³ It is argued that China increased its production capacity through land reform, rather than the adoption of Green Revolution techniques.

change in consumption habits, towards diets that contain more meat and dairy products. It is very possible that the increases in efficiency the global food system has seen over the last few decades have enabled this increase, and perhaps even encouraged it. (It is a well-documented phenomenon in environmental economics that increasing the efficiency of production of a good often leads to *increased* consumption of it – and thus higher environmental impacts – since the fact that the good can be produced – and thus sold – more cheaply stokes demand for it).³⁴

With the last point in mind, note that of those who I understand as belonging to the *Sustainable Development* camp, there is disagreement about whether *what* is produced must be changed for the sake of sustainability, with the main disagreement relating to the production of meat and dairy. A vocal minority – most prominently the EAT forum, a group of scientists who proposed the controversial ‘Planetary Health Diet’ – argue that production, and thus also consumption, of particularly of meat and dairy must be substantially limited. To illustrate the scale of the proposed reduction, they say that meat consumption should be limited to around five-hundred grams per week, equating to less than a fifth of the average North American’s consumption and less than half of the global average (EAT Forum, 2019b). Conversely, the majority of *Sustainable Development*’s proponents hold that improvements to sustainability should be made almost entirely through changes to livestock production, like better farm management, more efficient animals, and new technologies like methane suppressants in feed (e.g. Budolfson, 2018; Kanter and Moore, 2020).³⁵ Given the potential for environmental ‘rebound’ effects, it seems to me that sustainable intensification can only plausibly reduce net unsustainability if a path more like the one described by the EAT forum is followed.

There is a final, more fundamental reason why *Sustainable Development* may not fulfil its environmental promises. Some critics argue that the sustainable intensification is merely the latest instantiation of industrial agriculture developing in order to ‘sustain the unsustainable’ (Buttel, 2006). They argue that industrial agriculture has an inherently negative relationship with the environment, from “which it extracts wealth from and externalises costs to in the form of soil, water, air, and species degradation” (Constance and Moseley, 2020, p. 64). They acknowledge that industrial agricultural production can be reproduced for considerable periods of time, but argue that this is only made possible by distancing consumers from production’s effects, (ultimately inadequate) technological and scientific fixes, and lack of concern for the environment (Buttel, 2006, p. 28). In the end, so their argument goes, sustainable intensification therefore merely slows the environmental degradation associated with the

³⁴ The ‘Jevons effect’ is a principle of environmental economics. During the industrial revolution, William Jevons observed that increasing the efficiency of steam engines increased the demand for coal to power them. Also known as the ‘rebound effect’, it can be observed in many domains.

³⁵ The difference between the recommendations is explained by a disagreement about the *feasibility* of reducing meat and dairy consumption. The EAT Forum advocates changing consumer behaviour, for example by providing education, changing consumer-facing taxes and subsidies, or changing nutritional guidelines (EAT Forum, 2019a). Conversely, Budolfson rules out the notion that consumers could be persuaded to consume less animal-derived foodstuffs, dismissing it as a “highly counterfactual ideal scenario” (Budolfson, 2018, p. 93).

global food system; as an inherently *industrial* production system it is fundamentally unable to alleviate it.

Again, whether or not this criticism lands will depend on one's political commitments, as well as the level of confidence one has regarding the resilience of environmental systems and the ingenuity of human innovation. However, it is worth making an observation. From Malthus through to the Club of Rome, we have been delivered various high profile but ultimately apocryphal predictions about human development being on the cusp of butting up against environmentally determined limits. Perhaps due to this, questioning the notion that industrialised economies can continue to expand indefinitely has become an almost fringe position. However, when viewed in historical context, it is clear that the acceleration of food production that began in the early 20th Century (a development co-constitutive of the so-called 'Great Acceleration') is an anomaly in human development. Never before during humanity's development have we witnessed such a rapid transformation of agricultural practices, nor any impact on the environment of a comparable scale. Of course, the fact that the period in which we live is anomalous does not necessarily mean that current agricultural practices cannot be maintained and their associated environmental harms mitigated. However, recognising the unprecedented nature of our current situation should perhaps prompt us to be more circumspect about putting our faith in roughly the same industrial system that led us to this point.

3b) Green radicalism

Where *Sustainable Development* is committed to sustainable intensification, the vision I have called *Green Radicalism* is committed to *agroecology*. Strictly defined, agroecology is the study of the relationships between living organisations and their physical environments, applied to the subject of agriculture, but it has taken on a more expansive meaning, encompassing both agricultural practice and theory. It emerged in the 1960s, out of concern for the environmental and social impacts associated with Green Revolution techniques (Wezel *et al.*, 2009, p. 506). Originally, its primary focus was on agricultural practices at the plot or farm level, but by the end of the 20th Century its scope had been expanded to encompass not just local practices, but the ecology of the entire food system (Francis *et al.*, 2003).

Regarding the on-the-ground practices of agroecology, a useful distinction can be drawn between agroecology and 'mere' organic farming. Organic farming, at least its mainstream manifestations, substitutes synthetic inputs for inputs that are nominally more 'natural', but otherwise follows the industrial model of farming, prioritising yields and profits and externalising various environmental costs.³⁶ Conversely, the proponents of agroecology argue that the industrial farming techniques can be substituted with "knowledge-intensive management" that mimics natural ecosystems,

³⁶ Whether organic-certified inputs are truly derived from non-synthetic sources is often a point of contention. For instance, many European 'organic' farms use manure obtained from non-organic cattle (Tuomisto *et al.*, 2012).

thereby bringing about “tightly coupled cycles of energy, water, and nutrients” (Carlisle *et al.*, 2019, p. 1). Practically speaking this means using practices that promote soil fertility like intercropping and crop rotations, using very low amounts of external inputs (instead relying on the input of skilled human labour), using biological pest management systems, and blurring the boundary between agriculturally productive and natural areas, for instance by allowing some non-food animals to coexist with agriculturally managed plants (Wezel *et al.*, 2009, p. 511).

Another thing that makes agroecology, and thus *Green Radicalism*, distinctive is its emphasis on the *entire global food system*, including its “economic and political power structures” (Gliessman, 2018, p. 599). Therefore, advocates for food sovereignty argue for a radical shift towards empowering smallholder farmers, the regionalisation of agrifood systems, and for land reform to counter the de facto enclosure that has occurred as small farms have been consolidated since the mid-twentieth century, in part due to the adoption of capital-intensive Green Revolution technologies (Patel, 2007, pp. 119–130; McMichael, 2014). Proponents of *Green Radicalism* are also concerned with existing inequalities of consumption. According to political ecologists Brand and Wissen, there exists a “transnational consumer class” which maintains consumption patterns that “imply a disproportionate claim on global resources, sinks and labour power” (Brand and Wissen, 2013, pp. 698, 687). This can be observed in patterns of dietary consumption, where the globally affluent both have access to nutritious food where other do not, and disproportionately eat the most unsustainable foodstuffs (Hirth, Bürstmayr and Strüver, 2021). Therefore, *Green Radicalism* has a strong focus on changing production – and thus consumption – to ensure more equitable use of the environmental resources required to produce food. Practically speaking, this would mean dramatically less production of animal products and other foodstuffs that cause environmental impacts disproportionate to amount of nutrition they provide.

Agroecological production systems are often understood to reduce yields, and therefore as having the potential to exacerbate hunger (Charles, Godfray and Garnett, 2014; Budolfson, 2018). Of course, as I have argued in this chapter, since the mid-20th century inadequate access to food has not been caused by absolute lack of food, but by maldistribution. Nonetheless, it is true that an absolute reduction in food availability could lead to increased hunger, either due to price increases or – in the most extreme case – due to an absolute deficit of food, where there physically is not enough food produced to feed everyone. Therefore, the yield question is worth addressing.

It is actually an open question whether the sorts of production systems advocated by *Green Radicalism* do decrease yields. The only major study I could find investigating the productivity of agroecological production systems recorded only a slight reduction in yield compared to conventional systems, despite the fact that agroecological techniques have received very little attention from researchers and so are arguably less advanced (Kremen and Miles, 2012).³⁷ Nonetheless, it seems to me

³⁷ There are numerous studies comparing the productivity of conventional systems against *organic* systems, which broadly find similar results (Seufert, Ramankutty and Foley, 2012; Tuomisto *et al.*, 2012).

that whether *Green Radicalism* could achieve comparable yields to conventional agriculture would be contingent on at least three innovations. First, agroecology tends to be more labour intensive, potentially affecting profitability. Therefore, its adoption would probably require support, potentially from the state. (Of course, globally agriculture is already one of the most subsidised sectors, so this would not necessarily be a radical step change from the status quo). Second, the successful implementation of agroecology would be complex and regionally variable, so would require particularly skilled management and labour. It is therefore likely a programme of education would be required to upskill workers. Third, substantial investment in researching agroecological techniques would be required. Even with all these innovations, it is probably safest to assume that yields might not reach the levels of contemporary agriculture, nor those of *Sustainable Development* or – as we will see – *Promethean Development*.

However, proponents of *Green Radicalism* can concede that their proposed production system would decrease yields, even to a substantial degree, yet still maintain that their vision can feed the world. There are two parts to their argument. First, the case for agroecology is bolstered when we consider the need to continue producing adequate food into the future, since the environmental impact of conventional production techniques (and potentially those of *Sustainable Development*, as we saw in the last subsection) threaten to degrade the environment to such an extent that future food production is threatened. The studies that exist measuring the environmental impact of agroecology systems seem to show them to be more sustainable than conventional agricultural techniques, a fact that makes sense given that the primary goals of agroecology are to reduce external inputs and better align agriculture with natural ecosystems (e.g. Albanito *et al.*, 2022). To this point, some argue that the lower yields of non-industrial agriculture actually equate to higher levels of *net* environmental impact, since they mean less land can be spared and used for various types of environmental restoration (Budolfson, 2018). Whether or not such an objection holds up depends partly on how environmentally impactful any given agricultural system is compared to agroecological systems, and partly on whether the land freed up by the higher yields is, in fact, spared and not used for some other purpose. (On the latter point, food crops are being increasingly being displaced by biofuel crops). Regardless of how these intersecting considerations unfold, the worry about low yields leading to increased environmental harm is mitigated by the second part of *Green Radicalism*'s argument, which is that the production of livestock products should be substantially reduced, with the nutrition they previously supplied replaced with more sustainable alternatives. It is well established that shifting production in this way would certainly more than make up for any reduced yields (e.g. Harwatt *et al.*, 2017; Springmann, Clark, *et al.*, 2018).

However, such a dramatic shift in the sorts of food produced brings with it new challenges to ensuring access to adequately nutritious food. Chief amongst these is that currently the consumption of foods like meat and dairy is an essential part of many people's diets. Of course, at least for people with normal dietary requirements, a healthy diet does not *need* to contain animal products. However, if individuals do not have access to a wide variety of food, then the nutrient-rich nature of animal-derived

foodstuffs can significantly improve the quality of one's diet. Since a person's access to a varied diet is largely determined by their income, as things currently stand some have argued that it is the poorest people whose diets would be undermined by a global shift away from meat and dairy production (Houzer and Scoones, 2021; Nagarajan, 2021).

Green Radicalism can partly answer the above worry by pointing out that it is disingenuous to claim that the intensive livestock production that dominates contemporary industrialised agriculture is required for the dietary variety of the global poor, since the majority of meat and dairy production caters for the excessive consumption of the globally affluent. It is also worth noting that the extensive livestock grazing undertaken by subsistence farmers and pastoralists is potentially compatible with the principles of agroecological production. At the very least, eliminating this form of livestock farming would not be a priority for any state committed to promoting agroecological production systems. Nonetheless, it does seem possible that – in the context of contemporary social and economic norms – blunt and immediate measures to drastically reduce meat and dairy production might result in poor nutritional outcomes for at least some people. *Green Radicalism*, like the other visions, would therefore have to be accompanied by a political project that promoted a system that justly distributes food according to nutritional need. In such a context, individuals would have access to diets of sufficient variety and quality that the need for high-density proteins like meat and dairy would be greatly diminished.

3c) Promethean development

The vision of *Promethean Development* is a revolutionary one that would see traditional soil-based agriculture largely phased out, with food production instead taking place in the controlled environments of factories and laboratories. It envisages the mass deployment of existing technologies, as well as developing new ones, in order to decouple food production from environmental impact. In practice, where *Green Radicalism* substitutes practical human knowledge for the fossil fuel inputs of conventional agriculture, *Promethean Development* substitutes technology, primarily powered by (renewable) electricity. To illustrate, a Finnish company has recently developed a technique – powered by electricity – that splits water into hydrogen, which is then fed to bacteria, producing nutritious organic matter much more efficiently than plants do so through photosynthesis (Le Page, 2020). This organic matter – made up of protein, carbohydrate, and fat – has a neutral flavour so can be used as the base of numerous foodstuffs and, even if the electricity required for the process was generated using land-based solar panels, this food still requires a tenth of the land than farmed soy beans. Other examples include using hydroponics to build vertical horticulture farms; using cellular agriculture to grow animal flesh without rearing the animal itself; and advanced manufacturing techniques, like 3D printing, to create facsimiles of foodstuffs that might otherwise cause substantial environmental harm (Zimmeroff, 2021). Proponents of *Promethean Development* contend that these technologies, along with similar innovations, have the potential to produce all existing food varieties, and even pave the way for the

creation of novel food options. Moreover, these advancements would ensure an abundance of food, making it universally accessible to all.

Of the four visions, *Promethean Development* faces the greatest technical obstacles to implementation. Some of the required technologies have already been proven, such as various plant-based meat facsimiles. Many others, however, have been shown to work in principle but have yet to be successfully scaled up (such as so-called ‘in vitro’ meat), while still others are currently characterised more by the promises attached to them than any concrete achievements. On this latter point, since most innovation is occurring in the private sector, many companies exaggerate the use-value of their promised technology as a strategy to attract investments, making it challenging to discern actual advancements from hype. On balance though, it seems possible that, from a purely technical perspective – and given sufficient time, investment, and regulatory support – many of the production systems envisaged by the *Promethean Development* could be realised.

Whether the technologies can deliver the promised reductions in environmental impact is a different question. Like with the *Sustainable Development* vision, this is relevant to the question of feeding the world because environmental stability is required to ensure reliable food supplies into the future.³⁸ At this point it is hard to say for sure what the environmental impacts of a transition to *Promethean Development* production systems would be, since so few of the technologies have been implemented at scale. Building and maintaining the required production facilities would require some amount of raw materials. Moreover, the vision would require substantial development of electricity infrastructure, since the technologies associated with it tend to require large amounts of energy. If, however, these obstacles can be avoided then studies have shown that the production processes associated with *Promethean Development* have the potential for substantially lower environmental impacts than conventionally produced foods, especially with regard to land use, water use, and GHG emissions (Smetana *et al.*, 2015; Alexander *et al.*, 2017).

A core premise of *Promethean Development* is not just that the proposed production systems have the technical capacity to substantially reduce environmental harm, but that they could do so while increasing the availability of food. There are two main reasons for this. People who I understand as advocating for this vision argue that increased abundance will mean many foodstuffs will become “far cheaper” once the required technologies have been scaled, and that – even if prices do not fall below the cheapest sources of nutrition – *Promethean Development* technologies allows states to gain control over food production; food production that has traditionally been contingent on land availability and appropriate climatic conditions (Bastani, 2019, p. 175; Monbiot, 2022, p. 191).

³⁸ In some ways, the production systems associated with *Promethean Development* may be more resilient to environmental change than the other visions. For instance, removing agriculture’s reliance on soil means that soil degradation would not undermine our capacity to produce sufficient food. In other ways though, it is more vulnerable. For instance, *Promethean Development* is highly reliant on a consistent supply of electricity, which can be disrupted by, for instance, extreme weather events worsened by climate change.

Of course, even if the technology allows it, the idea that the potential for abundance for all would lead to actual abundance for all is naïve. The various proposed technologies are very specialised, require specific infrastructure, have expensive upfront costs, and require skilled people to operate. Given this, it seems likely that the number of actors with control over food production would be relatively small and - at least in our contemporary economy – they would have little to no economic incentive to produce an abundant supply of food. Indeed, they might intentionally restrict supply in order to ensure that prices stay high. As I argued in section 2, the purpose of much contemporary food production is to make profits or to maintain certain economic or political relations, not to feed people. Therefore, while a *Promethean Development* vision has the capacity to create abundance, this does not negate the need for redistributive efforts.

It does, however, seem plausible that *Promethean Development* technologies might make state action to promote access to adequate nutrition easier, by enabling more states to have jurisdiction over the production of food. Today, it is common for states to intervene domestically in order to ensure food supplies. For instance, in 2022 and 2023 India banned wheat exports to keep prices affordable for its citizens. However, this type of intervention is not available to all states, since it requires them to have a productive agricultural sector. The production systems associated with *Promethean Development* – much less sensitive to geography and prevailing climatic conditions – could enable all states to cultivate reliable domestic food production. Moreover, the notion of comparative advantage – a major rationale for the liberalisation and globalisation of the global food system – becomes much less persuasive when geography is no longer a factor in the ability of countries to produce food, potentially undermining arguments against domestic food production that appeal to market efficiency.³⁹ Of course, the vision would still not guarantee autonomous domestic production, but *Promethean Development* does seem to open up the possibility in a way that other visions do not.

Overall, the technologies advocated and imagined by advocates of *Promethean Development* have the potential to create even more abundance than exists in our contemporary food system. Like with *Sustainable Development* though, whether the technical capacity to produce sufficient food *actually* improves people's access to it depends on how the technologies are deployed and how food is distributed. One distinctive feature of *Promethean Development* however, is that this vision might allow states in areas of the world less suitable for growing food to have more autonomy over their food production.

3d) Sustainability maximising

I introduced the *Sustainability Maximising* vision – the 'Huel-only' diet – as a thought experiment (it will become particularly useful in the chapter following this one). However, readers may recall that I

³⁹ Indeed, as far as comparative advantage does apply to *Promethean Development* production systems, it would appear to benefit many poorer equatorial countries, since these have huge potential for cheap solar power (Monbiot, 2022, p. 191).

stipulated that the vision would maximise sustainability *while still providing sufficient food* for the human population. Therefore, any discussion about whether individuals would have access to adequate nutrition if this vision were implemented is somewhat redundant. (Such a discussion would also not be particularly interesting; given that the vision is not representative of any actually existing proposed changes to the food system). For that reason, in this subsection I limit myself to two brief discussions about how maximising sustainability might interact with food security.

Recall that Huel is a powder that, when mixed with water, yields a milkshake-like drink. Its manufacturers claim that it contains all the nutrition required to live a nourished and healthy life, but for the vast majority of people the idea of Huel being their sole source of nourishment is an unattractive prospect. Perhaps, then, the argument could be made that a Huel-only diet undermines access to adequate nutrition because a diet should consist of foodstuffs that are understood by the eaters as a “feasible source” of nutrition (Sen, 1999, p. 25). For example, we might imagine a society wedded to eating staple dishes made with rice arguing that Huel does not even meet the definition of ‘food’. However, the notion that the nutritious value of a foodstuff can be determined by mere opinion – however deeply held that opinion is – seems suspect to me. To illustrate, imagine that I was held prisoner and only given Huel to eat. In such a scenario, I think it would make sense to say I had been mistreated – perhaps even tortured – but not to say that I was *starved*; after all, Huel simply *can* provide adequate nutrition if only it is eaten. Of course, this is to say that whether or not a foodstuff is understood to be a feasible source of nutrition has no normative significance. For instance, some foodstuffs might meet cultural or aesthetic criteria that, in the minds of certain communities, qualify them as food where Huel fails. I discuss this possibility in later chapters, but here I will just say that if our concern is maximising sustainability then the provision of adequate nutrition cannot be used to justify the production of any food that is less sustainable than Huel (or whatever diet is evaluated to be maximally sustainable).

Next I discuss the fact that a potentially effective way to makes diets more sustainable is through populations *eating less food*. Perhaps surprisingly, reducing population-level calorie consumption is a common policy intervention built into models envisaging transitions to more sustainable diets (e.g. Bahadur Kc *et al.*, 2018; Berners-Lee *et al.*, 2018; EAT Forum, 2019b). For example, in a paper arguing that current food production is sufficient to feed 10 billion people, Berners-Lee *et al* argue that in North America and Eurasia, net “excess” consumption is 1209kcal over the ‘average dietary energy requirement’ (ADER) of the region (Berners-Lee *et al.*, 2018, p. 7). Since, according to Berners-Lee *et al*, the average dietary requirement in the region is 2509kcal, this represents ‘overconsumption’ of around 50%.⁴⁰ A maximally sustainable diet would, therefore, restrict total calories and in doing so limit the environmental impact associated with diets to the minimum that is

⁴⁰ Their discussion takes into account various different aspect of nutrition – different types of protein, vitamins, etc. – but for simplicity’s sake I limit this discussion to kcal.

required for providing adequate nutrition. Put another way, *Sustainability Maximising* would restrict profligate nutrition.

The question is, what counts as profligate nutrition? It seems obvious that *some* consumption over regional ADER ought to be acceptable, even within the *Sustainability Maximising* vision. For instance, some people work physical jobs that require more energy. Conversely, certain hobbies (such as competitive eating, bodybuilding, or long-distance running?) could arguably be considered as luxury activities that ought to be relinquished when confronted with the normative demands of sustainability. However, when the researchers just mentioned talk about the ‘overconsumption’ of calories, they tend to be referring to the consumption of calories that lead to “unhealthy body mass and increasing obesity within a proportion of the population” (Berners-Lee *et al.*, 2018, p. 7). In other words, societies can become more sustainable by becoming thinner and by expending less energy. Reading between the lines, the researchers assume that such an approach is normatively acceptable; reducing total food consumption is, they argue, an example of a synergy between healthy diets and sustainable diets. (To put it in the language of the capabilities approach, they are arguing that individuals need not have the freedom to ‘overeat’ in order to live a flourishing life). Whilst I cannot do this subject justice here, the assumption that ‘overeating’ is never important for individuals’ basic wellbeing strikes me as flawed. Many so-called overweight people are happy and since our bodies are a fundamental part of our identities (at least for some people), the status of being ‘overweight’ is likely to at least partly constitutive of that happiness. They would therefore require more calories in order to access adequate nutrition than models like Berners-Less *et al* predict. Nonetheless, the broader point – that within a *Sustainability Maximising* vision states ought to limit environmentally profligate diets – does seem plausible to me. (The question of whether fully implementing the vision would be worth the cost is another question. Some people argue that some currently existing public health campaigns centred on bodyweight *already* amount to state sanctioned body shaming, leading to significant harm. If individuals’ body compositions were further associated with sustainability in the public’s perception, the situation could potentially worsen).

4. Conclusion

In this chapter, I have argued that there is no inevitable tension between the promotion of sustainable diets and food security. I began by arguing against ‘productivism’ as a compelling route towards reducing global hunger; in the contemporary world, hunger is caused by individuals’ inability to access food, rather than absolute shortages. Nonetheless, I noted, this is not to say that the promotion of sustainable diets would have no effect on global food security. I then evaluated how some of these potential effects might manifest in the four visions of sustainable diets I outlined in chapter 1.

The *Sustainable Development* vision, as the de facto ‘mainstream’ vision, is the most feasible to implement, however it is debatable whether its technical solutions can be separated from its current political context, which some argue undermine its compatibility with essential efforts to correct

systemic maldistribution. Moreover, the technical solutions aligned with it do not diverge significantly from the current development paradigm, which some argue is fundamentally unable to alleviate environmental harm enough that future food production is not jeopardised. The *Green Radicalism* vision has the capacity to provide adequate nutrition to all, but to do so would entail significant changes to populations' consumption. There are also concerns that implementing the vision without reforms to how food is distributed could lead to a worsening of the diets of the poorest people. *Promethean Development*, which proposes shifting away from traditional, earth-based agriculture to technology-reliant production, has radical but ambiguous potential. On one hand, it could be an emancipatory vision, allowing the democratisation of agriculture and introducing an era of food abundance. On the other, it could allow the means of food production to be seized by a powerful few who are unconcerned with the just distribution of food. It is also reliant on technologies which have not yet been proven to reduce environmental impacts at scale. In the introduction to this thesis I had already stipulated that whatever the food system supporting the *Sustainability Maximising* vision is, it would be able to assure adequate food security, so my final discussion focussed on how sustainability imposes limits on what constitutes adequate nutrition. I suggested that promoting a maximally sustainable diet would entail curbing profligate consumption of calories, although I left open exactly what that might mean.

Put simply, all of the visions' practical proposals for changes to food production *could be* compatible with feeding the world, if only those changes were also accompanied by the necessary political, social, and economic changes. (Of course, the visions also have the potential to co-exist and overlap with one another. Indeed, plausibly this is how the global food system will develop in the future, with the best technologies and practices combined in order to improve sustainability outcomes while also working towards global food security). So, this chapter has shown that the state promotion of sustainable diets does not fundamentally clash with states' duties to ensure food security. Next, I move on to discussing how the promotion of sustainable diets might affect individuals' access to adequate *eating experiences*.

Chapter 4. Sustainable diets and eating experiences

Think of the experience of biting into a slice of birthday cake amongst friends, or that of tucking into a well-spiced dal in a favourite curry house during a staff Christmas party. These are examples of *eating experiences*: the experiences elicited by the act of consuming foodstuffs via the mouth. In the context of this thesis, eating experiences are important because sustainability of the global food system cannot be achieved solely through reforms unnoticeable to eaters. Rather, in many cases – and especially for people currently following Western-style diets – the implementation of sustainable diets would require changes to the *composition* of diets; i.e. changes to the types or amounts of foodstuffs that individuals actually eat. The extent and form of these changes – and the corresponding change to eating experiences – would vary depending on which vision of sustainable diets is adopted. For instance, restricting access to foodstuffs means *less* of the eating experiences elicited by those foodstuffs, while food produced non-conventionally might elicit feelings of disgust in a way that conventionally produced food does not (think of the burger manufactured in a laboratory compared to one harvested from a cow). The aim of this chapter is to investigate the normative importance of eating experiences and assess whether – or to what extent – unsustainable diets can be justified in order to maintain access to certain eating experiences.

Readers may be familiar with the ‘appeal to eating experience’ type of argument against dietary change. (For instance: ‘I’m worried about my environmental impact, but I just love eating cheese!’) Traditionally, philosophers – usually working in the field of animal rights – have dismissed such appeals, arguing that eating experiences are, at most, *trivially* valuable. In this chapter I challenge this position, arguing that access to adequate eating experiences ought to be understood as basic to a minimally flourishing life. Put in the terms of the capabilities approach, I defend the capability of access to *adequate eating experiences*. I then explore how this capability ought to be balanced against states’ pro tanto duties to promote sustainable diets. I argue that, generally speaking, sustainable diets are compatible with the freedom of almost all people to have adequate eating experiences, and that there are plausible ways that states can resolve tensions when they arise. However, in cases of unresolvable conflict – so-called ‘tragic conflicts’ – the eating experiences of some individuals in certain contexts may sometimes be prioritised over sustainability.

In section 1, I analyse eating experiences, arguing that they can be understood to consist of three components: the act of eating, the various flavour sensations, and the interpretation of those sensations. The notion that interpretation is core to eating experiences leads to the important idea that the contextual and instinctive factors that inform interpretation play a major role in determining the value of eating experiences. For example, if one is hungry (but not starving) this might enhance an eating experience, whereas culturally unacceptable food is more likely to elicit a bad one. In section 2, I argue that access to adequate eating experiences should be understood as necessary for a minimally good human life. In section 3 I draw from the field of aesthetics to describe what adequate eating

experiences look like. Finally, in section 4, I explore the extent to which access to adequate eating experiences might conflict with sustainable diets, by discussing how the promotion of the four ‘visions’ of sustainable diets set out in Chapter 1 might affect individuals’ eating experiences.

1. Analysing eating experiences

A necessary part of all eating experiences is the phenomenological sensations elicited by the act of eating itself. Upon eating a slice of buttered toast, I notice the crunch of the crust; the salty fat of the melted butter; the temperature of the bread; etc. But these sensations comprise only part of the eating experience, because the sensation is also interpreted by the eater. This interpretation is informed by various (and numerous) factors. For instance, the toast tastes better when I’m hungry; my evolutionary history means I am primed to enjoy the flavour of the calorie-dense butter; I have grown up eating toast so the experience is a comforting, non-threatening one; etc. So, eating experiences are constituted by two components: the act of eating (or drinking) elicits a *flavour sensation*, which the eater then *interprets* according to both instinctive and contextual factors (see figure 1).⁴¹ In the rest of this section, I elaborate these two components.

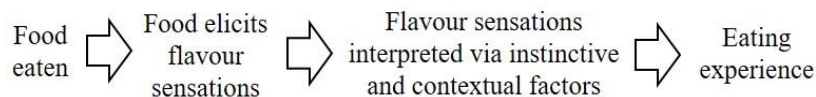


Figure 1. Components of the eating experience

‘Flavour sensations’ consist in the gustatory sensations elicited by the physical act of consuming foodstuffs via the mouth. These sensations can be divided into four different types. The first type of sensation is taste.⁴² Physiologically speaking, we *taste* food when soluble components of food are transported via saliva to taste buds on parts of the inner mouth or tongue (Sibley, 2001, p. 213). However, much of the sensation we commonly call ‘taste’ actually reaches us via our nasal receptors as smells. Smells are interpreted by the olfactory nerve and consist of volatile components transported by air to the nasal membranes. The olfactory nerve yields much more sensation than the taste buds; for instance, without use of it people have been demonstrated to be unable to distinguish between flavours like onion and potato. From a physiological perspective then, much of what we commonly call taste is more accurately described as smell. Nonetheless, in the discipline of aesthetics, in common usage, and in this chapter, gustatory taste is taken to capture all the sensations received via the mouth by both taste buds and nasal receptors (Sibley, 2001, p. 213; Brady, 2012). The second type of flavour sensation is

⁴¹ To be clear, I am not committed to this formulation being an accurate description of how eating experiences work. Indeed, I am sure that it is not; for instance, interpretation will sometimes precede the flavour sensation (think of the increased enjoyment *anticipation* can bring to an eating experience), so the chronology of the formulation is obviously not always as I have described. Nonetheless, the model is instrumentally useful, capturing most that is morally relevant when talking about the human gustatory experience.

⁴² Here, I am of course talking about ‘gustatory’ taste as opposed to ‘metaphorical’ taste. Used metaphorically, ‘taste’ describes aesthetic judgement. E.g. someone might have a good taste in art.

temperature, perceived by thermal-sensing nerves. The eating experience is informed by these nerves partly because they allow our mouths to sense different temperatures. A fresh cup of tea is hotter than one left sitting for five minutes, and the experience of drinking each is correspondingly different. Additionally, some chemical perceptions, such as the burning sensation experienced upon eating a hot chilli, are perceived by these same nerves.⁴³ The third type is texture. Food scientists distinguish between categories of touch experiences that result from various types pressure and contact within the mouth; ‘tactile’ perceptions inform us about size, form, and texture of food, while ‘kinaesthetic’ perceptions inform us about the composition of food as we bite, chew, or swallow. The fourth and final type of flavour sensation is sound; auditory sensations such as fizzes, crunches, and chewing noises are conducted via the jaw and skull. Sound plays a crucial role in our perception of food and can greatly affect our overall experience of any given foodstuff. As Yuriko Saito notes, the “experience of biting into a juicy apple cannot be separated from its crunching sound” (Saito, 2019, p. 120).

The experiential sum of taste, temperature, texture, and sound comprises what I call flavour sensation (or just ‘flavour’).⁴⁴ Anyone whose sense organs are functioning normally can experience flavour, although sensations will vary from person to person, since not all individuals have the same sensory capacity. This might be due to differences in their relevant sense organs (e.g. children have more sensitive taste buds) or might be due to genetic differences (e.g. research suggests that tasting coriander as ‘soapy’ is an inherited trait).

The second component of eating experiences is the *interpretation* of the flavour sensations just described. This interpretation is informed by two factors. First, flavour is interpreted *instinctively* because, due to our evolutionary origins, humans are predisposed to find certain flavours pleasurable (Breslin, 2013). For instance, when an infant child is fed something sweet they react positively; smiling and sucking at the food. However, fed a mildly bitter foodstuff, like broccoli, they react negatively; grimacing, gagging, and shuddering. This predilection towards particular eating experiences appears to be ‘primitive’, since the reactions persist even in anencephalic infants (Mennella and Bobowski, 2015). While instinctive interpretations of flavour are most marked in young children, they do of course persist to a significant extent into adulthood. For instance, most adults enjoy the flavours of fat and sugar.

Second, flavour sensations are interpreted *contextually*. I mean ‘context’ in a broad sense, to capture all of an individual’s circumstances that determine their interpretative reactions to flavour sensations that are not determined by instinct. Context is core to how eating experiences are interpreted because, as Jean Kazez puts it, eating experiences are “cognitively penetrable... what you believe about

⁴³ Apparently chilli flavour is also sometimes perceived by pain-sensing nerves, but for simplicity’s sake I put this to one side.

⁴⁴ For the sake of analytical completeness, it is worth briefly noting that the four sensations do not occur in isolation to one another. Rather, depending on the composition and state of the food eaten, each sensation influences the others and vice versa. For example, since taste is a chemical process, the temperature of a food partly determines its flavour. This means that individuals do not solely notice different temperatures of food; food literally tastes different depending on its temperature (e.g. compare the taste of room temperature chocolate to that of chilled chocolate).

the food you're eating affects the way you experience it" (Kazez, 2018, p. 663). For instance, the culture individuals inhabit is an important part of the context that constitutes their eating experience, since it plays a large part in determining what flavour sensations are understood as desirable. It is due to our food culture that many of us understand cheese to be a tasty food, rather than a lump of mouldy, solidified milk. A slightly less obvious example is individuals' past experiences with food, and the context in which they occurred. I enjoy sticky toffee pudding partly because I connect the taste to happy childhood memories that featured the dessert. The immediate context within which the eating experience occurs also influences the eating experience. For instance, the enjoyment of eating can be increased if the eater is hungry.

Interpretation, whether it is informed by instinct or context, is not necessarily conscious. For instance, a reaction of disgust to a disliked food can occur without conscious thought about why the eater finds the food disgusting. On the other hand, the interpretative process *can* be conscious and purposeful. For instance, a vegetarian can cultivate a disgust reaction to the taste and texture of meat. Relatedly – and importantly – interpretations of flavour sensations are rarely immutable. Of course, some interpretations are very deeply held; think of a flavour sensation that is linked to a traumatic experience, or a flavour so putrid that we cannot override our instinctive dislike of it. However, many *are* changeable. Changes may be brought about by changes in individuals' contexts, or 'training' our instinctive reactions (coffee, olives, and whisky are common flavours that individuals often have to train themselves to enjoy). The fact that individuals' interpretations of flavour experiences can change will prove important later in this chapter, when I argue that, in many cases, the provision of specific foodstuffs to which individuals happen to be accustomed are not necessary for access to adequate eating experiences.

To summarise, by eating a diet, individuals are exposed to a string of eating experiences. At their base, these experiences are informed by the qualities of the food that is eaten. But flavour sensation is only one aspect of an eating experience; individuals also interpret flavour sensations according to instinctive and contextual cues. As we will see in the next section, when it comes to determining the value of an eating experience, this interpretation can be equally or even more important than the 'raw data' of the sensation itself.

2. The moral value of eating experiences

The philosophers who have explicitly engaged with the normative value of eating experiences tend to be animal ethicists concerned with whether the eating experiences elicited by eating animal-derived foodstuffs justify the corresponding harm to animals. At first glance, these scholars often seem to implicitly acknowledge the value of eating experiences, by claiming that people can continue to have good eating experiences without eating animal derived foodstuffs. For instance, in *Animal Liberation* Peter Singer gives a description of the "new and interesting cuisine" readers can expect to encounter when they become vegetarian, while Alasdair Cochrane reminds readers that "contrary to some popular

opinion, vegetarians can even enjoy immense pleasures of the palate!” (Singer, 1975, pp. 177–179; Cochrane, 2012, p. 84). However, these statements are intended to offer solace to omnivore readers, rather than as defences of the value of eating experiences. For instance, Cochrane goes on to say that the welfare costs of humans missing out on the experience of eating meat are “trivial” compared to the more fundamental interest of animals’ interests in continued life (Cochrane, 2012, p. 84). Other animal ethicists reach the same conclusion regarding the triviality of the experience of eating meat, albeit via different routes.⁴⁵

I agree that that eating experiences elicited by consuming animal flesh will be outweighed by the interests of the animal in most, perhaps all, possible cases. However, it does not follow that eating experiences are necessarily only of trivial value. Indeed, there is a strong (*prima facie*) case in support of eating experiences having moral value at least some of the time. For one thing, people tend to go to great lengths to have good eating experiences. For example, many people dedicate substantial time and resources to learning to cook, or spend large sums of money on buying food in restaurants. Strikingly, many people with anosmia continue to pursue varied eating experiences despite their inability to smell meaning their gustatory capacity is substantially undermined.⁴⁶ More broadly, studies consistently show that one of the first things people do upon gaining a disposable income is increase the variety of their diets and thus the variety of their eating experiences (e.g. Gerbens-Leenes, Nonhebel and Krol, 2010). This behaviour continues long after diets are adequately nutritious, so is arguably indicative of the value people place in eating experiences themselves, not just in the nutritional value of a more varied diet.

Furthermore, it appears that people can be harmed by being subjected to bad eating experiences. For instance, in 2021 a group of asylum seekers in the UK complained about the poor quality of the meals they were being fed while waiting to be processed by the Home Office. Photos of the meals showed overcooked penne pasta smeared with a small amount of reddish-brown paste, and an amorphous jumble of beans, cubes of unidentifiable vegetables, and congealed fat. Apparently, the meals provided were adequately nutritious, in the sense that they provided sufficient calories and balance of nutrition. Despite this, it seems plausible that the lives of the asylum seekers were significantly worsened by the *experience* of eating the meals (adding weight to this idea is the fact that the asylum seekers later went on hunger strike over the meals). I am not alone in the thought that individuals can be harmed by bad eating experiences. Jean Kazez makes a similar point: “A prison warden can cause serious harm to an inmate by taking away all light or taking away all darkness, all quiet or all sound. Likewise, it would be serious if prisoners were deprived of all food enjoyment – if they were given a constant diet of tasteless but nutritious kibble, or worse, a constant diet of foul-tasting slime” (Kazez, 2018, p. 664).

⁴⁵ E.g. (Singer, 1975, p. 171; Francione and Charlton, 2015, p. 105; Fischer, 2018, p. 259).

⁴⁶ On the Reddit forum ‘anosmia’, ‘anosmic foodies’ swap tips about how to enjoy food with a compromised sense of taste (Rain2o, 2021) and the BBC has a page dedicated to ‘recipes for anosmia’, which emphasises texture, colour, and spice instead of taste (BBC, no date).

An argument against the idea that eating experiences may have a morally important impact on individuals' lives is that the 'same' eating experiences may be experienced differently by different people in different situations. For example, if the food supplied by the Home Office in the example above was eaten in another context – say after running a marathon – it might not cause harm at all, or might even be experienced as beneficial. However, this is to misunderstand the nature of eating experiences; in this case by conflating 'flavour sensations' with 'eating experiences'. As I described in section 1, eating experiences are not determined solely by the flavour sensations that catalyse them. So, even if the asylum seeker and the marathon runner were to eat the same penne pasta dish, this does not mean they are having the same eating experience; in this case their different contexts would mean their eating experiences would be radically different.

A second argument against the moral value of eating experiences is that eating experiences only *appear* to be valuable or harmful as a result of wrongly ascribing them normative consequence that is due to other aspects of individuals' lives. For instance, asylum seekers in the UK are often held in conditions that undermine the central capability to have "control over one's environment" (Nussbaum, 2000, pp. 78–80). Perhaps their being fed food that is poor quality and prepared with little care should be understood as merely emblematic of this more profound undermining of their capabilities, rather than as evidence of the moral importance of eating experiences themselves. (Similarly, one could argue that access to good eating experiences is emblematic of a life where one's capabilities are being met). However, on balance I think it is more likely that the *very reason* eating experiences are emblematic of whether or not individuals' broader capabilities are being met is that they have an impact on individuals' well-being. One of the fundamental insights of the capabilities approach is that the real-life freedoms of individuals matter to their wellbeing. If a child is prevented from receiving an education due to their gender, the impact on their wellbeing does not flow solely from the discrimination, but from the absence of the education. The same, I think, is true for eating experiences; the *prima facie* evidence is enough to presume that they are, at least sometimes, morally important in and of themselves. Therefore, in the terms of the capabilities approach, we can say that in at least some cases having good eating experiences constitutes a functioning that contributes to individuals' freedom to lead a minimally good life.

However, just because eating experiences are *sometimes* important for individuals' wellbeing does not imply that they should be considered as a universal requirement for human wellbeing (or, in Nussbaum's language, as constituting a 'central capability'). To see what I mean, imagine that, for various historical and cultural reasons, the UK was a nation of opera lovers. From an early age children are exposed to opera and receive education and training in the art form. Opera houses thrive in every major city, and attending performances is a common social activity. Does this mean that access to the opera should be viewed as a central capability for all humans? The answer is, of course, 'no'. Rather, in this imagined example, the particular cultural circumstances of the UK mean that most individuals in the UK use visits to the opera as one of the functionings by which they meet the *true* central capability of 'senses, imagination, and thought'.

Are adequate eating experiences fundamental to humans' ability to lead minimally good lives, in a way that access to opera experiences is not? I think they are. To see this, imagine two possible alternative Earths to ours. On one, opera was never invented. On the other, the only nutrition available is in the form of a liquid that is administered intravenously, meaning that no human has ever had an eating experience. On the no-opera Earth, I think it is very likely that wellbeing is much the same as in the actual Earth; anyone who enjoys opera in our current world would have simply found another form of art to engage with. However, on the IV food Earth, my intuition is that the inhabitants' wellbeing is significantly lower compared to the actual Earth. The experiences elicited by the opera are substitutable, in a way that the experiences elicited by eating food are not.⁴⁷ Why is this the case? This is a hard question to answer, but I think it has to do with the fact that humans are creatures for whom eating is deeply ingrained, both instinctively and through social and cultural practices accumulated through countless generations. (In this case, perhaps *does* imply *ought*?).

For what it's worth, in a wider discussion about 'human dignity', Nussbaum coincidentally touches on what I am calling the eating experience. For her, the purpose of the below passage is to make the broader point that mere subsistence is insufficient for the realisation of human flourishing (thus forming the basis for a list of central capabilities that goes much further than providing what is required for mere survival). The supporting example she gives, however, seems to implicitly endorse the idea that eating experiences are integral to human wellbeing:

We judge, frequently enough, that a life has been so impoverished that it is not worthy of the dignity of the human being, that it is a life in which one goes on living, but [is] unable to develop and exercise one's human powers... [For example] a starving person doesn't use food in a fully human way... He or she just grabs at the food in order to survive, and the many social and rational ingredients of human feeding can't make their appearance... (Nussbaum, 2000, p. 72)

So, for Nussbaum, when humans eat in a state of desperation – for purely instrumental purposes – their ability to *rationaly appreciate* food is degraded. This seems right: when starving people eat they are unable to relish cherished flavours and textures; they miss out on the delight that comes from exploring new ones; familiar dishes that once offered security or comfort are reduced to mere 'fuel'. As Marx says in a passage quoted approvingly by Nussbaum, "for the starving man, it is not the human form of food that exists, but only its abstract being as food; it could just as well be there in its crudest form" (Marx, quoted in Nussbaum, 2000, p. 34). While she does not say so explicitly, Nussbaum therefore implies that to eat in a 'fully human way', people should have the freedom to engage in the

⁴⁷ Of course, on the IV food Earth people might proceed with their lives without noticing the loss of eating experiences. This, however, is due to what Nussbaum calls 'adaptive preferences'; when faced with no other options, we can become accustomed to objectively bad conditions. This, however, does not undermine the badness of the conditions.

‘social and rational’ elements of ‘human feeding’. In other words, she seems to be endorsing the idea that individuals should have access to what I am calling adequate eating experiences. If this is right, then access to good eating experiences should be understood as a necessary component of the central capability of ‘senses, imagination, and thought’, which stipulates that individuals ought to have the freedom to “use the senses, to imagine, think, and reason - and to do these things in a ‘truly human’ way – [and] to have pleasurable experiences and to avoid non-beneficial pain” (Nussbaum, 2000, pp. 78–79). It is upon this assumption that I proceed.

3. What are adequate eating experiences?

In this section, I propose a scalar framework for understanding the quality of eating experiences. To do this, I draw on two works from the field of aesthetics: John Dewey’s *Art as Experience* and Yuriko Saito’s *Aesthetics of the Everyday* (Dewey, 1934; Saito, 2019).⁴⁸

There is broad agreement that ‘the aesthetic’ is a *quality*, and I proceed under the assumption that it is a *valuable* quality. However, there is disagreement about its nature. According to the traditional Kantian account, the aesthetic is a quality exhibited by specific objects, usually pieces of art, that individuals can perceive through (sometimes particular types of) phenomenological interactions with the objects in question (Zangwill, 2019). Importantly, the aesthetic quality of these objects is subject-neutral; the objects are *intrinsically* aesthetic, whether or not observers perceive that quality. Conversely, Dewey argues that the aesthetic manifests “through interaction with [the environment]”, meaning that the aesthetic consists in *experience* (Dewey, 1934, p. 19). Thus, for Dewey, the aesthetic is *subject-dependant* rather than subject-neutral. This has the consequence that aesthetic experiences can be prompted by any object that elicits the required experience from whomever is engaging with it; a work of art certainly, but also a piece of architecture, a pop song, a memory, the feeling of driving down a motorway, etc.

I prefer Dewey’s account of the aesthetic. Partly this is because I find his account more plausible as compared to Kant’s; it seems farfetched to me that the aesthetic – a specifically human phenomenon – could emanate from a specific set of characteristics or features that are separate from human experience.⁴⁹ More importantly though, understanding the aesthetic as an inherently valuable but nonetheless experiential – and thus inherently personal and subjective – phenomenon is consistent with Nussbaum’s capabilities approach. As I have explained previously (see the introduction to this thesis), Nussbaum holds that certain opportunities and abilities – capabilities – are of fundamental importance to living a minimally good life, but she remains intentionally ambivalent with regard to *how* those capabilities ought to be fulfilled. Dewey recognises that the aesthetic emerges from the interplay

⁴⁸ The philosophical field of aesthetics has traditionally argued against the notion that food-objects can exhibit aesthetic qualities (or elicit aesthetic responses). These arguments are discussed and rebutted in Carolyn Korsmeyer’s *Making Sense of Taste: Food and Philosophy* (Korsmeyer, 2002).

⁴⁹ Like, as Dewey puts it, an “intruder in experience from without” (Dewey, 1934, p. 52).

between individuals, their experiences, and the context of their lives, and in doing so aligns with Nussbaum's vision of human flourishing taking many diverse forms.

What does an aesthetic experience look like according to Dewey? Slightly confusingly, he differentiates aesthetic experiences from 'normal' experiences primarily through the use of the indefinite article: 'an' experience. I'll follow him in doing so for now, italicising the 'an' for clarity's sake. The idea of *an* experience has some intuitive weight, so let us first read his account of it in his own words:

...those situations and episodes that we spontaneously refer to as being "real experiences"; those things of which we say in recalling them, "that was an experience." It may have been something of tremendous importance – a quarrel with one who was once an intimate, a catastrophe finally averted by a hair's breadth. Or it may have been something that in comparison was slight – and which perhaps because of its very slightness illustrates all the better what is to be an experience. There is that meal in a Paris restaurant of which one says "that was an experience. It stands out as an enduring memorial of what food may be." (Dewey, 1934, p. 36)

I think most of us have an intuitive grasp of what Dewey means by *an* experience. But it is helpful to proceed with a more precise conception of it. He does not define *an* experience in terms of necessary and sufficient conditions, but certain features can be discerned that distinguish *an* experience from the general experiential stream of our lives (Leddy and Puolakka, 2021). I describe these features next and, for illustrative purposes, cash them out in terms of an example eating experience: that which is elicited when one eats a particularly good orange.

According to Dewey, 'an experience' takes place over a period of time, it is discreet – it has a beginning and an end – and it develops and changes as it is experienced. Thus, it is characterised by three stages: "inception, development, and fulfilment" (Dewey, 1934, p. 62). In the case of an eating experience, the inception is triggered by an act of eating. So, the experience might begin with the sensation of placing an orange segment on my tongue, eliciting a cool sensation, a slight weight, the aroma of citrus. As I proceed with eating, new flavour sensations appear. These sensations are phenomenologically distinct from earlier sensations, yet are coherently experienced as a later phase of the same experience; they build upon the earlier phases of the experiences to form a dynamic whole. For example, as I bite into the first segment, I am aware of flesh just-audibly bursting, leaving stringy, textured pulp stuck to my tongue, the characteristic sugary juice, and a now much intensified citrus aroma.

An experience, though, does not only consist of phenomenological sensations. Rather, these sensations prompt psychological phenomena, such as emotions, memories, or simply visceral enjoyment. For instance, perhaps while chewing the segment a fleeting pang of nostalgia – prompted by a half-forgotten half-time orange slice on a grassy pitch – runs parallel with the present satisfaction

of eating one of my five-a-day, while concurrently I notice a faint tartness in the remaining pith that I have yet to swallow. In a normal experience these psychological phenomena might be perceived as distinct from the experience in question, but for Dewey during *an* experience they condense into the experience, supplementing what still remains a cohesive whole. Taken together, Dewey describes this accumulation of sensory and psychological phenomena as having rhythm, momentum, and direction, with the result that “every successive part flows freely, without seam and without unfilled blanks, into what ensues” (Dewey, 1934, p. 43). *An* experience, in other words, has a unified quality, despite the essential dissimilarity of its constituent parts.

Finally, *an* experience does not come to an end at some random point in time, rather it “runs its course to fulfilment”, in a manner that means it is “demarcated in the general stream of experiences from other experiences” (Dewey, 1934, p. 35). As with all the other aspects of *an* experience, the form this fulfilment takes will vary from experience to experience. In my example, it might occur at the moment I swallow the last piece of orange, or at the point that my reflections on the orange cease to be in the present and become retrospective (from ‘this is delicious’, to that was a delicious orange’). To summarise, *an* experience occurs when all of the components of the eating experience (the act of eating, the flavour sensations, and the instinctive and contextual interpretation) come together to form an important aberration in one’s normal stream of experience, allowing one to reach a highpoint in one’s experiential life.

Now, for Dewey *only* sublime experiences can be characterised as *aesthetic*. But, as Yuriko Saito argues, this is an overly restrictive notion of the aesthetic; under such an account we would be lucky to ever have an aesthetic experience, since under Dewey’s conceptualisation they are “hermetically sealed off from our ordinary engagement with daily life” (Saito, 2019, p. 45).⁵⁰ Instead, according to Saito, *many* of our everyday experiences should be understood as having an aesthetic quality (Saito, 2019, p. 45). This seems plausible to me. Imagine biting into one’s first in-season tomato, taking a sip of soup on a cold day, or using one’s incisors to gnaw into a slightly charred corn on the cob. Even if we take it that none of these acts of eating elicited *an* experience’ as according to Dewey, it still seems likely that they elicited aspects of one.⁵¹ These experiences are still worthy of our attention, worthy of reflecting upon, worthy of describing to those close to us in order to share the experience. Thus I think it makes sense to think of them as eliciting a type of aesthetic experience, even if they are not of the quality of *an* experience.

Drawing from both Dewey and Saito, I propose understanding eating experiences on a scale of ‘aesthetic quality’ (see figure 2). On one end of the scale are *sublime* eating experiences. The meal in

⁵⁰ Given this, it is not surprising that when Dewey gives an example of an eating experience that “stands out as an enduring memorial of what food may be”, he refers to what is arguably an archetype of aesthetic rarification: the Parisian restaurant.

⁵¹ To put it in Dewey’s terms, perhaps we experienced an inception and fulfilment when eating the tomato, but became distracted and failed to experience the overlapping of sensations and psychological phenomena that constitute a coherent ‘condensation’ of experiences.

that the capability of having sublime eating experiences is not *required* to live a minimally good life, although as with all capabilities individuals are free to pursue such experiences as long as doing so does not undermine the central capabilities of others. (I.e. all things being equal, the state should not present barriers to individuals having sublime eating experiences).

With a minimum threshold for adequate eating experience established, in the next section I move to consider how states ought to balance individuals' access to eating experiences against the state duty to promote sustainable diets. Before doing so, however, I want to highlight that states' abilities to promote adequate eating experiences is, in fact, quite constrained. In a way, eating experiences are like romantic relationships; the state can affect the basic conditions in which they arise (arguably, it's easier to cultivate a loving relationship when essential human needs such as healthcare and sufficient food supply are fulfilled), but ultimately the state neither could nor should help individuals to find and form connections with one another. Romantic relationships, after all, are primarily both the responsibility of individuals *and* controlled by individuals. Similarly, the state can surely affect the basic conditions that influence individuals' access to adequate eating experiences, but it is also up to individuals to cultivate the circumstances in which they have them. One person's 'meal in Paris' is another's 'grabbing a bite to eat on the way to the Eurostar', as it were. One of the tasks going forward, then, is to identify where exactly state action to promote sustainable diets might infringe on those basic conditions that enable individuals to access adequate eating experiences.

4. Balancing eating experiences and sustainable diets

Let's recap. I began this chapter by saying that 'eating experiences' are individuals' interpretations – instinctively or contextually informed – of the 'flavour sensations' elicited by an eaten foodstuff. Next, I argued that access to adequate eating experiences ought to be considered a constitutive part of the central capability of 'senses, imagination, and thought'. Then, in the section just gone, I drew from Dewey and Saito in order to set out an account of what adequate eating experiences might look like. I said that individuals ought to have access to everyday acts of eating that elicit at least diurnal eating experiences, with occasional access to stimulating eating experiences.

This section is organised into four subsections, each of which corresponds to the four visions of sustainable diets I have set out previously (see chapter 1, section 3). In each subsection, I address the following three questions. First, how might implementing the vision impact on individuals' eating experiences? Second, do any of those impacts undermine individuals' capabilities to have an adequate eating experience? Third, if the capability to have an adequate eating experience *is* undermined, how should this be balanced against the state's duty to promote sustainable diets? (The third question has, to a large degree, already been settled in my discussion of 'tragic conflicts' in chapter 2. But it deserves some elaboration here).

Before proceeding, two clarifications about the focus of the coming discussion. First, as discussed in chapter 3, many people do not have access to adequately nutritious diets. It stands to reason

that many of these people will also have inadequate access to good eating experiences, since the context of their eating acts – for instance worrying about where the next meal will come from – will not be conducive to ‘fully human’ eating experiences. In this section, however, my focus will be on how promoting sustainable diets might affect the eating experiences of people who *currently have* access to adequately nutritious diets. (It is uncontroversial that individuals ought to have access to adequately nutritious diets and the fact that doing so would also improve their eating experiences only adds to that moral imperative). The second clarification relates to the fact that much of the context that informs individuals’ interpretations of flavour sensations will be determined by their *identities*. For instance, for a Jewish person whether or not an eating experience can be sublime will obviously depend, at least in part, on whether or not the foodstuff that elicits the response is kosher. While the following discussion cannot avoid touching on the topic occasionally, a dedicated discussion on identity will be reserved for the next chapter.

4a) Sustainability maximising

Readers will recall ‘Huel’, a nutritious foodstuff that, for the sake of argument, could be produced entirely sustainably in quantities sufficient to feed the entire human population. Huel is our stand-in for a maximally sustainable foodstuff, meaning it would be the only foodstuff available in the *Sustainability Maximising* vision of sustainable diets. It comes in the form of an off-grey powder that is mixed with water to produce a substance of milkshake-like consistency that has a neutral, slightly sweet, oatmeal-like taste. Thus, for most people the obstacle to Huel’s ability to deliver adequate eating experiences is not that it would elicit *offensive* flavour sensations, but that the flavour sensations would be *extremely limited* as compared to a diet comprising a normal range of foodstuffs. For instance, its texture is homogenous and liquid, so it would hardly yield any of the kinaesthetic or tactile sensations elicited by the near-infinite variety of textures found in a normal varied diet; the sensations elicited by food ‘crunching’, ‘snapping’, ‘melting’, and ‘crumbling’ would all be out of reach. Similar would hold regarding the tastes it elicits, and the sounds etc. Moreover, there would be no variety from one meal to the next; the flavour sensations of each eating experience would be the same as the last, and the same as the next.⁵²

Due to the fact that the flavour sensations elicited by a Huel-only diet would be so limited, we might think that it is obvious the *Sustainability Maximising* diet would be unable to provide individuals with adequate eating experiences. However, it is worth considering a couple of ways the assumed pre-eminence of flavour sensations can be challenged. First, we might question the idea that varied taste sensations are required *at all* for the provision of adequate eating experiences. We all have acquaintances who prefer to consume ‘beige’ foodstuffs and who show little interest in exploring new

⁵² In reality I suspect individuals would find ways in which to vary the flavour sensations, perhaps by serving the substance at different temperatures or by mixing it with less water in order to vary its viscosity. But let’s assume such culinary innovations are not possible in the *Sustainability Maximising* scenario.

gustatory experiences. Indeed, it is even possible to find real-life accounts from people who voluntarily choose to replace many, or even all, of their meals with Huel. In both cases – especially the first, but even in the second – it is plausible to me that these individuals still achieve adequate eating experiences when consuming such diets; for them, for whatever reason, varied flavour sensations are simply not required for aesthetically fulfilling eating experiences. Does the existence of such people demonstrate that the mainstream attachment to variation in taste sensations is superfluous for accessing adequate eating experiences? I think the answer is ‘no’; such people are outliers and the vast majority of individuals tend to prefer some variation in taste sensations to elicit adequate eating experiences. (Much like the existence of people who like to fast does not entail that it would be permissible to limit all people’s access to food).

However, there is a second way the pre-eminence of flavour sensations might be challenged. On reading the accounts of people who have embarked on a Huel-only diet, something that stands out are the frequent assertions that the eaters feel like they are *acting more sustainably* by choosing Huel. Of course, it might be the case that these people simply see themselves as making compromises with regard to eating experiences for the benefit of sustainability. But there is an alternative: perhaps *knowing* that consuming a Huel-only diet contributes to a sustainable food system contributes to the quality of these people’s eating experiences. After all, individuals’ interpretations of flavour sensations are partly informed by their contexts, and since the aesthetic is subject-dependent, the aesthetic quality of eating experiences will often be determined just as much (or *more*) by the context in which the food is consumed as the flavour sensations elicited by the food itself. And part of that context is that the individual doing the eating knows that consuming a certain foodstuff is the morally correct course of action. Therefore, a diet’s sustainability could be a factor in shaping eating experiences. Ultimately, I do not think it would be a powerful *enough* factor to make up for the limited taste sensation provided by Huel, at least for the majority of people. However, the idea is worth exploring further, because it is interesting in its own right, and also the principle at stake (the extent to which the moral quality of a diet affects the aesthetic experiences it can elicit) will prove relevant to whether or not other visions of sustainable diets can provide adequate eating experiences.

The fullest account of the relationship between eating experiences and the ethical characteristics of the food being eaten is found in Carolyn Korsmeyer’s notion of ‘ethical gourmandism’ (Korsmeyer, 2012). In line with what I said in section 1, Korsmeyer begins by pointing out that eating experiences never flow solely from taste sensations, but rather are informed by the eater’s context.⁵³ Part of that context is that individuals *recognise* what they are eating; as she puts it: “tastes are experienced as *tastes of something or other*” (Korsmeyer, 2012, p. 89, original emphasis). Alongside – and due to – that recognition, there will very often come an understanding of *the processes* behind the foodstuff being

⁵³ She uses different terminology to me, but the basic argument is the same (Korsmeyer, 2012, p. 89). For clarity’s sake, I will continue to use the terminology I have established already.

consumed (Korsmeyer, 2012, p. 96).⁵⁴ For instance, to eat a beef burger is to recognise that one is eating the flesh of another animal, and is thus also to be aware of the various processes – breeding, rearing, slaughtering, butchering – that are required to bring the burger to your plate. Given these facts about the composition of eating experiences, Korsmeyer argues that “moral properties [are] infused in the taste properties of food” (Korsmeyer, 2012, p. 96). In other words, our eating experiences are partly determined by our beliefs about the moral characteristics of whatever we are eating. This seems right; picture the vegetarian whose meal ‘turns to ashes in their mouth’ upon finding out it contains meat. Finally – drawing on the notion of ‘means moralism’ – Korsmeyer argues that in order for eating experiences to be aesthetically valuable, they must have moral properties that are aligned with the eater’s ethical commitments. She therefore concludes:

...if one holds that the means of producing a food are wrong, then the food’s taste will register that wrong... Therefore, positive aesthetic assessment is pro tanto positive moral assessment when it comes to tastes.... If it is delicious then it is also deemed [ethically] good to eat. (Korsmeyer, 2012, pp. 97–98).

Korsmeyer’s conclusion is quite a radical one, but for a second let us assume it is correct. As I explained in chapter 1, the sustainability of a diet is determined by the *morally relevant* environment-affecting *processes* behind it. (Of course, I cash out ‘morally relevant’ in the terms of the capabilities approach). In other words, as I understand it, the *sustainability* of a diet is exactly the sort of ‘moral property’ that Korsmeyer thinks can ‘infuse into the taste properties of food’. When paired with her conclusion, this has a remarkable implication: diets *must be sustainable* in order to yield aesthetically valuable eating experiences, since any other possible diet would be what we might call ‘morally tainted’. If Korsmeyer’s ethical gourmandism holds up then, the potential tension between individuals’ access to adequate eating experiences and state promotion of sustainable diets simply falls away.

However, I suspect most readers will be sceptical about the idea of ethical gourmandism. One reason to doubt how far we can take its conclusions is that the global food system is so complex (and opaque) that individuals could never be aware of all the moral properties of what they are eating. This, though, is a practical problem and we could conceive of it being solved by sufficiently ambitious public information campaigns (e.g. a state promoting a Huel-only diet could widely disseminate the idea that Huel is the only truly sustainable diet). The most controversial part of Korsmeyer’s argument, I think, comes from her appeal to ‘means moralism’; the idea that aesthetic experiences can only be elicited by ‘ethically pure’ objects. The most obvious problem with this is that there are seemingly countless examples of individuals appearing to find eating experiences to be aesthetically valuable, despite them being elicited by foodstuffs that the eater is fully aware are produced in morally bad ways. (Think of

⁵⁴ Korsmeyer actually makes the stronger claim that tasting *requires* recognition of the processes behind it, but this is, in my opinion, more controversial and is not necessary to her argument as I summarise it here (Korsmeyer, 2012, p. 92)

the millions of people who continue to enjoy eating the flesh of intensively produced animals). Korsmeyer explains this phenomenon by saying that our circumstances generally make it possible to avoid scrutiny regarding what one eats (either from others or through self-reflection), and thus it is easy to exist in a state of *akrasia* (Korsmeyer, 2012, p. 99). If she is right about this, then the conclusion above holds and sustainable diets are in fact the only ones that elicit truly aesthetically valuable eating experiences. However, the alternative is that ‘means moralism’ is simply wrong; perhaps good eating experiences are just not the sort of things that have to be consistent with our moral values. For the sake of argument, for the rest of this chapter I assume that this is the case.

Nonetheless, it seems plausible to me that Korsmeyer’s argument is correct all the way until the step that relies on ‘means moralism’. That is, while the moral quality of foodstuffs may not play a ‘trumping’ role, eating experiences can still be affected by the moral quality of that which is eaten. Put another way, it is sometimes said that hunger is a good sauce, so perhaps moral righteousness is too? Indeed, I suspect that the limited taste sensations available from a Huel-only diet could be compensated to some degree by the perceived ethical goodness of the diet. We might imagine, for example, a state dedicating substantial resources to ensuring that the moral case for switching to a Huel-only diet was extremely salient to all individuals. In these circumstances, it seems plausible that meals of Huel might come to represent participation in an important shared project to ‘save the planet’ for our ancestors. Sips of the substance might come to represent the reintroduction of once extinct species, the saving of icecaps, the flourishing of soil-based ecosystems, etc.; in this way eating experiences elicited by Huel could plausibly be stimulating or even sublime.

However, even in such idealised circumstances, I think it is most likely that the majority of eating experiences elicited by a Huel-only diet would be diurnal or even anaesthetic. Perhaps some individuals who happen to be particularly morally-attuned might be able to consistently have adequate or even good eating experiences (such people are especially primed for the ‘taste’ of sustainability). But for the majority of individuals, I think a diversity in flavour sensations plays such an important role in the provision of adequate eating experiences that even the excellent moral quality of a maximally sustainable, Huel-only diet could not compensate for their absence. Put more generally, at a population level the aesthetic determinants of eating experiences cannot solely flow from moral context; adequate eating experiences require some variation in the flavour sensations of the foodstuffs actually being eaten. Therefore, states could not bring about the *Sustainability Maximising* vision of sustainable diets without undermining their citizens’ access to minimally good eating experiences. Assuming that I am right that access to adequate eating experiences is required for a minimally flourishing life, it therefore follows that states may be permitted to promote less-than-maximally-sustainable diets, in order to ensure their citizens have access to adequate eating experiences. Readers will recall that I have previously introduced three other visions of sustainable diets, which are not maximally sustainable but are much more sustainable than Western-style diets. How might these visions affect the quality of individuals’ eating experiences?

4b) Sustainable development

According to the vision of sustainable diets represented by *Sustainable Development*, the set of foodstuffs available to individuals would remain very similar to that available today. This is because the vision advocates ameliorating the unsustainability of contemporary diets primarily by making production, processing, and distribution processes more efficient, rather than by eliminating any of the particularly unsustainable elements of the contemporary food system. For instance, year-long access to fresh tomatoes might be made more sustainable by reducing the greenhouse gas emissions of greenhouses, not by limiting production according to seasonal constraints. Therefore, the set of flavour sensations that are currently available would remain the same under a *Sustainable Development* dietary regime, meaning that eating experiences would in all likelihood remain qualitatively unchanged.

However, while *Sustainable Development* does not advocate taking any foodstuffs off the menu, arguably some of its more stringent iterations would propose *reducing the consumption of some foodstuffs*. For a practical example we can again look to the prominent EAT Lancet Commission's agenda, core to which is the proposal that those who follow a Western style diet ought to reduce their meat consumption (EAT Forum, 2019b). Practically speaking, there are two ways that consumption of a foodstuff can be reduced. First, the portion size of the foodstuff can be reduced (e.g. one rasher of bacon instead of three). Second, the foodstuff can be consumed less frequently (e.g. a bacon sandwich once a week, instead of once a day). It is worth noting from the outset that some individuals may require access to specific eating experiences, and this might include a requirement for eating specific amounts of foodstuffs at a specific frequency. For instance, some autistic people have strong attachments to particular flavour sensations; for them the freedom to eat a particular amount of a specific foodstuff at a specific frequency may be necessary to live minimally good lives. I take it that a reasonable implementation of *Sustainable Development* (and indeed any of the other visions) would make allowances for cases like this. Apart from such cases though, does reducing the amount available of (some) foodstuffs or reducing the frequency that they may be eaten undermine individuals' capabilities to have adequate eating experiences?

From one angle, it seems obvious that people *would* still be able to access adequate eating experiences in a *Sustainable Development* scenario, because all flavour sensations would remain accessible. Of course, this is slightly dependent on the extent of the reductions proposed; if one is only allowed a rasher of bacon once every five years, it could be argued that bacon has been de facto removed from one's diet. But I only envisage this vision advocating modest reductions. For instance, the EAT Lancet Commission proposes that meat consumption ought to be limited to 100g of red meat, 200g of poultry, and 200g of fish per week (EAT Forum, 2019b). To put this in perspective, this equates to around a third of the average European's consumption of animal flesh (1534g per week), and just under a quarter of the average North American's (2109g per week). This would be a substantial reduction, but not enough to justify the claim that an individual would not be able to access the same set of flavour

sensations that they could before. (Indeed, individuals' sets of flavour sensations might even be de facto expanded, since the nutrition lost by reducing their intake of some foodstuffs could be replaced with foodstuffs that did not previously feature in their diets).

However, as I have said before, flavour sensation is only one component of the eating experience; another component of the eating experience is the context in which individuals interpret flavour sensations. Crucially, context can mean that individuals *become accustomed* to consuming a specific amount of food at a specific frequency. Indeed, practically all humans have routine eating experiences with consumption of particular foodstuffs at their centre.⁵⁵ Furthermore, it is (obviously) true that many people have strong attachments to their routine eating experiences, and thus also to the specific amounts and frequencies of foodstuff consumption that form the gustatory foundations of those eating experiences. The question, then, is whether individuals' attachments to routine eating experiences mean that these specific forms of consumption are necessary for them to enjoy adequate eating experiences.

For the vast majority of people, I think not, because their attachment to the routine consumption is morally trivial. For instance, I am accustomed to – and enjoy – drinking coffee each morning, but if, in a *Sustainable Development* scenario, I could only do so once a week it would be wrong to say this threatened my freedom to have an adequate eating experience. After all, I have no particular commitments to coffee; I just tried it one day and enjoyed it (ignore the fact that coffee is mildly addictive). There is a vast array of other drinks available to me that yield various flavour sensations, some of which would be to my liking and yield diurnal or stimulating eating experiences. Of course, even in trivial examples like this, reducing the amount a foodstuff can be consumed might well impact individuals' *total level* of wellbeing. For instance, for some people, a bacon sandwich every day might bring great joy. We should remember though, that the capability to have adequate eating experiences is not supposed to ensure individuals enjoy maximally aesthetic eating experiences, but to ensure that they have access to eating experiences that allow them to live minimally good lives. So the consumption of a specific amount of a specific foodstuff might well increase an individual's wellbeing, but this does not necessarily mean that it is protected by the adequate eating capability.

However, the attachment to consuming specific amounts of foodstuffs at specific frequencies is not always so obviously trivial as my morning coffee; in some cases, the attachment might have substantial normative weight. For instance, in the 1970s the main staple – and an “object of great adulation” – of shepherds on Crete was boiled mutton, consumed every day in large quantities (Herzfeld, 2019, p. 39). It is conceivable that for these people a life of adequate eating experiences would frequently include the consumption of a sizeable portion of sheep flesh, requiring consumption

⁵⁵ Routine experiences might be determined by personal gustatory preference (e.g. some people like to regularly eat spicy food); by the communities or cultures they inhabit (e.g. in Japan the frequent consumption of rice is central to the normal eating experience); or be determined by some other contextual factor (e.g. perhaps one lives near a good bakery so buys a pastry from there each morning).

incompatible with the *Sustainable Development* vision. In other words, due to their contextual circumstances any eating experiences lacking sufficient portions of mutton were dull or even anaesthetic. Of course, there was nothing intrinsic about the shepherds that meant that they had to eat certain amounts of sheep in order to have adequate eating experiences; it was a routine to which they became accustomed, which was contingent on a specific set of contextual circumstances (circumstances that could change). Nonetheless, once that routine was established it is plausible to me that it *became* a requirement for the shepherds to have adequate eating experiences.

Such cases as the one above – where consuming specific amounts of foodstuffs at specific frequencies is both required for adequate eating experiences while also being unsustainable – imply conflicts between those whose eating experiences are undermined and those whose capabilities are undermined by the unsustainability. There are two main ways that these conflicts can be resolved. First, the circumstances that lead to particular forms of routine consumption being required for the provision of adequate eating experiences are not immutable. They can change, they do change, and – most pertinently here – they can *be changed* by state policy. For example, perhaps a programme educating the shepherds about other dishes traditional to their region and the provision of subsidies to encourage the uptake of those dishes could enable them to moderate their mutton consumption without undermining their capability to have adequate eating experiences. Second, if consumption patterns cannot be altered without undermining individuals access to adequate eating experiences, it might be possible to make allowances for such consumption without impacting negatively on the net level of unsustainability for which a state's population is responsible. For instance, presumably not all the population of Greece would require the sheep meat allotted to them in the *Sustainable Development* scenario, so perhaps their allocation could instead be assigned to the shepherds.

In practice, I think that the vast majority of conflicts that might arise through the promotion of a *Sustainable Development* vision could be resolved in one of these ways. However, in principle it is possible that some of the tensions are irresolvable and therefore constitute tragic conflicts. The states should treat these cases as it ought to treat any tragic conflict; by trying to organise society so as to resolve the conflict as soon as it can, and in the meantime prioritising the central capabilities of its citizens. In such cases then, some – strictly limited – exceptions to the *Sustainable Development* regime would be permissible.

4c) Promethean development

According to *Promethean Development*, technological fixes can be used to reduce the unsustainability of current diets. Examples include 'cultured meat', where animal muscle cells are grown in lab conditions to produce meat; indoor 'vertical' farming, where plants are grown under artificial light in nutrient-rich, non-soil mediums; or using 'microbial fermentation', which are techniques used to replicate milk proteins, allowing dairy milk to be manufactured without rearing cattle (Zimberoff, 2021). At first glance, this vision does not impact individuals' access to adequate eating experiences

because it does not restrict the *amount* of foodstuffs available (as just discussed in relation to *Sustainable Development*), nor *what* foodstuffs are available (as was the case with *Sustainability Maximising*). However, while *Promethean Development* promises to provide flavour sensations identical to contemporary diets, the mere fact (or more precisely, knowledge of the fact) that foodstuffs are produced using alternative technologies plausibly changes how individuals interpret those flavour sensations. Might this undermine individuals' access to adequate eating experiences? For the rest of this subsection, I explore this possibility in reference to the following case study of a meat substitute.

In 2021 a company called Redefine Meat released a plant-based, 3D printed foodstuff that attempts to mimic the experience of eating slaughter-based beef; we'll call it 'redefined beef'. William Sitwell, a food critic, was asked about his experience trying it. Regarding the flavour sensations elicited by redefined beef, he was ambivalent.⁵⁶ For the sake of argument though, let us proceed under the assumption that redefined beef is indistinguishable, in terms of the flavour sensations it elicits, from slaughter-based meat, since this is the promise of the *Promethean Development* vision. Under such an assumption, the following statement from Sitwell, about the sort of eating experiences he believes redefined beef is able to elicit, is revealing:

... I said where have you [the Redefine Meat chef] been working. She said ten years. I said *where*. She said Unilever. I said what have you been doing, cooking shampoo? [To the interviewer] These are not people who come from a heritage of the culinary arts. You know, meat is something that is incredibly important for people who actually really love their food (Sitwell, 2021).

Here, Sitwell attributes his discomfit with redefined beef to Redefine Meat's lack of 'heritage'. This has the implication that his worries would be alleviated if someone with the 'correct' heritage took on the project of 3D printing meat-like foodstuffs. But I suspect he would be uncomfortable with any meat produced in such a way, even if it were produced by, for example, someone descended from a long line of cattle ranchers. Reading between the lines, his position is more likely that Redefine Meat's *method of manufacture* means that their version of beef is unable to provide the same eating experience, (no matter how close it comes to matching the flavour sensation of slaughter-based meat). In the following, I first explore two possible explanations for why 'technology-heavy' methods of manufacture might not be able to elicit adequate eating experiences. I argue that neither of these explanations provide coherent justification for rejecting redefined beef. I then end with a discussion about whether *it matters* that there is not coherent reason for why redefined beef does not elicit good eating experiences for some people; what should states do in the face of bad eating experiences caused by irrationally-held beliefs?

⁵⁶ "It's a perfect receptacle for other stuff that you can put around meat, but as an entity in itself it doesn't have that joyous, deep, sort of soul-giving pleasure that meat does" (Sitwell, 2021).

The first possible justification is that individuals' eating experience might be undermined by knowledge of the *unnaturalness* of foodstuffs like redefined beef. However, as Josh Milburn argues, those choosing this line of argument must explain what exactly is natural about slaughter-based meat, what is unnatural about meat substitutes, and, respectively, what is good and bad about naturalness and unnaturalness. Given the difficulty of meeting such challenges, Milburn concludes that "appeals to naturalness more often serve as a post hoc rationalisation or an emotional appeal than a genuine criticism of plant-based meats" (Milburn, 2022, p. 10). Furthermore, the argument that Redefine Meat's simulated beef elicits worse eating experiences than slaughter-based beef on grounds of unnaturalness is particularly hard to make in the context that the ready alternative for producing beef – industrial agriculture – is *also unnatural*; the technologies and practices that make it up are just older and therefore humans have become accustomed to them. (Of course, perhaps those making such an argument might argue that they also object to industrial agriculture. But in that case they are committed to a vision of the agricultural system more similar to *Green Radicalism*, which I discuss separately later in the chapter).

Some commentators on the food system, perhaps most prominently Michael Pollan, argue that people ought to eat with "knowledge of all that is involved in bringing food out of the Earth and to the table" (Pollan, 2008, pp. 125–126). Inspired by this kind of argument, the second justification for the claim that redefined beef would undermine eating experiences is that the foodstuff would *alienate* individuals from the production process. This is the idea that the highly processed nature of redefined beef would disconnect individuals from things like the natural environment and the skills and techniques of those working in the agricultural sector, leading to a kind of spiritual impoverishment. Might this undermine individuals' abilities to access aesthetically valuable eating experiences? Assume for a second that it does. If alienation results from detachment from production processes, then it must be acknowledged that almost all of us are alienated from our *current* diets, since the average eater of food does not have a full understanding of how their food arrives at their table. It follows that most eating experiences within the contemporary food system must *already* be undermined, even before we consider redefined beef. So, if we are convinced that alienation undermines eating experiences, then we ought to support food systems that reduce alienation. (Indeed, Pollan advocates for wholesale changes away from the contemporary industrialised model of food production, towards 'localised' food supply chains and community growing projects, a vision aligned roughly with my *Green Radicalism* vision).

However, the notion that alienation undermines aesthetic experiences is not particularly convincing to me. For one thing, I am not sure how the threshold for alienation can be drawn non-arbitrarily. For instance, even in an imagined hyper-localised food system, a turnip grower might have very little idea about how the honey cakes from up-county are produced. Are they alienated from the honey cake baker? If not, why not? Furthermore, due to division of labour and complex supply chains in industrialised societies, it is arguably a near-universal characteristic of most individuals to be 'alienated' from the objects that surround them. For example, people often have little knowledge of the

processes involved in the creation of the technological devices they use. It seems odd to conclude that the experiences those devices elicit cannot be aesthetically valuable. Finally, it could be argued that the majority of us are ‘alienated’ from objects that are uncontroversially considered capable of eliciting aesthetic experiences. For example, personally, I possess limited knowledge about brushstroke techniques and the intricacies of paint manufacturing. Yet it seems wrong to say this means that a painting cannot elicit an aesthetic experience in me.

Even if we assume that there is no rational basis for believing that the ‘unnatural’ or ‘alienating’ nature of redefined beef hinders the possibility of adequate eating experiences, a question remains: how should the state respond to individuals who hold these beliefs anyway? We can look to the example of the Huel-only diet to understand that satisfactory eating experiences do not necessarily align with individuals' ethical convictions. A similar principle likely applies to concerns individuals may have regarding food items like redefined beef. In other words, while it is possible that any explanation individuals provide for why they perceive a food item as unnatural or alienating may not withstand scrutiny, the mere fact that they perceive it as such still undermines their eating experience. It is worth noting that, as with the Greek shepherds in the previous subsection, it is probably the case that there are only a small number of actually existing individuals whose eating experiences have the potential to be negatively affected by the perceived unnaturalness or alienating nature of the foodstuffs available within a *Promethean Development* vision. That is not to say that such perceptions would be uncommon (indeed the existing social scientific research concerned with how to increase consumer acceptance of alternative foodstuffs suggests the opposite⁵⁷), but rather that most people could become accustomed to non-traditionally produced foodstuffs quite easily. Indeed, in the Global North there has been a significant, demand-led increase in consumption of various alternatively produced meat and dairy substitutes in recent years that seems to attest to this fact (Richter, 2021).

Nonetheless, it is the case that for some people such perceptions would be hard or even impossible to overcome. In such cases, the promotion of the *Promethean Development* vision of sustainable diets would represent a genuine undermining of those individuals' access to adequate eating experiences. Like with the *Sustainable Development* vision before it, such cases would constitute tragic conflicts (since the sustainable course of action clashes in an irresolvable manner with some individuals' access to adequate eating experiences) and should be treated by the state as such. Practically speaking, this might mean, for example, working to normalise the consumption of 3D printed meat (through public awareness campaigns or promoting its availability in state run institutions) so that the tragic conflict does not endure into the future. It might also mean compensating those whose capabilities are undermined by the continued production of slaughter-based meat required to cater for those whose access to adequate eating experiences do genuinely rely on their food being of a more ‘traditional’ origin. To reiterate though, I think that cases that necessitated state action like this would be extremely

⁵⁷ E.g. (Siegrist, Sütterlin and Hartmann, 2018; Bryant *et al.*, 2019; Dupont, Harms and Fiebelkorn, 2022)

rare; the vast majority of people would be able to access adequate eating experiences in a *Promethean Development* setting.

4d) Green radicalism

In the scenario proposed by *Green Radicalism* – which rejects the ‘productivist’ model of contemporary agriculture in favour of ‘coexistence’ with the natural environment – the eating experiences of people who currently follow a Western-style diet change substantially. These changes fall into two broad categories. First, some foodstuffs become unavailable, while the availability of others become much more limited. For instance, meat and dairy production is reduced to the point that animal-derived foods are only available a handful of times per year. (For the sake of argument let’s assume that the state implements a system where this comparative scarcity is borne equitably by the population. E.g. through a rationing system). Second, the foodstuffs that *are* available are not necessarily available on demand – as in the contemporary food system – since they are determined by natural fluctuations such as seasons and weather. For instance, *fresh* summer berries would only be available within a relatively narrow growing season (I emphasise ‘fresh’, since this vision is not opposed to the use of technology *per se*; methods of preservation like freezing or canning would mean that berries are available year-long). There is not much new ground to cover regarding the impact of *Green Radicalism* on access to eating experiences, as conclusions reached earlier in the chapter can be applied here. For this reason, this subsection will be relatively short.

As with all the visions apart from *Sustainability Maximising*, within a *Green Radicalism* scenario there would be a huge variety of flavour sensations available to individuals. However, some flavour sensations would be much more scarce than in contemporary Western-style diets, or indeed in *Sustainable Development* and *Promethean Development* scenarios. Indeed, the limits on the availability of some foodstuffs would arguably equate to *de facto* unavailability. For instance, many people eating Western-style diets currently eat meat in most of their main meals; within the *Green Radicalism* scenario diets would instead be almost entirely vegetarian. Of course, as highlighted by Cochrane at the start of this chapter, vegetarian diets should not be viewed as intrinsically abstemious. There are countless interesting and stimulating flavour sensations available to vegetarians, and the same would be true for individuals living with a *Green Radicalism* scenario. For most people then, an entirely adequate range of aesthetically valuable eating experiences would be available under a *Green Radicalism* regime.

Nonetheless, the promotion of a *Green Radicalism* vision *would* negatively affect some individuals’ eating experiences. Readers will recall that in my discussion of *Sustainable Development* I said that individuals can become accustomed to specific flavour sensations, and that this sometimes has the result that their access to adequate eating experiences relies on the frequent consumption of specific amounts of foodstuffs. (Recall the example of the shepherds whose access to adequate eating experiences require the frequent consumption of large amounts of mutton). Since this is the case, it is

surely true that almost entirely removing foodstuffs from those individuals' diets, as would be the case if the state were to promote *Green Radicalism*, would have an even greater impact on their access to adequate eating experiences. (The only thing worse than cutting the amount of mutton the shepherds can eat is eliminating it entirely). Moreover, through the same mechanism it is plausible that a whole new set of individuals would also have their access to adequate eating experiences undermined by *Green Radicalism*. For every mutton-eating shepherd, there are conceivably several individuals whose access to adequate eating experiences rely on, for example, eating meat more than a handful of times a year or eating out of season oranges. As before, if such cases genuinely undermine individuals' access to adequate eating experiences they would constitute tragic conflicts and should be treated as such.

However, there are also a couple of reasons why eating experiences within a *Green Radicalism* regime might be improved. First, readers will recall my discussion of ethical gourmandism in relation to a Huel-only diet. In the case of *Green Radicalism*, individuals' eating experiences could be improved through knowing the processes that led to the creation of one's food are ethically-sound, while, in contrast to the *Sustainability Maximising* vision, retaining a large variety of flavour sensations. (It is worth noting that this applies to *Sustainable Development* and *Promethean Development* as well.). Indeed, in the real world many individuals – the Michael Pollans of the world – already choose to consume goods produced in a way that is aligned with the *Green Radicalism* vision. For these people, eating experiences are improved by the knowledge that their food is produced by, for example, local communities and using practices that allow the natural world to coexist with agriculture.

The second reason that *Green Radicalism* might improve eating experiences is that foodstuffs produced under its regime conceivably elicit 'better' taste sensations. It is widely claimed that locally-sourced, seasonal produce offers a distinctly better taste compared to much of the food available in the average Western-style diet. It is important to acknowledge that discussions on taste sensations are often subjective and influenced by personal preferences, and can inadvertently involve normative claims relating to, for instance, class or race. Nevertheless, there is some validity to the argument. There is undoubtedly a phenomenological distinction between the fresh, vibrant flavour of an in-season tomato and the mushy, dull flavour of one consumed out of season.

So, compared to *Sustainable Development* (and perhaps *Promethean Development*) it seems likely that *Green Radicalism* would initially undermine more individuals' access to adequate eating experiences. However, over the medium to long-term, as individuals adapt to the dietary changes, *Green Radicalism* could potentially improve eating experiences by promoting ethical sourcing, diverse flavours, and the consumption of high-quality, seasonal produce. (It is worth noting that the other visions might offer similar advantages. For instance, in a Promethean Development scenario, foodstuffs could conceivably be manufactured to not only replicate existing flavour sensations, but also offer entirely novel ones, thereby introducing a whole new set of eating experiences).

5. Conclusion

In this chapter, I argued that access to eating experiences of an adequate aesthetic quality is vital to individuals' basic wellbeing. As such, states ought to ensure that individuals have access to adequate eating experiences. However, this does not mean that diets must remain the same as they are today. In fact, in every vision of sustainable diet apart from *Sustainability Maximising*, I think it is likely that the vast majority of individuals would have access to a full range of eating experiences; from diurnal all the way up to sublime. A core lesson of this chapter is that the aesthetic quality of eating experiences is determined only in part by the actual foodstuff that is consumed. Since individuals' interpretations of flavour sensations are partly informed by their contexts, and since the aesthetic is subject-dependent, the aesthetic quality of eating experiences will often be determined just as much by the overall context in which food is consumed as the flavour sensations elicited by the food itself. Nonetheless, as we saw in my discussion of a Huel-only diet, some variety in flavour sensation is required. The reason I think *Sustainable Development*, *Promethean Development*, and *Green Radicalism* would be able to provide adequate eating experiences going forward is that each of these visions can provide a wide variety of foodstuffs and the flavour sensations that they elicit. The main exception identified is that of currently-existing people who are particularly accustomed to eating specific foodstuffs. However, this exception is only a concern over the medium-term, since new generations will be born into – and become accustomed to – new gustatory contexts (and those who grew up eating Western-style diets either become accustomed to new norms or pass away).

Chapter 5. Sustainable diets and dietary identities

In March 2023, Italy’s government approved a draft law that would ban various types of ‘synthetic’ meats from being produced within or imported to the country. This is an interesting case, since it is a direct response to one of the technologies at the heart of what I have called the *Promethean Development* vision of sustainable diets. Apparently, the main motivation behind the ban was to protect the existing agricultural sector. However, we can assume it was a popular move amongst non-farmers too; a 2023 poll of Italians found that 84% of respondents were opposed to ‘lab grown steak’ (Kington, 2023). A plausible reason for this widespread aversion is that Italians feel that such foods are misaligned with their *identities*. Indeed, the minister responsible for the bill framed it as a defence of Italian ‘culture’ and ‘tradition’ (Giuffrida, 2023). (In this chapter, I take ‘culture’ to be just one way among others that individuals express their identities).⁵⁸

The potential for tension between identities and the implementation of sustainable diets is often acknowledged by those promoting sustainable diets. For example, the influential 2019 report from EAT Lancet tries to anticipate possible concerns in this area by saying that more sustainable diets can be “tailored to preferences and cultures of different populations” (Willett *et al.*, 2019, p. 453). Nonetheless, some argue that identity has received insufficient attention in discussions around sustainable diets. For example, Diana Burnett *et al* argue that the EAT Lancet report should reframe the optimum diet from one that is ‘healthy’ to one that ‘nourishes’, the claim being that “cultural factors” can be just as important as nutritional ones (Burnett *et al.*, 2020, p. 1023). In this chapter, I explore how seriously we should take these concerns, by examining what I call ‘dietary identity’, by which I mean the part of individuals’ identities that is formed and maintained by what they eat, or by the practices associated with what they eat, like cooking techniques or agricultural methods. The basic question I set out to answer is: to what extent should individuals’ dietary identities feature in states’ considerations when they promote sustainable diets?

Liberal political theorists have long been preoccupied with questions relating to ‘multiculturalism’, the policy of assigning different rights and privileges to individuals according to their group memberships.⁵⁹ However, while Nussbaum herself has written quite extensively on the topic, she has not offered a full-fledged theory on it. So, in this chapter I draw upon the perspective of a different theorist; Kwame Appiah, specifically the approach he sets out in *The Ethics of Identity* (Appiah, 2005). To be clear, I do not wish to claim that Appiah’s theory is necessarily ‘the best’ framework for evaluating the relationship between the state and individuals’ social identities; neither in the sense that he proposes the most convincing normative case for it, nor that his theory is in the closest alignment with Nussbaum’s approach. (It may be that there are other theories that better fulfil one or

⁵⁸ Following Appiah, who pushes back against the reification of culture, I do not take culture to be necessarily any more valuable than any other expression of identity (Appiah, 2005, pp. 114–154).

⁵⁹ For a good overview, see (Kymlicka, 1995).

both of these criteria, although I have not come across them). However, I think that Appiah's theory is compatible with Nussbaum's capabilities approach, for three main reasons: 1) Like Nussbaum, Appiah is committed to a liberal, pluralistic conception of the good and this is central to his theory of identity; 2) Like Nussbaum, Appiah defends the value of social identities by appealing to individuals' autonomy, while also recognising the risk social identities pose to that same autonomy; 3) Like Nussbaum, Appiah believes the state has a legitimate role in mediating between social identities and the other priorities to which liberal states may be committed. As the chapter progresses, I return to these points, highlighting the ways in which Appiah and Nussbaum are aligned on the subject of social identities and state power.

The chapter is comprised of four sections. In section 1, I describe Appiah's account of social identities, explain his reasons for why they are valuable, and then introduce my notion of 'dietary identities'. In section 2, I discuss how Appiah thinks states ought to treat social identities. I begin by noting that states cannot hope to be neutral in their effects on identities, and briefly discuss how such neutrality would not even be compatible with the project of political liberalism. I then introduce Appiah's guiding principle when it comes to states' treatment of social identities: 'neutrality as equal respect'. In section 3, I explore the 'test' for 'neutrality as equal respect' that Appiah proposes, in the context of dietary identities. I argue that his test is at its most insightful when the counterfactual upon which it relies is appropriately similar to the actual case under examination. This leads me into a discussion about the characteristics that are relevant to constructing a 'balanced' counterfactual; I identify five such characteristics that are of relevance to dietary identities. Those characteristics are: policy importance; policy exemptability; substitutability; legitimacy; and pressingness. In section 4, I apply the resulting framework to the case of the Italy's synthetic meat ban. I argue that the Italian state could have permitted the proliferation of synthetic meat without violating Appiah's principle of equal respect. This suggests that in that particular instance, social identities did not provide legitimate grounds for a decision not to promote sustainable diets. However, I argue that cases that *do* provide such grounds are plausible, opening up the possibility of tragic conflicts between the state duty to promote sustainable diets on one hand and to respect individuals' dietary identities on the other.

Before proceeding, a quick note. In the previous two chapters, my focus has been on identifying how state promotion of sustainable diets might affect other duties states have. (Like, for instance, the duty to ensure citizens have access to adequate eating experiences). However, as will become clear, Appiah's approach to state policy with regards to social identities is a procedural one; it is not concerned with outcomes per se. For that reason, this chapter will do less to identify, for example, potential conflicts between dietary identities and sustainable diets, focusing instead on what it looks like for a state to deal with dietary identities in a procedurally just manner.

1. Social identities, their value, and dietary identities

Appiah identifies four characteristics of social identities (Appiah, 2005, pp. 66–69).⁶⁰ First, social identities have ‘criteria of ascription’; properties based on which individuals are classified as belonging to an identity or not. In order to be an ‘X’ – an arbitrary identity label – one has to fit a given set of classificatory criteria. Of course, these criteria are often contested, which can lead to debates and conflicting views on who should be included or excluded from a particular identity. For instance, one person might believe that an individual’s class position is to do with the occupations of their family, another might believe it is determined by their income or education level. Nonetheless, all social identities have criteria of ascription, whether their substance is disputed or not. According to Appiah though, merely exhibiting a set of classificatory characteristics does not automatically establish a social identity; if someone possesses a social identity as X, then identifying as X should also have some impact on how they lead their life. Thus, the second characteristic of social identities is that they play a significant role in individuals lives, providing individuals with “scripts... [i.e.] narratives that people can use in shaping their projects and in telling their life stories” (Appiah, 2005, p. 22). The lives of devout Christians, for example, are partially guided by their commitment to their faith; they go to Church, they say grace etc. The third characteristic is similar to the second, but relates to how social identities affect individuals’ behaviour *towards* the identity-holder. That is, individuals with a social identity have things done to them or for them because of identifying as X. Identity-informed treatment can come in the form of, for example, kindness from someone who shares your social identity, or unkindness from those who see you as having the wrong kind of identity. The fourth characteristic Appiah identifies is that there are norms of behaviour associated with any given social identity.⁶¹ Or, to put it in his terms, being an X means that there are things that individuals “ought and ought not to do” (Appiah, 2006, p. 17). For example, Jewish people ought not to eat shellfish, men ought to be stoic, and academics ought to publish their research. (To be clear, this is a ‘practical’ ought, not a moral one; the existence of a norm just amounts to the fact that it is widely thought and understood that those of X identity ought to abide by the norm in question).

According to Appiah’s account, a wide range of identities count as social identities. Race, ethnicity, and gender are all captured, but so too are, for example, professional identities and vocations. In a provocative example, Appiah argues that a person can both be and identify as a butler, receive treatment as such, and be bound by certain duties expected of butlers, meaning that, according to his account, ‘butler’ constitutes a social identity (Appiah, 2005, p. 10). Many affiliations, both formal and informal, will also give rise to social identities (e.g. heavy metal fan, trade union member, rose

⁶⁰ In the given citation, Appiah actually refers to ‘collective’ identity, but it is clear that he is referring to what he calls ‘social’ identity elsewhere (see Appiah, 2006). For the sake of clarity, I adopt the latter nomenclature throughout this chapter.

⁶¹ While he discusses this characteristic substantively in *The Ethics of Identity*, he does not *call* it a ‘characteristic’ until a later paper. For simplicity I give his later account (Appiah, 2006, p. 16).

gardener). Even interpersonal relationships will often count as social identities (for instance, brothers, boyfriends, and fathers all have norms that they should follow because of their respective relational identities). Such an expansive account might lead some to wonder if his account is too inclusive. For Appiah though, the inclusiveness of his account is a strength. To see why, we first need to understand the reasons he understands social identities to be valuable in the first place, of which he provides two.

First, Appiah argues that social identities create bonds of solidarity. He argues solidarity has “universal value”, although how that value practically manifests varies depending on the social identity in question (Appiah, 2005, p. 24). For instance, the solidarity a member of a football club has with other members might manifest in offers of lift sharing and support during matches, while the solidarity of individuals belonging to an ethnic community might lead to collective efforts to address systemic discrimination and advocate for social justice. It is worth noting that Nussbaum appears to agree with Appiah on the value of solidarity, arguing that “Being able to live with and toward others, to recognize and show concern for other humans” is a core feature of a minimally dignified life (Nussbaum, 2000, p. 79).

Second, Appiah argues that social identities help guide individuals through their lives. He observes that all humans have a great number of (morally permissible) options when it comes to how they will lead their lives. Of course, all of us face constraints due to, for instance, historical and physical circumstances (I lack the qualification of an astronaut and the genes of a professional swimmer). But even with these constraints, all individuals have some options with regards to how they lead their lives (some have many more options than others; more on this in the next section). The question, then, is how should we choose to lead our lives? Should I commit myself to a life of adventure and become a mountain guide, a life of scholarly activities as an academic, or a life of pious reflections as a monk? Due to particular features of my personality it might be that I am particularly suited to one of these lives – and I should not be forced into any of them (again, more on this shortly) – but all things being equal no one option is obviously preferable; I could lead an equally good life pursuing any of them. This is where social identities enter; according to Appiah they help individuals to structure their way through their lives and make sense of the decisions they are faced with, and this a reason to value them (Appiah, 2005, p. 24). Nussbaum appears to agree with Appiah on this too: “To plan for one’s own life without being able to do so in complex forms of discourse, concern, and reciprocity with other human beings is... to behave in an incompletely human way” (Nussbaum, 2000, p. 82).

For these two reasons Appiah argues that social identities are a core element of human wellbeing, at one point concluding they are “at the heart of human life” (Appiah, 2005, p. 26). Nonetheless, there exists a potential conflict between social identities and the political liberalism embraced by Appiah (as well as Nussbaum), which emphasises the value of individual freedom to shape their own lives and pursue their personal visions of the good. After all, how can individuals be the sole authors of their life if they are following ‘social scripts’ not written by themselves? To this concern, Appiah argues that (some) social identities are not only consistent with individual autonomy, they are

necessary for it. This is because, as he puts it, “individuality presupposes sociability... a free self is a human self, and we are... social beings” (Appiah, 2005, p. 20). In other words, the idea that humans can lead good lives in isolation from social interaction or connection runs counter to a fundamental aspect of human nature, which is that our well-being is inherently connected to our social relationships. As Appiah says, “Liberals realise that we need other people: respect for individuality is not an endorsement of individualism” (Appiah, 2006, p. 18).

However, the fact that social identities are a necessary part of dignified human lives does not mean that it is acceptable for individuals to have no choice with regards to them. Therefore, Appiah argues that individuals ought to have an adequately broad set of social identities available to them since; in Millian terms, different people require different conditions in order to cultivate their ‘higher nature’. This leads us back to why he views the expansiveness of his account of social identity as a strength. According to him, “identities are so diverse and extensive because... people need an enormous array of tools in making a life” (Appiah, 2006, p. 19). This is at once a practical description of *why* there are so many social identities, and a normative justification for why the existence of so many social identities is necessary; they allow individuals the freedom and opportunity to pursue lives that align with their personal values and aspirations. Of course, some social identities do constrain individuals’ freedoms in ways that are unacceptable to liberals, a point I will return to in the next section. First though, I want to introduce the notion of ‘dietary identities’.

As we have seen, one way social identities manifest is that individuals comport themselves according to them, and others treat them accordingly. So there is psychological dimension to social identities; they are partly about the beliefs of identity-bearers and identity-beholders. But because we are embodied creatures living in a physical world, there are also practical, material dimensions to social identities; identities are shaped and maintained by contextual factors and the availability of resources that influence how individuals interact with the world in specific ways. (For example, the existence of modern medicine and all the technologies that enable it are necessary prerequisites for individuals to become ‘surgeons’, at least as we think of them in the contemporary sense). Without the continued availability and presence of various physical objects and contexts, identities may be degraded, or even disappear entirely. (How long could a surgeon maintain their identity without access to scalpels or antibiotics?) It is for this reason that *diets* inform the construction of identities and feature in their maintenance. Some social identities, such as ‘vegetarian’ and ‘vegan’, are built entirely around the consumption of specific diets. More often though, diets are just one constituent part of social identities; for instance, religious social identities often entail adhering to specific dietary restrictions or preferences. Individuals’ food choices can also have an expressive function with regards to their social identities; they reinforce the eater’s own conception of themselves, while sometimes conveying their social identity to those around them. (For instance, on seeing someone ordering oysters accompanied by champagne, we can make a fairly safe assumption about their class position). In this chapter, I refer to the dimensions of identity that are associated with individuals’ diets as ‘dietary identity’. So, to what

extent should individuals' dietary identities feature in states considerations when they promote sustainable diets? To answer that question, next I discuss Appiah's prescription for how states should act in relation to social identities.

2. The state and social identities: 'neutrality as equal respect'

What are the duties of the state with regards to dietary identities? In answering this question, it is important to first recognise that, as Appiah says, a state "cannot be neutral in its effects; necessarily, many state acts will have differential impacts on people of different identities" (Appiah, 2005, p. 88). This is surely true, as we will see when I discuss how the promotion of sustainable diets affects social identities in section three of this chapter. But for Appiah – and, indeed, Nussbaum – the fact that liberal states cannot be neutral in their treatment of social identities is a core pillar of liberal societies, because some social identities conflict with liberalism's commitment to individual autonomy (Appiah, 2005, pp. 88–99). So, even if it were possible to enact policies with neutral effects, states ought not to; doing so would compromise the principles that underpin liberal societies. For example, the liberal commitment to granting equal access to education conflicts with any social identities that believe education should be granted differentially according to ethnicity or gender.

So, within a liberal state there are limits to what is considered to be an acceptable social identity. For the sake of argument, let us say that those limits are demarcated by Nussbaum's central capabilities, which, after all, ultimately aim to provide the social, political, and material contexts within which individuals can develop their individualities and lead minimally dignified lives. If the policies that states implement are in service of – or at least consistent with – the provision of these central capabilities, then any social identities that are undermined by such policies are therefore incompatible with the vision of a liberal society that I have embraced. Obviously, this entails curtailing social identities that are characterised by their opposition to others' capabilities. For example, the identity of a violent white nationalist would not be tolerated within a liberal society, for it is an identity premised in the undermining of others' capabilities. But it will also affect social identities that infringe to an unacceptable degree on the capabilities of the identity holders themselves. For example, a liberal state ought not accommodate social identities that curtails female access to education. This is, of course, a patriarchal perspective that insists on evaluating individuals' subjective preferences against an objective account of wellbeing. It is acceptable because, as Nussbaum says, preferences with regards to social identities can be "deformed by ignorance, malice, injustice, and blind habit" (Nussbaum, 2000, p. 114). As Appiah says, when individuals are deemed to be 'unreasonable' the state can sometimes legitimately coerce them "into doing what is best for them" (Appiah, 2005, p. 93). The curtailing of identities in this way would, of course, affect some social identities more than others, but this is – to emphasise – not merely an acceptable side-effect, but a *core objective* of a properly organised liberal state. (Appiah even goes as far to say that states have a role in 'soul making', at least to the extent that citizens ought to be educated so that they accept liberal democratic norms).

Notwithstanding all this, it is important to note that Nussbaum's list of central capabilities presents a relatively *thin* conception of the good, and so individuals living within a state guided by those principles would still be permitted to adopt an extremely wide array of social identities in pursuing their own conceptions of the good. Indeed, Nussbaum is strident in her support for a plurality of social identities within liberal societies. For example, in a response to Susan Okin's *Is Multiculturalism Bad for Women?* – which explores the tensions between cultural relativism and women's equality – she argues that Okin understates the intrinsic value of religion to individuals' ability to search for their own version of the good, concluding that religious freedom is “one of the liberties that is most deserving of protection by a liberal states” (Nussbaum, 1999). Appiah, for the reasons I set out in the last section, is also committed to pluralism when it comes to social identities.

So, how should liberal states treat (permissible) social identities? According to Appiah: “governmental action, including but by no means limited to legislation, should not exhibit partiality toward some subgroup of the nation; put affirmatively, then, states should be neutral among identities” (Appiah, 2005, p. 88). Accordingly, he argues that states should pursue a policy of ‘neutrality as equal respect’ towards social identities (Appiah, 2005, p. 92). He proposes a test for whether or not ‘neutrality as equal respect’ has been adhered to: “where an act disadvantages people of identity L, they can reasonably ask whether they could have been treated better and whether they would have been, had they not been regarded as Ls” (Appiah, 2005, p. 91). If the answer to this question is ‘yes’ then the act has not treated the identity holders in question with ‘neutrality as equal respect’. For example, if a nation were to pass a law granting tax breaks exclusively to individuals in Christian marriages, while excluding those in marriages linked to other religions, individuals in non-Christian marriages would rightfully argue that they would have received better treatment had they not been regarded as non-Christian.

It is worth highlighting that the test specifies that individuals should not be disadvantaged due to being *regarded* as an L, rather than *being* an L. This is because, as stated at the start of this section, governments are often faced with decisions about how to organise societies that will *inevitably* disadvantage some identity groups more than others. So, it ought not be the fact of unequal disadvantage that violates ‘neutrality as equal respect’, but rather being disadvantaged due to one's social identity being given unequal respect from the state. For example, weekend shift workers are disadvantaged by the fact that their friends and family are often working on their days off, leaving them with fewer options to socialise; their *being* a weekend shift worker leads to them to be disadvantaged. But they are not disadvantaged due to their being *regarded* as a weekend shift worker; societies have simply decided that the conventional Monday to Friday working pattern is the most convenient for the greatest number of people. Of course, this example is a ‘mere’ coordination problem and therefore not particularly contentious; most weekend workers accept that a system of, for instance, the weekend moving forward a day every week would be too impractical to implement. What about social identities where the disadvantage of a policy is felt more keenly by the identity holder, or where they do not agree with the state's reasons for implementing it? I will address this type of question in the next section, in which I

move on to discussing how the promotion of sustainable diets might affect dietary identities, and what this ought to mean with regards to states' actions.

Earlier, I called the dimensions of identity that are associated with or reliant upon individuals' diets 'dietary identities'. Clearly, the state promotion of sustainable diets would substantially affect many individuals' dietary identities due to, for example, changing food availability and agricultural practices. The question is, does doing so violate states' duty to treat social – and thus dietary – identities with 'neutrality as equal respect'? That is the question I move to answer in the next section.

3. Neutrality as equal respect

I begin this section by introducing an example of a dietary identity under threat from state policy that can be understood to be promoting a *Sustainable Development* vision of sustainable diets. I then explore what it would mean for that policy to be consistent with 'neutrality as equal respect'. I argue that the Appiah's test (described above) hinges on a hypothetical counterfactual that is only insightful if it represents a comparison that is 'balanced' with the actual case under examination. For the rest of this section I discuss what it means for the counterfactual to be balanced, identifying five characteristics that must be comparable to the actual case under evaluation.

The Ojibwe are an Anishinaabe people of Canada and the USA. According to the oral tradition, they originally travelled to the Great Lakes region due to a prophesy that predicted 'a place where food grows on water'. This food was 'manoomin', wild rice in Anishinaabe language. Manoomin is core to the Ojibwe people's social identity, having served as a staple food and sacred resource for over two hundred years (Bouayad, 2020, p. 27). It is therefore, in my terms, central to their dietary identity. As American settlement in the region progressed during the 19th century, Ojibwe bands in Minnesota found themselves engaged in a series of political and legal conflicts concerning this Manoomin. Much of this conflict has related to their right to access the resource, which is located on ceded territory.⁶² Most relevant to this chapter, however, is a more recent conflict the Ojibwe have been engaged in, one relating to the patenting and genetic modification of wild rice. Through the 20th Century, efforts were made – by the US Department of Agriculture and various academic institutions – to develop and sometimes even introduce domesticated wild rice to the Great Lakes region, with the aim being to increase production in order to compete with other rice growing regions in the country. These interventions caused tension with Ojibwe bands, who continue to rely on traditional methods to manage and harvest wild rice. Then, in the early 2000s, universities initiated the filing of patents for genetically engineered varieties, leading to concerns that these novel strains could potentially cross-pollinate with their wild counterparts, fundamentally altering the wild rice ecosystem. The Ojibwe resistance to the scientific research and private ownership of wild rice echoes the disputes regarding the techniques and

⁶² This was resolved in 1997, when the US Supreme Court ruled that the bands never relinquished their usufructuary rights to the resource (Bouayad, 2020, p. 31).

practices associated with the Green Revolution and, more recently, sustainable intensification. Indeed, their resistance has been characterised explicitly as a stance against the ‘wild rice Green Revolution’ (Bouayad, 2020, p. 33). Therefore, it provides an interesting case study of how a dietary identity may be impacted by the promotion of sustainable diets, specifically diets that are aligned with what I have called the *Sustainable Development* vision.

If the new crop strains were introduced – thereby undermining Ojibwe dietary identities – would this be a violation of Appiah’s principle of ‘neutrality as equal respect’? It turns out that some work needs to be done before we answer this question. Recall; when testing whether policy interventions that disadvantage people of X identity abide by ‘neutrality as equal respect’, the question to answer is whether they would have been treated better if they were not regarded as X. So, here we should ask: would a policy of introducing new crop strains have been implemented differently had the Ojibwe not been Ojibwe? As Appiah himself notes though, when we attempt to answer questions like this we are immediately faced with a decision about which counterfactual we are supposed to be evaluating. One aspect of this relates to what it means to ‘not be regarded as X’. According to Appiah, “we naturally explore [the] issue by asking how [an X] would have been treated not if he had been just [a not-X] but if he had been *something else specifically*” (Appiah, 2005, p. 97, my emphasis). I agree; the relevant question here is not whether the Ojibwe would have been treated better if they were ‘not-Ojibwe’, but rather: would they have been treated better if they were some other identity? For example: would a policy of introducing new crop strains be implemented if the Ojibwe were instead the Christian majority?⁶³ But this formulation of the counterfactual is still not quite right. After all, of course the Christian majority would have no issues with the introduction of new crop strains; their dietary identities are not under threat from such a policy.

So what is the counterfactual we need to evaluate? Here I depart from Appiah in substance (but, I believe, not in spirit) by suggesting the following alternative to his test: where a policy disadvantages people of X identity, they can reasonably ask whether they could have been treated better and whether they would have been, if they had been regarded as a dietary identity that is different but comparable to X identity and they were affected by a policy that is different but comparable to the actual policy affecting X identity. Or, inserting the present example gives us: where an act disadvantages the Ojibwe, they can reasonably ask whether they could have been treated better and whether they would have been, if they had been regarded as a dietary identity that is different but comparable to their Ojibwe identity

⁶³ Actually, I suspect a compelling case can be constructed that suggests that the most pertinent social identity for comparison is what could be termed a ‘Western’ social identity, an identity that tends to prioritise principles like intellectual property law and the patentability of ‘products of nature’; the Ojibwe’s opposition to scientific research and private ownership of wild rice is rooted in their rejection of these principles. Arguably, this Western social identity holds a paradigmatic position in liberal states and deeply influences policy formulation, often being perceived as ‘common sense’ rather than a distinct social identity. However, the exploration of the extent to which these ‘Western values’ constitute a social identity falls beyond the scope of this discussion.

and they were affected by an act that is different but comparable to the actual policy affecting their Ojibwe identity.

I want to make two clarifications about the above formulation. First, by a dietary identity that is ‘different but comparable to X identity’, I mean to describe a counterfactual dietary identity that is similar in all relevant respects to the one being evaluated. This formulation is necessary because the particulars of the dietary identities make a substantive difference to how states ought to act with regards to them. For example, if the dietary identity in the counterfactual is only of trivial importance to the counterfactual identity-holders, then the state should treat it differently to how it treats dietary identities that are very important, like the Ojibwe’s dietary identity that relies on access to Manoomin. Second, by ‘a policy that is different but comparable to the actual policy affecting X identity, I mean to describe a counterfactual policy that affects the counterfactual dietary identity in a way that is similar in all relevant respects to the policy that is actually being evaluated. Again, it is necessary that the counterfactual dietary-identity-affecting policy is comparable to the one we are assessing because otherwise we are not comparing like with like. For example, imagine if the sustainability goals of the policy affecting the Ojibwe dietary identity could be achieved through implementing an alternative policy, while those affecting the counterfactual dietary identity could not. Failing to account for this would lead us to incorrectly judge that the Ojibwe dietary identity was being treated with ‘neutrality as equal respect’ (assuming that the state would indeed choose the alternative policy option, if only it were available, in order to avoid undermining a different dietary identity).

My formulation – with its ‘balanced’ counterfactual – better propels us towards our aim: detecting any problematic differential in the treatment of the Ojibwe's dietary identities that can be attributed to their being regarded as Ojibwe. We can say that differential treatment is present if the comparable policy would be implemented differently if it affected a comparable counterfactual dietary identity in a comparable way. However, actually-existing counterfactuals will rarely, if ever, be sufficiently similar to any case we wish to evaluate. So, in order to carry out our evaluation, we must construct our own counterfactuals that *are* sufficiently similar. This then leads us to the crucial question in undertaking this analysis: *what are the characteristics of dietary-identity-affecting policies and dietary identities that are of relevance when evaluating related state action?* I have already alluded to a couple of these characteristics in my examples above, when I noted that dietary identities can vary in the importance they hold for identity-holders, and that some dietary-identity-affecting policies might be more necessary than others. For the rest of this section, I explore the relevant characteristics that are at the root of those examples, as well as some other characteristics that I have not yet touched on. This exploration, I think, gets us to the heart of how states ought to treat dietary identities when promoting sustainable diets.⁶⁴

⁶⁴ Indeed, the characteristics I list may well hold equal relevance to how states ought to treat social identities *in general* when implementing *any* policy, but for the sake of clarity I will remain focussed on the specific dynamic between dietary identities and the promotion of sustainable diets

The first relevant characteristic – which I call ‘policy importance’ – relates to how important the outcomes associated with the dietary-identity-affecting policy are deemed to be. For example, if the policy of introducing a new rice crop was essential for ensuring food security to the surrounding population, this would equate to a high level of policy importance. On the other hand, if the policy was mainly about satisfying the curiosity of plant scientists, this would correspond to a lower degree of policy importance. All other things being equal, the higher the policy importance of dietary-identity-affecting state action, the more likely that they ought to take priority over individuals’ dietary identities. For the sake of argument, we can assume that all the dietary-identity-affecting policies introduced for the sake of promoting sustainable diets have a high level of policy importance, since, as I argued earlier in the thesis, making diets more sustainable ought to be a key priority for all states.

The second relevant characteristic – ‘policy exemptability’ – relates to the extent to which it would be possible to carve out an exception for the given dietary identity – thereby ‘exempting’ it from being affected by the policy in question – given the relevant societal and practical limitations. If it is possible to exempt the social identity from the effects of the dietary-identity-affecting policy being evaluated, then this should feature in the state’s decision making process; all things being equal, the easier it is to exempt a social group from being affected, the more acceptable the policy becomes. In the event, something like this actually occurred in Minnesota with regards to Manoomin; legislation was passed that limited the release of genetically engineered wild rice, as well as obliging anybody who wants to do so to carry out an impact assessment on the potential threat to wild rice. This is widely understood to have halted all development of genetically modified wild rice in the region (Bouayad, 2020, p. 34). (I take this to be an ‘exemption’ rather than just an example of one dietary identity winning out over another because I believe the genetic modification of wild rice in other regions of the USA continues unabated). Of course, the practicability of exempting dietary identities will vary a lot from case to case, so in the end the feasibility of accommodating these exemptions will bear relevance to states’ actions; it might be that sometimes the granting of exemptions is just too burdensome on state apparatus, or on the rest of society. This means that, all things being equal, exemptions are more likely to be granted to the dietary identities that are associated with social groups that are well represented within societies. Put differently, carving out exceptions for particularly niche dietary identities would require stronger justifications than more mainstream ones.

Somewhat related to policy exempt-ability, the third relevant characteristic – ‘substitutability’ – relates to the extent to which the food or practice linked to dietary identity in question can be replaced with an alternative without compromising that dietary identity. For the Ojibwe people, Manoomin is not substitutable at all. As Norman Dechampe, a former Chippewa Tribal President, commented with regards to a former treaty agreement: “We were not promised just any wild rice; that promise could be kept by delivering sacks of grain to our members each year. We were promised the rice that grew in the waters of our people, and all the value that rice holds” (see Andow *et al.*, 2009, p. 3). But when it comes to dietary identities this is, I think, relatively unusual. Dietary identities tend to undergo shifts as they

pass from person to person, from generation to generation, contingent upon the geographical locations and circumstances experienced by the individuals holding the identities. Again, all things being equal, the more substitutable the material requirements for dietary identities are, the more acceptable the dietary-affecting policy becomes.

The fourth relevant characteristic relates the extent to which the dietary identity in question is ‘legitimate’. All things being equal, the more legitimate a dietary identity is, the more seriously states should treat the possibility of implementing policies that undermine it. I do not have time to provide a full account of what makes dietary identities legitimate, so here I limit myself to sketching out two factors that are relevant when judging their legitimacy. First, individuals should properly identify with the social identity of which their dietary identity is a constitutive part. Of course, there are various ways individuals come to identify as social identities. According to Iris Marjan Young, for example, individuals can actively decide to become a member of a social group; as born-again Christians or punk rockers do. Or they can “[find themselves] as a member of a group, which they [experience] as always having been”, as is often the case with the social identities associated with individuals’ ethnic traits (Young, 2004, p. 43). It is surely the case that the way in which individuals come to identify with their social identities affects their legitimacy, but again I lack the space to fully discuss that here. But the core idea is that whichever way individuals come to identify with their dietary identities, an important aspect is whether or not their stated dietary identity is an *honest representation* of what they take to be their true identity.⁶⁵ For instance, if I falsely claim to be a Muslim, the state would not owe me respect with regards to any requests I might make for the provision of Halal food. The second factor that is relevant to ascertaining the legitimacy of dietary identities relates to the circumstances that led to the formation of the dietary identities in question, as well as the circumstances that allow them to persist. Here I am thinking about the fact that some dietary identities are formed in conditions of injustice, and that this might affect the extent to which they can be viewed as legitimate. For example, the dietary identity of the North American rancher is founded in the expropriation of land and resources from indigenous communities. It seems plausible to me that this history means the dietary identity of the modern cattleman could be less legitimate than the dietary identity of the Ojibwe.

The fifth and final characteristic, ‘pressingness’, relates to how important the dietary identity in question is to the identity holder. A dietary identity is more pressing the more intertwined it is with the identity holder’s core beliefs and ability to lead their life in a way that is consistent with their sense of self. As I highlighted at the start of this section, manoomin plays a key role in the lives of the Ojibwe people, being employed in ceremonies and spiritual observances, as well as serving as a staple food. In comparison, my morning coffee is hardly pressing at all; it has almost no bearing on how I perceive my

⁶⁵ Here I draw on Hilde Lindemann’s account of legitimate social identities. She argues that individuals ought not “[perform] an identity to which [they are not] entitled” (Lindemann, 2014, p. 105).

identity or how I navigate through my life. As with legitimacy, all things being equal the more pressing a dietary identity is, the more cautious states ought to be about implementing policies that undermine it.

I shall briefly summarise. Recall, that my formulation of Appiah's counterfactual for testing whether a policy is consistent with 'neutrality as equal respect' was as follows: where a policy disadvantages people of X identity, they can reasonably ask whether they could have been treated better and whether they would have been, if they had been regarded as a dietary identity that is different but comparable to X identity and they were affected by a policy that is different but comparable to the actual policy affecting X identity. In the last five paragraphs, I explained some of the relevant ways that the counterfactual should be comparable to the one being evaluated: the counterfactual policy should be of comparable *policy importance*; the counterfactual policy should be comparable in *policy exemptability*; the counterfactual policy should be comparably *substitutable*; the counterfactual dietary identity should be comparably *legitimate*; the counterfactual dietary identity should be comparably *pressing*.

4. Balancing dietary identities and sustainable diets

I opened this chapter by describing recent legislation introduced in Italy that aims to ban the production and sale of synthetically produced meat products, noting that this could be interpreted as a part-rejection of the *Promethean Development* vision of sustainable diets. In this final section, I apply the framework I just described in section 3 to that issue, arguing that, on balance, the introduction of synthetic meats would not have violated the principle of 'neutrality as equal respect' as it relates to the Italian public. Then, at the end of the section, I return to the case of the Ojibwe Manoomin dietary identity, arguing that if the state had allowed the introduction of GMO rice this *would* have violated the principle of 'neutrality as equal respect' as it relates to the Ojibwe people.

To start out, it is important to be clear about what it is precisely we are investigating. At the point we encounter the example, the Italian government has already taken a stance on the issue of synthetic meat; its stated justification for the ban is, in my terms, that it wants to protect the dietary identities of Italian citizens. We are interested in whether that justification is convincing. Therefore, the policy we want to evaluate is not the policy of banning synthetic meat, but rather that of allowing the proliferation of synthetic meats. Specifically, we want to know if, had it been allowed to continue, that policy would have violated the principle of 'neutrality as equal respect'. If it does, then this would give us a good reason to think that the Italian state acted correctly in implementing the ban.

For a diet-affecting policy to violate 'neutrality as equal respect', it must disadvantage the dietary identity of at least one social group. So, which dietary identity is disadvantaged by a policy to allow the proliferation of synthetic meat within Italy? The Italian government's assertion seems to be that it is *Italian citizens'* dietary identities that would be disadvantaged. I am somewhat dubious about whether such a large social group, which presumably contains an extremely wide range of different identity-related dietary commitments, can coherently be said to be disadvantaged by the proliferation of synthetic meats. But for the sake of argument let us say that Italian citizens are generally suspicious

of this method of meat production, and that it is part of their dietary identity that the meat they eat is produced conventionally. They would, therefore, be disadvantaged by a policy allowing the proliferation of synthetic meat.

To evaluate whether such a policy violates the principle of ‘neutrality as equal respect’, we should ask: where a policy disadvantages the Italian peoples’ dietary identity, they can reasonably ask whether they could have been treated better and whether they would have been, if they had been regarded as a dietary identity that is different but comparable to the Italian dietary identity and they were affected by a policy that is different but comparable to the actual policy affecting the Italian dietary identity. To construct the counterfactual implicit in this question, we should assess the case in question against the relevant characteristics that I identified in the last section. 1) *Policy importance*. If we take the promotion of sustainable diets to be an important state goal, then it follows that the policy of allowing the proliferation of synthetic meat should be judged to be of high policy importance. The state therefore has a strong impetus to introduce the policy. (Assuming, for the sake of argument, that a broader policy of promoting the *Promethean Development* vision of sustainable diets has been adopted). 2) *Policy exemptability*. Given that the policy disadvantages the entire Italian population, there is limited scope for exempting the affected social group from its effects; the policy simply has too wide an effect. (Of course, in reality some conventional animal rearing operations could be potentially be maintained in order to cater to the social identities that are most affected). 3) *Substitutability*. If we understand the Italian dietary identity to rely on its meat being produced conventionally, then the effects of the policy cannot be achieved through substitution; the dietary-identity-undermining aspect of the policy *is* the proliferation of a new production regime. (It would be a different story if we understood the Italian’s dietary identity to be about *eating* meat, with its origin being irrelevant). 4) *Legitimacy*. Without entering into a historical and social analysis of Italian agricultural production and meat eating, it is hard to assess how legitimate the dietary identity is, but for the sake of argument, let us simply say that a dietary identity based in the availability of conventionally produced meat is not immediately illegitimate. 5) *Pressingness*. For similar reasons, it is hard to say how important continuing with conventional farming of meat is to Italians’ dietary identities. The poll I cited at the start of this chapter might seem to imply that avoiding the proliferation of synthetic meat is a pressing matter for Italian citizens’ dietary identities. But much more work would need to be done to evaluate whether or not fundamental to Italian dietary identity, or a relatively superficial facet of it. For the sake of argument let us just say it is ‘quite’ pressing.

So, a comparable counterfactual would comprise of: 1) A policy that is highly important to implement; 2) A policy that it is not possible to create exemptions for, meaning there is no ‘easy’ solution to reach for; 3) A policy that is not substitutable for another policy, meaning that the issue cannot be sidestepped; 4) A dietary identity that is not immediately legitimate; 5) A dietary identity that is ‘quite’ pressing. Looking at this – admittedly highly abstract – counterfactual, it seems to me that implementing such a policy would be a reasonable course of action. Therefore, if the Italian state *had*

allowed the proliferation of synthetic meats, this would not have violated the principle of ‘neutrality as equal respect’; the Italian citizens would not have been treated any better had they had another comparable dietary identity. So, in this case, the demands of sustainability *were* aligned with the Italian state acting in a neutral manner towards the Italian public’s dietary identity.

However, we need only consider the case of Manoomin rice to see that promoting sustainable diets can sometimes violate the principle of ‘neutrality as equal respect’. There are two key differences between the case of the Manoomin rice and that of synthetic meat in Italy. First, as I highlighted above, the part of the Ojibwe dietary identity that relies on access to Manoomin can be relatively easily exempted from the effects of promoting a *Sustainable Development* vision. This means that promoting the *Sustainable Development* vision of sustainable diets can be made compatible with the Ojibwe dietary identity in a way that contrasts with the promotion of *Promethean Development* in the Italian context (which, recall, is unavoidably incompatible with the Italian dietary identity). Second, the part of the Ojibwe dietary identity that relies on access to Manoomin is, at least I have assumed, much more pressing than the part of the Italian dietary identity that relies on preventing the proliferation of synthetic meat. Therefore, the state owes the Ojibwe much more consideration when it comes to the effects of promoting sustainable diets. Together, I think these two differences mean that the Ojibwe people could reasonably claim that if another comparable dietary identity was affected in a comparable way, the holders of that dietary identity would be treated better by the state. Therefore, if the state pushed forward with a policy of introducing new rice crops without exempting the Ojibwe dietary identity, this would represent a violation of the principle of equal respect.

Before I close, for the sake of clarity it is worth noting that the procedural account gives us no help in identifying tragic conflicts. This is because the only thing that matters is whether or not the state abides by the principle of ‘neutrality as equal respect’. To illustrate, imagine a situation where the dietary identity in question is both legitimately held and very pressing, but *cannot* be exempted from the policy promoting sustainable diets, nor can the effects of the policy be achieved via substitution. Such a situation would arise if it was decided a *Sustainable Development* vision ought to be implemented, but the part of the Ojibwe dietary identity that relies on access to Manoomin could not be exempted from the effects of promoting such a vision (perhaps the GMO seeds will inevitably spread across the US, undermining the Minnesota ban). Depending on how important access to Manoomin is to the Ojibwe people’s ability to live dignified lives, this example may constitute a tragic conflict. However, the state could promote *Sustainable Development*, thereby undermining the Ojibwe dietary identity, without violating the principle of ‘neutrality as equal respect’, because, I think, we can reasonably say that it would not have treated a comparable dietary identity any differently.

5. Conclusion

In this chapter I argued that individuals' (permissible) social identities – of which their dietary identities are an important part – are of important value and are worthy of (conditional) accommodation from the state. However, states need not treat dietary identities as sacrosanct; other priorities – including the promotion of sustainable diets – can sometimes legitimately override them. However, when states implement policies that affect dietary identities, it is important that they do so in a manner that does not violate what Appiah calls the principle of 'neutrality as equal respect'. In other words, states should be unbiased in their treatment of dietary identities. A way to evaluate whether the principle of 'neutrality as equal respect' is being abided by is to ask whether the state would have treated a counterfactual dietary identity differently to the actual dietary identity under examination. I argued that for this test to give an accurate insight into whether or not the principle of 'neutrality as equal respect' is being abided by, the proposed counterfactual should be comparable to the actual case under examination. To this end, I identified five characteristics across which the counterfactual dietary identity ought to be comparable to the actual dietary identity, to help with making a judgement about whether or not the dietary identity under examination is being treated neutrally by the state. The counterfactual policy should be: of comparable policy importance; comparable in policy exemptability; comparably substitutable; comparably legitimate; and comparably pressing. Finally, I applied my framework to two dietary-identity-affecting policies associated with two visions of sustainable diets, demonstrating that such policies can be both consistent

So, let us return to my opening question: to what extent should individuals' dietary identities feature in states' considerations when they promote sustainable diets? The answer is that states should take seriously individuals' dietary identities and make allowances for them if it is feasible to do so. The more important individuals' dietary identities are to their ability to live dignified lives, the more states should do to avoid implementing diet-affecting policies that would undermine that dignity. Sometimes, however, dietary identities may need to be undermined in order to promote sustainable diets. That is permissible, as long as states do so in a manner that is consistent with the principle of 'neutrality as equal respect'. Deciding whether or not that principle has been violated requires a careful examination of the specifics of each case, in order to establish that the affected identity-holder would not have been treated differently had they held a different – but crucially *comparable* – identity.

Chapter 6. State action and sustainable diets

In 2019, Leo Varadkar, Taoiseach of Ireland, found his re-election campaign disrupted by chants of ‘Where’s the beef, ye vegan?!’ (McQuinn, 2019). Stemming from comments he had made regarding changing his behaviour in the face of climate change, rumours were circulating that he secretly followed a plant-based diet. Those rumours wielded by cattle farmers, protesting low beef prices and a supposed shortage of state support. Eventually Varadkar was forced to confirm his status as an omnivore, a process that involved televised sausage buying and a statement assuring the public he was merely trying to eat less red meat, not give it up. While we can only guess whether this qualification appeased the electorate, we can be certain that interventions in citizens’ diets on behalf of the environment can prove politically toxic. (In another recent example, current US president Biden was falsely accused of planning a ‘burger ban’ in his 2021 election campaign).

Yet even in the face of potential backlash, some states *are* implementing policies to promote more sustainable diets. Canada recently introduced new dietary guidelines advising the public to obtain the majority of its dietary protein from plant-based sources (Bolotnikova, 2022). Denmark has created a 5-year, \$90 million fund to support farmers who produce plant-based food (De Lorenzo, 2021). Both cite the reduction of environmental impact as one reason for these actions. Simultaneously, calls grow louder from campaigners and environmental scientists demanding that states introduce “decisive policies” to promote more sustainable diets (Carrington, 2021). Such calls do not emanate from only food and environmental campaigners. For instance, in 2021 a government-commissioned National Food Strategy for England set a target for a thirty percent reduction in meat consumption over the following ten years (Dimpleby, 2021, p. 11).

This chapter is composed of two sections. In the first, I explore the actions that are available to states when promoting sustainable diets. Then, in the second section, I provide three principles state actors should bear in mind when making policy in this area.

1. A taxonomy of state interventions to promote sustainable diets

The guiding question of this thesis has been: should states promote sustainable diets? This question, however, frames the topic in a potentially misleading way; by asking if states *should* promote sustainable diets, the question could be taken to mean that states currently stand as neutral actors in relation to the diets of their citizens. This is untrue; historically states have played an important role in shaping the diets of their citizens, and they continue to do so today, either through active policy interventions, by ceding power to various actors within the global food system, or by permitting actors and modes of production to operate in various ways. In this section, I explore the ways in which states have power to promote sustainable diets.

Before I do so, it should be recognised that states do not and have never had *absolute* power over the diets of their citizens, let alone the environmental effects associated with those diets.⁶⁶ For one thing, the origins of modern diets can be traced back to well before the establishment of the modern states. Indeed, there is reason to believe that the transition from food gathering and hunting towards organised agriculture, along with the surpluses they facilitated, played a pivotal role in the formation of the modern, coercive state (Scott, 2017). Moreover, social, material, and technological conditions shape diets in ways that may constrain states from fully dictating the development of diets. To give a fascinating example, studies of the English agricultural revolution in the 18th century have shown that an increased focus on the production of livestock was instrumental to increases in general agricultural productivity, which in turn allowed the country to shift from a largely agrarian economy to an industrial one. In other words, a shift to a diet containing more meat was, it seems, a necessary antecedent for the transition to the modern industrial era (see Overton, 1996b; Broadberry *et al.*, 2015). While this does not mean that societies could not shift away from meat-heavy diets today (with the help of modern agriculture technologies and more productive methods of social organisation) it does mean that the production of animals is deeply embedded within almost all aspects of the contemporary food system.

Nevertheless, while it is true that states must grapple with the kinds of social and material realities I have just described, they nonetheless have various actions available to them with which to promote sustainable diets. The first type of action concerns the reforms that states can make to *themselves*. In an important sense, this kind of action is a necessary antecedent to the other types of actions that states can take, because it sets the agenda that informs and drives them forward. By states ‘changing themselves’, I partly mean the practical changes states can make to their own institutions and mechanisms of government. For example, appropriate state bodies might need to be established (an ‘office for sustainable diets’?) to oversee, coordinate, and enforce the various regulations and targets that would be needed to tackle the environmental impacts of citizens’ diets. At a slightly deeper level, states can also act to modify the basic values and assumptions that inform and shape the processes of government. A practical manifestation of this might be that state actors – by whom I mean politicians, public servants etc. – are obliged to follow a code of conduct that aims to make any actions they undertake as part of the business of government consistent with the promotion of sustainable diets (or, indeed, consistent with sustainability in general). Such guidance could, for example, be integrated into existing directions on policy development, such as the ‘Green Book’ guidance issued by the UK’s treasury.

Another, more fundamental, change states could make to themselves is introducing legislation at the constitutional level, establishing an obligation on the state to foster the promotion of sustainable diets. Here, a useful comparison is the UK’s 1998 Human Rights Act, which, among other things, introduced an obligation on public authorities to uphold human rights, gave individuals in the UK’s

⁶⁶ See (Evans, 2012) for a succinct environmental history of human food sourcing.

jurisdiction the right to claim for remedy when their rights are breached, and empowered courts to review whether government legislation is consistent with human rights (Klug, 2015). Given that Nussbaum has said that her capabilities approach can be viewed as “one species of a human rights approach”, one way of interpreting the Human Rights Act is as an attempt to oblige the UK state to ensure its citizens have access to something like central capabilities (Nussbaum, 2012, p. 170). With this in mind, recall that my argument in chapter 2 was that the state duty to promote sustainable diets is based in their obligation to respect the capabilities of individuals affected by the environmental effects of citizens’ diets. Given the similar normative foundations, perhaps it is plausible that states ought to constitutionally embed the duty they have to those affected by their citizens’ diets, in a similar way that the HRA constitutionally embedded the rights of citizens. A full discussion of such an action is beyond the scope of this chapter, but it is worth noting that there are at least three sets of questions that would need answering. First, what would constitutionalising a duty to ensure diets are sustainable mean for states’ effective jurisdictions? For instance, would foreign individuals who have their capabilities undermined by the diets of citizens in a distant state need to be given standing in the state’s courts? What about the individuals who are yet to be born; who would speak on their behalf? Second, how far-reaching and deep are the implications of such a constitutional change? Given that actually-existing diets are overwhelmingly unsustainable, would reorganising state actions around an obligation to change this be at all realistic? What trade-offs would have to be made in order to achieve such a goal? (Indeed, wider versions of these questions are likely to arise, as surely if we admit the moral importance of *diets* being sustainable, we implicitly admit the importance of *all human activities* being sustainable). Third, how would states practically work toward meeting their commitment? For example, how would states assess the sustainability of their citizens’ diets, given the uncertainties inherent in evaluating the interactions between diets, the environment, and individuals’ capabilities?

Once they have instilled within themselves a commitment to the promotion of sustainable diets, there are four types of actions states can take to promote sustainable diets. The first is affecting citizens’ dietary preferences, with the resultant market effect shaping both what food is produced and the methods of food production. Possible interventions to promote the consumption of more sustainable diets can be placed on a spectrum of coerciveness, ranging from mild ‘nudges’ to more authoritative measures. Unsurprisingly, less coercive interventions that leave citizens with a greater degree of food choice tend to be more acceptable to the public than more coercive ones (Demski, Cherry and Verfuert, 2022). Such policies might include changing dietary guidelines and raising awareness of the sustainability of different types of food through labelling and information campaigns. States might also ask related professionals, such as nutritionists, to integrate sustainability into their practice (Lang, 2022). However, research shows that citizens tend to be reluctant to change their diets in order to promote sustainability (e.g. Brunelle, Coat and Viguié, 2017; Demski, Cherry and Verfuert, 2022). Barriers to citizens choosing to eat more sustainably include their preferences and beliefs, which are informed by taste, cravings, habits, and beliefs about nutrition (Kemper, 2020; Seffen and Dohle, 2023).

Other barriers include social and cultural factors, which are informed and reinforced by, amongst other things, media portrayals of diets, class dynamics, and advertising (Nestle, 2003; Kemper, 2020; Frens-String, 2021).

For these reasons, states wanting to promote sustainable diets might need to go further than simply providing citizens with information about the sustainability of different diets. One possible measure is to take steps to nurture an ‘environmental ethic’ within their citizenry, the aim being to foster a collective mind-set wherein individual dietary choices prioritise environmental sustainability (Bell, 2004). Indeed, it might even be the case that states have a *duty* to promote such a mind-set. After all, if sustainable diets are a requirement of justice and can only – at least in part – be achieved through changes in citizens’ dietary preferences, then it seems to follow that a state motivated by justice ought to take action to change those preferences. (This idea mirrors Appiah’s argument that states ought to inculcate citizens with a commitment to liberal democratic values (Appiah, 2005, pp. 155–212)). The practicalities of how such a state duty would be discharged would vary depending on what kind of vision of sustainable diets was being implemented, since different visions require different changes to citizens’ dietary consumption habits. But it is worth noting that today actually-existing state policies are often geared towards the promotion of *unsustainable* diets. For instance, the United States’ federally administered ‘checkoff’ scheme has the explicit objective of driving domestic demand for meat and dairy products, achieved through funding research and advertising, as well as influencing the national dietary guidelines (Nestle, 2018, p. 63). A state concerned with cultivating a citizenry with preferences more aligned with the implementation of sustainable diets would need to reverse programmes like these, redirecting their effects towards programmes that attempt to change citizens’ preferences that present obstacles to the promotion of sustainable diets. For instance, more investment in education in cooking techniques might help counter the widely held (and to a certain extent self-fulfilling) perception that good eating experiences can only be obtained via the consumption of certain types of foodstuffs.

States also have access to a broad portfolio of more coercive policies affecting citizens’ dietary choices. These policies include imposing taxes on unsustainable food items, compelling stores to offer more sustainable food options, and even implementing rationing or bans on the consumption of notably unsustainable foods. It’s worth noting that states have previously implemented coercive policies to regulate food access, such as the rationing of post-war Britain. However, the current policy landscape has significantly shifted from that era of statist and interventionist approaches, towards a presumption of deregulation and deferral to ‘market forces’ (Lang and Barling, 2013, p. 3). This is a factor states would need to take into account, if they were to pursue an agenda of more active intervention. It is worth noting that policies affecting the demand for (un)sustainable diets are sometimes criticised for being overly ‘paternalistic’.⁶⁷ However, such criticisms are misguided; on my account the state duty to

⁶⁷ For example, in 2018, the UK’s then Minister for Clean Growth, Claire Perry, was asked whether the government planned to promote ‘climate friendly’ diets. She responded: “I don’t think we should be in the business

promote sustainable diets stems from a concern for those affected by the environmental effects associated with diets, effects that are rarely felt by the actual eaters of the diets. In other words, states ought to implement dietary demand-affecting policies due to concern for justice, not for the sake of their citizens' health (nor, to take a broader view of paternalism, their citizens' wellbeing in general).

The second way states can promote sustainable diets is by influencing the decisions and behaviour of actors along the supply chain of diets, including producers, processors, and distributors. When discussing this topic, it is useful to bear in mind that contemporary food production has been powerfully shaped by historic state policies. For example, during the early 20th century, there was a surge in meat production in the United States; this phenomenon played a crucial role in shaping the Western dietary pattern discussed in the first chapter of this thesis. While consumer preferences played a part in driving this increase, its origins can be traced to the consequences of agricultural support provided through the 'New Deal' policies of the 1930s. These policies led to excessive production of grain, consequently spurring the expansion of meat production and leading the transition to more intensive production methods that remain with us today (Winders, 2009, p. 80). Today, the influence of state policies on agricultural production has not waned. For example, the FAO observes that globally environmentally impactful foods such as beef and dairy receive disproportionately high levels of government support – in the form of price incentives and subsidies – as compared to less environmentally impactful foodstuffs like vegetables (FAO, 2021a, p. xvii). States have the capacity to change incentive structures like these in order to promote the production of more sustainable foods. Furthermore, states possess the authority to enact more robust measures to foster sustainable food production. They can – and frequently do – introduce regulations and mandates that, for example, limit the use of environmentally impactful chemicals or insist on stricter waste management protocols. Existing policies of this type typically concentrate on ameliorating immediate local environmental impacts. However, a growing number of states are now initiating measures that extend beyond local concerns. For instance, it appears that New Zealand will soon introduce a levy on agricultural greenhouse gas emissions, as part of its international commitments to substantially reduce methane emissions by 2030 (Corlett, 2022).

When states attempt to improve sustainability within the supply chains of diets, they encounter a challenge posed by the contemporary globalised food system. This challenge stems from the fact that food production, distribution, and processing often occur across international borders, beyond the jurisdiction of the state aiming to foster greater sustainability in its citizens' diets. (Recall the example I gave of the baked salmon in chapter 1). Sometimes this challenge can be tackled via mechanisms like import tariffs on food produced unsustainably, a system that the European Union is currently in the

of prescribing to people how they should run their diets... I think you're describing the worst sort of nanny state ever" (Harrabin, 2018).

(very) early stages of implementing (*Financial Times*, 2023).⁶⁸ But it is also likely that states will need to coordinate with one another in order to promote sustainable diets. One practical form this might take is through international agreements. For instance, currently about a third of signatories of the Paris Climate Accord have made commitments to reduce emissions from their domestic livestock (Crumpler *et al.*, 2021, p. xv).

At a deeper level though, the globalisation of the food system also means that states' ability to intervene in dietary supply chains hinges on their positioning within the 'global political economy', by which I mean "the interaction of the market and powerful actors such as states, multinational firms, and international organisations" (Robert Gilpin quoted in Powers, 2021, p. 100). According to Madison Powers, the character of the global political economy as it relates to the global agricultural sector are characterised by four trends, which I detail now, followed by some brief comments about how they might affect state capacity to promote sustainable diets (Powers, 2021, pp. 101–110).

The first trend involves asymmetric trade rules that tend to disadvantage less developed nations by, for example, dumping excess food production into poorer countries, thereby undermining local productive capacity. The second trend is the growing scarcity – or at least perception of scarcity – of environmental resources, in particular fertile land. This scarcity is primarily driven by heightened demand and the environmental deterioration linked to conventional agricultural practices. This has precipitated an "aggressive pursuit of land and water resources" by foreign investment vehicles in countries where land is relatively inexpensive and regulatory regimes relatively weak, the purpose being to extracting wealth, often at the cost of significant environmental impacts (Powers, 2021, p. 103). The third trend is the concentration of market power into the hands of a decreasing number of producers, buyers, and retailers. For example, 70% of fertilisers and pesticides are produced by six agrochemical manufacturers and 75% of the global grain trade is controlled by just four agribusiness conglomerates (Powers, 2021, p. 104). The fourth trend is the increasing financialisation of the sector, which "confers upon private owners of concentrated capital an immense power to determine what gets produced, where, by whom, the conditions of state oversight, and the location and terms by which profits are accumulated and taxed" (Powers, 2021, p. 108).

The cumulative effect of these trends is to hinder the ability of less powerful states to foster more sustainable agricultural sectors, since power over production, processing, and distribution lies in the hands of more powerful states and non-state institutions. So, broadly speaking, the character of the current global political economy means that the capacity of states to promote sustainable diets by influencing the decisions and behaviour of actors along the supply chain of diets is unequally distributed. This might lead us to think that the more powerful states have an outsized responsibility to promote sustainable diets. Or, taking a more radical stance, we might think that the states who wield

⁶⁸ Currently the only agricultural import the EU 'carbon border adjustment mechanism' covers is fertiliser, but in theory it could be expanded to cover any agricultural import.

outsized influence over the current global political economy have a responsibility to rebalance it, which would entail, for example, renegotiating trade rules and curtailing the powers of non-state organisations like multi-national agribusinesses.

The third way that states can promote sustainable diets is by affecting the development and deployment of sustainability-affecting diet-related *technologies*. The particular technologies that will be required will depend, again, on the vision of sustainable diets that any given state is trying to promote. *Promethean Development*, for example, requires the development and scaling of the machinery and devices needed to produce foods that successfully mimic meat products, while *Sustainable Development* requires the invention of feed compounds that reduce the methane emissions associated with enteric fermentation, and the development of precision farming techniques. States can do a lot to cultivate and promote an environment that is conducive to the necessary research being carried out, through policies like supporting research, providing initial funding for capital-intensive projects, and providing ongoing support for the deployment of sustainable technologies. Such policies are of particular importance in the current economic paradigm, within which research and development is increasingly taken on by the private sector; the drive for short and medium term profits is not necessarily conducive to the innovations required for a transition to sustainable diets. As Mariana Mazzucato says, states “can and should guide the direction of the economy, serve as an ‘investor of first resort’ and take risks. It can and should shape markets to fulfil a purpose” (Mazzucato, 2021).

We should also take a broad view of what constitutes ‘technology’ in order to avoid a myopic view of the ways in which states can help promote its development and adoption. For example, the production techniques endorsed by the *Green Radicalism* do not require huge advances in knowledge; instead they require a larger and more skilled agricultural workforce in comparison to the requirements of conventional farming. Currently many rural economies around the world are unable to attract and retain a high quality workforce. Therefore, state interventions to encourage the deployment of Green Radical ‘technologies’ would need to comprise of interventions in social, economic, and political domains. One proposal for the UK, for example, involves the redistribution of land to create opportunities for small, less intensive farm operations to become a more important part of the food system (Monbiot *et al.*, 2019).

The fourth way that states can affect the sustainability of diets is through how they manage environment-affecting activities *in general*, responding to the fact that the sustainability of diets is intertwined with other demands placed upon the environment. Or, to put it more declaratively, the fact that environmental resources (in the form of both sources and sinks) are finite mean that various human activities – of which the provision of diets is just one – must be balanced against one another in order to achieve sustainability. To give a simplified example, illustrated in figure 3 below, a shift towards more extensive, lower yield farming practices, as proposed by *Green Radicalism*, might lead to worse biodiversity outcomes compared to those associated with existing conventional farming techniques if coupled with a policy of growing biofuel crops to produce aviation fuel (due to having to expand

agriculture land into ‘wilderness’ in order to produce both enough food and biofuels). If, however, the shift in farming practices was coupled with a policy to reduce aviation then a transition to *Green Radicalism* is consistent with improving biodiversity outcomes.

BD 10 Food 100	BD 100	BD 100	BD 10	BD 40 Food 70	BD 40 Food 70	BD 40 Food 70	BD 10	BD 40 Food 60	BD 40 Food 60	BD 40 Food 60	BD 100
BD 10 Food 100	BD 10 Food 100	BD 100	BD 10	BD 40 Food 70	BD 40 Food 70	BD 100	BD 10	BD 40 Food 60	BD 40 Food 60	BD 100	BD 100
System 1. Conventional with biofuels				System 2. <i>Green Radicalism</i> with biofuels				System 3. <i>Green Radicalism</i> without biofuels			

Figure 3. Each set of eight squares represents a given land-use regime, with each square representing a unit of land. Yellow squares represent conventional crops; dark green represent wilderness; blue represents biofuel crops; light green represents agroecological crops, as proposed by the *Green Radicalism* vision. ‘BD’ and the number that follows represent a biodiversity ‘score’. ‘Food’ and the number that follows represent a food production ‘score’. The given scores are arbitrary; the intention is to illustrate how policy decisions within the wider economy interact with dietary policy to affect whole-economy sustainability. All three systems produce the same amount of food, but their net score for biodiversity varies. System 1 one scores 340; system 2 scores 320; system 3 scores 500.

How should states go about holistically coordinating between the different demands of various environment-affecting activities? This is too big a question to address in detail, so here I limit myself to briefly exploring one potential answer proposed by Brenea Holland (Holland, 2008a). Like me, Holland is committed to individuals not having their capabilities undermined by the natural environment (although she generally frames the idea positively; i.e. individuals ought to have access to sufficient environmental resources to allow them access to a full set of central capabilities⁶⁹). Also like me, she is interested in the fact that the actual functionings of individuals are often associated with greater environmental impacts than are required for them to lead dignified lives.⁷⁰ Holland illustrates this with the example of the capability to drive an SUV, arguing that the environmental effects of producing and running such vehicles are unnecessary – since the drivers could lead minimally dignified lives without the freedom to drive them – and, moreover, that the environmental resources required to provide the capability could be used to promote *other* capabilities if used elsewhere. Her concern is therefore with: 1) how ‘unnecessary’ capabilities affect the capabilities of others via their environmental effects, and 2) how the provision of ‘unnecessary’ capabilities may be ‘zero sum’, i.e. making them available precludes the possibility of other, more important, capabilities being made available.⁷¹

In response, Holland proposes ‘capability ceilings’:

⁶⁹ Recall, I have conceptualised *an action* to be sustainable if it does not affect the natural environment in a way that undermines any individual’s central capabilities. Our accounts therefore represent two sides of the same coin.

⁷⁰ Henry Shue makes a similar distinction between ‘vital’ and ‘frivolous’ greenhouse gas emissions: “The satisfaction of some ‘preferences’ is essential for survival, or for human decency, and the satisfaction of others is inessential for either survival or decency” (Shue, 1993, p. 55).

⁷¹ 2) is a variation of 1). That is, one way I affect someone’s life is by using an environmental resource that they need. But here it is useful to explicitly highlight the zero sum nature of the provision of capabilities.

As I conceive them, ‘capability ceilings’ establish maximum levels of capability protection. Their purpose is to limit the amount of resources that can be put to protecting capabilities that are in conflict with each other. Most importantly, capability ceilings force us not merely to face but constructively to spell out this conflict in our deliberations about what a society can realistically accomplish in its effort to provide protection of a threshold level of central human functional capabilities for each person. Specifically, our deliberations will have to address questions about *whose* capabilities have to be limited and *why* (Holland, 2008a, pp. 416–17, original emphasis).

To explain; recall, in her original formulation of the capabilities approach Nussbaum proposed that there ought to be a threshold (or, we might say, a ‘floor’) of central capabilities, below which no just society would allow any individual to fall. With her addition of capability ceilings, Holland is suggesting that there should also be a *limit* to human capabilities, thereby demarcating a space of permissible human functionings; the space between the floor and the ceiling. To illustrate with a dietary example, we might think that individuals ought to have access to a nutritious and adequately aesthetic diet, and that practically this implies they ought to have the opportunity to occasionally eat a beef burger. So, that is where we set our capability threshold. We might also think, however, that the capability of eating a beef burger *every day* is inconsistent with justice. So, we should set our capability ceiling somewhere beneath that point.

Returning to the question of how states should go about coordinating between the different demands of various environment-affecting activities, we can see that capability ceilings can be used to inform how to balance different activities against each another. Consider again my simplified example. If we assume that a certain amount of aviation is necessary for individuals to lead minimally dignified lives, then system 1 appears to be preferable; it has the best biodiversity ‘score’ while still producing the required plane fuel. If, however, we decide that the capability of ‘air travel’ is not required to lead a minimally dignified life, then we must consider the environmental ‘cost’ of providing such a capability, which is that the land used to produce biofuels could be used in a different way, such as, like in system 3, being turned over to wilderness, thereby improving biodiversity outcomes. We might therefore decide to set the capability ceiling regarding the mobility of individuals somewhere below that which is made possible by aviation. In a world that is characterised by finite environmental resources and populated by humans who are wholly reliant on that environment, it seems plausible to me that states will need to implement policies that are aligned with something like capability ceilings if they are to allocate environmental resources in a manner aligned with justice.⁷²

⁷² Of course, practically speaking the trade-offs are much more complex than what I have described. There is also scope for discussing policies that currently exist, but I do not have the space to do so here. For instance, arguably carbon markets, personal carbon allowances, and nationally determined contributions are all policy devices that, at different scales, align with the idea of capability ceilings.

2. Principles for policy makers

In previous chapters, I set out a justice-led case for why states ought to promote sustainable diets, and explored some normatively valuable dimensions of diets that might be affected if such an agenda was pursued. Then, in the section preceding this one, I demonstrated that states are not passive actors in the face of diets; they have a wide range of actions available to them to promote sustainable diets. I am not in a position where I can prescribe specific policy actions with regard to the promotion of sustainable diets. This is because the precise actions that states ought to take will hinge on a range of factors about which I lack the context-specific knowledge to pass judgement. These factors include, for example, the feasibility of policy implementation, social and economic factors, and the state of knowledge regarding how particular diets affect individuals. Nonetheless, while I cannot suggest explicit policies, I can draw on the insights presented in this thesis to suggest three principles that policymakers should bear in mind when making diet-related policy.

Principle 1: *the sustainability of their citizens' diets ought to be a key priority for states.* Failing to respond to unsustainable diets is an affront to justice. Therefore, all other things being equal, states should utilise any and all of the kinds of actions I described in section 1 of this chapter, in order to ameliorate any capability-undermining environmental effects associated with the diets of their citizens. Importantly, states should not only respond when it is the capabilities of their own citizens being undermined; justice demands that they also take into account distant people and future generations.

Principle 2: *states ought to prioritise reducing the uncertainty related to the environmental effects of diets.* The causal relationships that exist between agents' actions, the effects of those actions on the environment, and how the environment effects other individuals' capabilities can be hard to understand. As I described in chapter 2, there are measures that states can and should take despite this uncertainty. Nonetheless, states should take measures to push back uncertainty whenever they can, in order to reveal both the duties of its citizens and how it can more effectively promote sustainable diets. (Practically this might involve funding research, properly resourcing regulators and oversight bodies, and establishing mandates for environmental impact disclosure from actors along dietary supply chains).

Principle 3: *states should be conscious of the trade-offs involved with promoting sustainable diets and act to mitigate them when they can.* As chapters 3-5 of this thesis highlight, the promotion of sustainable diets has the potential to affect individuals' diets in normatively significant ways. In many cases, these effects do not pose a legitimate barrier to the promotion of sustainable diets, since while they may *affect* individuals' wellbeing they do not do so to the extent that the individuals' abilities to lead minimally dignified lives is undermined. In these cases – where to promote sustainable diets would not violate the demands of justice – states would still do well to act to avoid the need for such trade-offs. In cases where a policy to promote sustainable diets *would* undermine the central capabilities of their own citizens, then it is possible that states can justifiably choose not to pursue such a policy. When

tragic conflicts like these are encountered, states should treat them with the appropriate seriousness. (Tragic conflicts should prompt genuine reflection about: how and why the situation that generated them was allowed to arise; how those who had their central capabilities undermined can be recompensed; how social, political, and environmental conditions can be changed so that the tragic conflict will not arise in the future).

3. Conclusion

In this chapter, I first presented a taxonomy of actions that states can take to promote sustainable diets. I categorised these into five different types: actions affecting the state itself; actions affecting citizens' consumption; actions affecting the supply chains of diets; actions affecting the development and deployment of diet-related technologies; and actions that affect non-diet related environment-affecting activities that have implications for dietary sustainability. Then I provided three principles for guiding state actions regarding sustainable diets. These were: 1) The sustainability of their citizens' diets ought to be a key priority for states; 2) States ought to prioritise reducing the uncertainty related to the environmental effects of diets; 3) States should be conscious of the trade-offs involved with promoting sustainable diets and act to mitigate them when they can.

Thesis conclusion

In the introduction to this thesis, I identified four primary contributions of this thesis. The first was to provide a definition of (un)sustainable diets. The second was to mount an argument for why states have a justice-led duty to promote sustainable diets. The third was to explore some of the normatively significant dimensions of diets that may be affected by state promotion of sustainable diets, the aim being to highlight some of the conflicts and harmonies that might be encountered when pursuing such a policy. The fourth was to explore how states can promote sustainable diets and to give some brief comments designed to guide and evaluate any such efforts. To conclude the thesis, I summarise each of those contributions, offer reflections on future avenues of research, then offer some closing comments.

1. Defining sustainable diets

In chapter 1, I set out to answer the question: what are sustainable diets? The answer I gave had two dimensions: conceptual and practical. Regarding the former, I began by setting out an understanding of environmental sustainability that understands it as a concept that should govern humans' relationship with the natural environment. More precisely, my conception of environmental sustainability understands the environment as a thing with instrumental value; value that I choose to comprehend in the terms of Martha Nussbaum's capabilities approach. So, according to my account, an action, event, or state of affairs is environmentally sustainable if it is consistent with environmental conditions that do not undermine the central capabilities of morally relevant individuals. I also specified that the individuals in this formulation should be experiencing 'normal' levels of vulnerability to the environment. (Whether individuals' capabilities are undermined by the environment is determined by the function of the environmental conditions they are exposed to *and* their vulnerability to those environmental effects). Therefore, I concluded that a diet is sustainable when the environmental effects associated with it are compatible with the central capabilities of any individual who is a) vulnerable to the environment to a normal degree and b) within the scope of justice. Conversely, a diet is unsustainable when the environmental effects associated with it are incompatible with the central capabilities of any individual who fits those criteria.

I then moved to translate this quite abstract account of sustainable diets into a more practical one. I said that a diet is best thought of as the culmination of a long causal chain, of which each 'link' is associated with various environmental effects. Therefore, assessing the sustainability of a diet requires evaluating the manner in which those environmental effects affect individuals' capabilities; a diet is sustainable if none of the environmental effects of its supply chain undermine any individuals' freedom to lead minimally dignified lives. While such an assessment is straightforward in principle, in practice it is not. The diets of most groups of citizens are composed of hundreds of foodstuffs, each of which is the outcome of numerous production, distribution, and processing practices, often occurring across several jurisdictions. The environmental effects associated with these diets are therefore both

hard to grasp, and have ramifications on individuals' capabilities across multiple spatial and temporal scales. After considering an alternative approach, I settled on using the 'environmental footprint' of a diet as an imperfect proxy for its environmental sustainability, and described how some often-used environmental metrics might link to the undermining of individuals' capabilities. I described the unsustainability of the 'Western pattern diet', which is steadily being adopted by more and more individuals around the world.

Finally, I described what sustainable diets might look like at the most practical level. Disagreement exists regarding what strategies to pursue in order to transition to sustainable diets. Therefore, I outlined four distinct 'visions' of sustainable diets; each meant to represent a prominent discourse about how diets – and the food systems that bring them into being – ought to be transformed. *Sustainable Development* is a reformist vision that represents the orthodox development position on the possibility of dietary transition. It holds that the global food system can be made sustainable through gradual, targeted interventions that are compatible with current political and social structures. *Promethean Development* argues that diets can be made sustainable via the development and application of new and innovative technologies that would revolutionise agricultural production, while causing very little disruption to individuals' current food choice. *Green Radicalism* holds the industrialisation of the food system responsible for its unsustainability, and therefore proposes that food systems be reconfigured to be more aligned with 'co-existing' with the natural environment, entailing major shifts to both diets' supply chains and to foodstuff availability. Finally, *Sustainability Maximising* represents a purely hypothetical dietary transition that prioritises sustainability above all other values. I included this vision because the other visions all make various concessions to values other than sustainability, yet my conception of sustainability is potentially very morally demanding, so it is important to think about what pursuing sustainable diets as much as we possibly could would look like. For the sake of argument, I imagined that this diet is composed solely of the milkshake-like food product 'Huel'. As the thesis progressed, I used these visions as a way to analyse the sorts of considerations that are at stake when the project of promoting sustainable diets is pursued.

2. A state duty to promote sustainable diets

In chapter 2, I presented the case for a pro tanto duty on states to promote sustainable diets. I began by exploring the moral basis of state duties according to the capabilities approach. I explained that Nussbaum believes that state duties flow from the duties of individuals in situations where individuals are unable (or unwilling) to discharge their duties individually (therefore meaning the state is better placed than individuals to ensure their responsibilities are upheld). I argued that the environmental effects associated with unsustainable diets will often yield just such situations, due to issues relating to: collective actions problems; fairness regarding the distribution of benefits and burdens; individual capacity to understand the environmental impact of their diets; and individual freedom to lead lives not burdened by near-impossible decisions about consumption.

In order to reveal the duties individuals have regarding their environment-affecting diets, I used the concept of *responsibility*; agents have a duty to not become responsible for undermining other agents' central capabilities via the environmental effects of their diets. Drawing on Iris Marion Young's models of responsibility, I described two ways that agents can become responsible for actions that are associated with unsustainable aspects of the global food system: agents can be liable for environment-affecting actions, or they can be socially connected to structurally unjust environmental actions or effects.⁷³ I argued that the individual duties implied by both these models will very often imply correlative state duties to address the capability-undermining diets, since they tend to not be the sort of duties that can be discharged by individuals.

Finally, I explored how that duty should manifest. First, I considered how it might vary depending on whether the individuals whose capabilities are undermined are compatriots, outsiders, or future generations. I said that states might have a duty to prioritise their own citizens, but only in cases of 'tragic conflict', which they must work to actively avoid. Second, I argued that states should take measures to decrease the uncertainty in relation to the capability-undermining effects of diets, and that they should, perhaps, be prepared to assign responsibility in cases where there is 'reasonable expectation' that agents have caused a capability-undermining environmental effect (this would have the effect of holding more powerful agents to account for their unsustainable actions). I also argued that, in the absence of certainty about the capability-undermining effects of their citizens' diets, states should promote some vision of sustainable diets, similar to those I set out in chapter 1. Third, I briefly outlined the idea that states may be able to fulfil their positive obligations by promoting 'restorative' diets.

3. Balancing the sustainability of diets against other values

So, states have a duty to promote sustainable diets. Since it is founded in a concern for the central capabilities of individuals – which represent the minimal requirements for living a life worthy of human dignity – this duty is a strong, demanding one. Nonetheless, it is not a duty that should be carried out unconditionally. In chapters 3-5, I explored some of the important values and duties against which the duty to promote sustainable diets should be balanced: food security, eating experiences, and dietary identity. The broad argument of these chapters is that while states should pay attention to these considerations, none of them prove to be a major obstacle to the project of promoting sustainable diets.

In chapter 3, I explored how the promotion of sustainable diets might affect global food security. I argued that all of the visions' practical proposals for reforms to the food system are plausibly compatible with global food security, if only those reforms were accompanied by necessary political,

⁷³ For most individuals these links of responsibility are largely opaque. After all, understanding the capability-affecting nature of our diets is challenging, especially when those effects are unintentional and result from our actions being combined with the actions of numerous other individuals. However, these kind of epistemic obstacles are exactly the sort of reasons why individuals' responsibilities are best mediated and enforced by the state.

social, and economic changes. Nonetheless, each vision carries with it different challenges to global food security. *Sustainable Development* risks continuing the same mistakes of the current development paradigm, both by not treating the environmental effects of diets with sufficient urgency (thereby potentially undermining future food production capacity) and continuing the current regime of maldistribution through its commitment to a productivist logic. *Green Radicalism* is perhaps the least feasible to implement, since it requires substantial consumption shifts. There are also worries that implementing it without addressing the underlying maldistribution of food could worsen diets for the impoverished. *Promethean Development* relies on unproven technologies, as well as bringing with it the risk of enabling a powerful few to monopolise food production without ensuring fair distribution. Since I had already stipulated that *Sustainability Maximising* is able to provide adequate nutrition, I instead briefly discussed the possibility that a highly sustainable diet might involve restricting excessive calorie intake, but left open exactly what that might mean.

In chapter 4, I explored how the promotion of sustainable diets might interact with people's 'eating experiences'. I first offered an analysis of eating experiences, arguing that they are at their root phenomenological experiences informed by the qualities of the food eaten, but that this 'flavour sensation' is only one aspect of an eating experience; individuals also interpret flavour sensations according to instinctive and contextual cues. I then argued that access to eating experiences of an adequate aesthetic quality is necessary for individuals to lead minimally dignified lives. Drawing on Dewey's conception of aesthetic experiences, I offered an account of what adequate eating experiences might look like. A core lesson of this chapter was that the aesthetic quality of eating experiences is determined just as much by the overall context in which food is consumed as the flavour sensations elicited by the food itself. Since that context can change, this means that the human capacity to obtain adequate eating experiences from new flavour sensations is, in theory, quite malleable. Finally, I explored how each of the visions of sustainable diets might affect individuals' eating experiences. While I identified some exceptions, my overall argument was that it is likely that every vision except for *Sustainability Maximising* would be able to offer the vast majority of individuals a full range of eating experiences.

In chapter 5, I explored the extent to which individuals' 'dietary identities' should feature in states' considerations when they promote sustainable diets. I argued that individuals' social identities – of which their dietary identities are a part – are of important value and are therefore worthy of accommodation from the state. Nevertheless, states are not obligated to regard dietary identities as inviolable; there are instances where alternative priorities, such as the advancement of sustainable diets, can justifiably take priority. In a departure from chapters 3 and 4, I also offered a procedural account of how states might go about implementing policies that undermine individuals' dietary identities: states should ensure their actions do not violate Kwame Appiah's principle of 'neutrality as equal respect'. Appiah argues that a way to evaluate whether a state's action is consistent with the neutrality as equal respect is to ask whether the state would have treated a counterfactual dietary identity differently to the

actual dietary identity under examination. I argued that for this test to give an accurate insight into whether or not the principle of neutrality as equal respect is being abided by, the proposed counterfactual should be *comparable* to the actual case under examination. I identified five characteristics across which the counterfactual dietary identity ought to be comparable to the actual dietary identity.

4. State action

In chapter 6, I first described five types of actions that states can take to promote sustainable diets. These were: actions affecting the state itself; actions affecting citizens' consumption; actions affecting the supply chains of diets; actions affecting the development and deployment of diet-related technologies; and actions that affect non-diet related environment-affecting activities that have implications for dietary sustainability. Then I provided three principles for guiding state actions regarding sustainable diets. These were: 1) The sustainability of their citizens' diets ought to be a key priority for states; 2) States ought to prioritise reducing the uncertainty related to the environmental effects of diets; 3) States should be conscious of the trade-offs involved with promoting sustainable diets and act to mitigate them where they can.

5. Further research

Given more time, there are other topics I would have liked to explore, which would provide fertile ground for further research. I will outline three of them now.

The first topic relates to the valuable dimensions of diets that might be affected by the promotion of sustainable diets that I have not yet explored. For example, one dimension that I did not have space to address relates to individuals' *livelihoods*. The global food system is a central part of the global economy; the FAO estimates that almost half the world's population lives in households linked to the agricultural economy, with 1.2 billion people directly employed in the sector (FAO, 2023a). This means that efforts to promote sustainable diets have the potential to profoundly influence individuals' lives by affecting their livelihoods, in ways that could both bolster or undermine their capabilities. It would be interesting to explore how promoting sustainable diets might affect livelihoods, as well as working to identify whether there are any *other* valuable dimensions of diets that could be affected by the promotion of sustainable diets.

The second topic relates to the capabilities approach and its use as a framework for understanding how environmental resources should be distributed justly, in particular how the approach can be used to adjudicate between competing, morally important claims to the natural environment. To a certain extent I sidestepped this issue in the thesis by arguing that clashes between individuals' central capabilities – what Nussbaum calls 'tragic conflicts' – ought not to occur in 'properly organised' societies. Therefore, as the thesis progressed I did little except for noting their presence and moving on, under the assumption that they are resolvable if only states gave them the attention they are due. However, this position is somewhat unsatisfying, for two reasons. First, it will sometimes be the case

that actually-existing societies are in fact ‘poorly organised’. For example, even if a transition to more sustainable diets began today, it would conceivably be several decades before nutritious food could be sustainably produced in sufficient quantities to feed the global population. Second, the claim that societies need not face tragic conflicts is based on the assumption that human societies exist in relative, rather than ‘absolute’, environmental scarcity. Regrettably, it is not obvious to me that humanity will continue to exist in conditions of relative environmental scarcity for much longer, if indeed we still do today. For both these reasons, work that develops a method for resolving conflicts between sets of incompatible capabilities would be valuable.

A third possibility for further research is exploring state promotion of sustainable diets from a perspective of procedural justice. While I touched on this topic in chapter 5, when I discussed how states could ensure ‘neutrality as equal respect’ regarding dietary identities, I have mostly left it untouched. Perhaps the fundamental question is: if states are to promote sustainable diets, how can we ensure that they do so legitimately? Some subsidiary questions include: what decision-making processes would need to be followed to ensure the fairness of the transition to sustainable diets? Among the numerous stakeholders involved with diets and their environmental effects, who should states listen and respond to? (Should they put more weight on the opinions of eaters, producers, or those whose lives are affected by the environmental effects of diets?) What kind of rules, mechanisms, or deliberative processes would need to be deployed to make sure the relevant processes are inclusive, transparent, and accountable? These and other questions would need to be answered for states to promote sustainable diets in a manner compatible with liberal democratic values.

6. Closing comments

Since the industrial revolution, a remarkable expansion in human productive capacities has taken place. The period has witnessed a profound transformation in how we harness technology, organise resources, and channel collective efforts, leading to significant advancements in various aspects of life. The positive effects on human wellbeing of the rapid development of the last two centuries are undeniable, and much of the environmental impact of that development has surely been justifiable. However, it is also undeniable that a significant proportion of humanity’s environmental impact is associated with forms of luxury consumption that are *unnecessary* for individuals to lead dignified lives. It is one of the great tragedies of our time – and will surely come to be seen as one of the greatest crimes against justice – that this luxury consumption continues while so many people lack the basic conditions to live minimally dignified lives. Moreover, the injustice extends beyond disparities between access to resources. This is because, as has been the focus of this thesis, the environmental effects of consumption are not morally neutral; they can undermine individuals’ capacity to lead minimally dignified lives.

Contemporary diets epitomise these complex relations of injustice. Many millions of people struggle to access adequate food to sustain healthy lives, and those same individuals are often most vulnerable to the environmental effects associated with the unsustainable diets of others. While we

cannot be certain, it seems likely that a similarly unjust relationship exists between current generations and future ones. Of course, it may well be the case that some of the environmental effects of diets are warranted. All individuals ought to have access to diets that give them the freedom to live dignified lives. I have argued that this entails, for example, access to diets that yield adequate aesthetic experiences. Nonetheless, it seems clear to me that many contemporary diets are unnecessary for leading minimally dignified lives. There is, therefore, a strong moral imperative to transition away from them, and towards more sustainable diets.

With this in mind, let me make some remarks about the visions of sustainable diets that I have deployed through this thesis. I introduced these as a device to help reveal the considerations at stake when promoting sustainable diets, rather than to advocate for any specific stance. Nonetheless, it is perhaps natural for readers to be curious about my perspective on them. If asked to pick one, my instinct is to equivocate, for it seems likely that a truly sustainable food system would amalgamate the most effective social reforms, technologies, and practices from each of the visions. If pushed, however, I am most persuaded by *Green Radicalism*. (Although I do hold some reservations about how it manifests as a movement in the Global North).⁷⁴ The main reason for this is that it is the only vision that offers a convincing strategy for substantially reducing the environmental effects of the food system; shifting production away from foodstuffs that are known to disproportionately affect the environment. Conversely, both *Sustainable Development* and *Promethean Development* ask us to have faith that their approaches can substantially improve the sustainability of diets, relying as they do on future advancements in, respectively, efficiency and technology. Furthermore, at a deeper level, neither *Sustainable Development* nor *Promethean Development* ask us to reconsider our current model of development, a model that is arguably characterised by a rapacious and reckless pursuit of growth and resources. It may be that this model *can* be maintained and its capability-undermining environmental effects effectively reined in or adapted to. In the spirit of the precautionary principle, though, I think it would be better not to rely on the possible emergence of such an outcome. Of course, the changes to food availability implied by *Green Radicalism* are substantial, and this leads some to argue that it is a hopelessly idealistic vision. I have some sympathy with that position, but we should always remember that denying the possibility of a more just world is itself a political stance, a stance that has the effect of curtailing the scope of what is understood to be possible.

Regardless of their stances on the types of dietary system that states should promote, I hope that readers can draw the following insights from this thesis. The diets that human populations consume

⁷⁴ Sometimes, I think, people aligned with *Green Radicalism* are trying to fit a political framework around their personal interests. For instance, the call to make community growing projects a key part of the food system is common, but it could very well be the case that not everyone *wants* to grow their own food. In a pluralistic society where we embrace division of labour, such a possibility should be acknowledged. (In the event, I suspect that many people *would* want to take a more active role in food production, if given the chance). More is the potential for the movement to inadvertently foster a sense of ‘disgust’ for conventionally produced diets, which can be challenging to untangle from notions of class in our current food system where more ‘natural’ foods often come with a high price tag.

have real effects upon finite and sometimes fragile natural environments, environments upon which all humans rely to be able to lead dignified lives. This means that the sustainability of diets is properly understood as being relevant to *justice*. All other things being equal, states have duties to ensure that their citizens' diets are sustainable, which means ensuring their citizens' diets do not, via the environment, undermine *any* individuals' capacity to lead dignified lives. Of course, this duty must be balanced against the fact that some aspects of individuals' diets are necessary for them to lead lives worthy of human dignity. I have argued that individuals should have access to an adequate supply of sufficiently nutritious food; they should have access to eating experiences of adequate aesthetic quality; and they should have their dietary identities treated with respect. To promote sustainable diets in a manner aligned with justice therefore requires a political project that takes all this into account. In this thesis, I hope I have taken the first steps towards such a project.

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