

University of Warwick institutional repository: <http://go.warwick.ac.uk/wrap>

This paper is made available online in accordance with publisher policies. Please scroll down to view the document itself. Please refer to the repository record for this item and our policy information available from the repository home page for further information.

To see the final version of this paper please visit the publisher's website. Access to the published version may require a subscription.

Author(s): Edward A. Page

Article Title: Intergenerational justice of what: Welfare, resources or capabilities?

Year of publication: 2008

Link to published version:

<http://dx.doi.org/10.1080/09644010701251698>

Publisher statement: None

Intergenerational Justice of What: Welfare, Resources or Capabilities?

Abstract

An important aspect of intergenerational justice concerns the specification of a 'currency of advantage' that can be used to evaluate distributive outcomes across time. Environmental theorists have introduced several innovative currencies of justice in recent years, such as ecological space and critical natural capital. However they have often downplayed the application of established currencies (such as welfare, resources or capabilities) to issues of futurity. After exploring the merits of a number of rival currencies, it is argued that the currency of 'capabilities to function' provides a promising basis for a theory of justice that takes seriously the rights and duties of intergenerational justice.

Introduction

Any complete theory of intergenerational justice, which I take to be concerned with the equitable distribution of benefits and burdens across different generations, must address three issues (Dobson 1998:64ff; Page 2006: 50-52). The first of these, the 'scope of justice', concerns the entities identified as legitimate recipients (and providers) of benefits and burdens. The second issue concerns the 'pattern of justice', that is, the level of benefit to which each subject of justice is entitled. The third issue, which is the focus of this article, concerns the specification of a 'currency of advantage (or benefit)' in terms of which alternative accounts of the pattern and scope of justice operate. Uniting these issues, we can say that a complete theory of intergenerational justice involves us specifying *which entities* should receive a certain *level of benefit* as calculated in terms of some credible *conception of advantage*.

While several competing currencies have been defended in the literature on distributive justice (welfare, resources, capabilities to function), there have been relatively few attempts to apply these currencies to questions of distribution between generations. Where they have been so applied, for example by environmental philosophers, the currencies so ingrained in wider political philosophical circles have generally been viewed as a barrier to, rather than an embodiment of, environmental and intergenerational justice (Dobson 1998:40ff; Chambers, Simmons and Wackernagel 2000:15ff; Dobson 2003:99ff; Hayward 2006:359ff). Yet, these critiques have often relied on brief analyses of theories of social justice; ignored the deeper connections between established and new currencies; and failed to consider in any detail the possibility that any of the established currencies could be revised to ground a robust theory of intergenerational justice.

The aim of the article is to contribute to the development of intergenerational justice by exploring the merits of a number of alternative currencies that might be applied to issues of futurity. I argue that, although the adoption of any of the main currencies implies that future benefits and burdens matter from the point of view of justice, there are subtle differences of justification and application amongst rival currencies. I also argue that there are a range of considerations in favour of adopting a modified account of 'capabilities to function' as the appropriate currency of justice both within and between generations.

The size of the topic at hand necessitates several simplifying assumptions. The discussion is guided by a *humanist* and *universalist* approach according to which the primary concern of a theory of distributive justice is to establish the claims and responsibilities of individual human beings where their temporal or geographical location is viewed as morally irrelevant. The approach is also *broadly egalitarian* in that it assumes that benefits and burdens should be distributed equally or according to some related distributive ideal such as priority or sufficiency, and not in line with historical principles of justice as maintained by libertarian theorists. I focus on *undeserved* disadvantages and put to one side the problem of disadvantages that are deserved in the sense that they reflect an agent's autonomous choices. Finally, in order to avoid a wholly abstract discussion of the merits of alternative currencies, I draw upon the science and impacts of *global climate change* as a way of exploring the implications of each currency on our dealings with future generations.

Welfarism and Justice

A useful, and common, starting point for the literature on the currency of justice is welfarism. This is the view that welfare - defined as some function of a person's desires (or preferences) being satisfied - is the only value that should be taken 'seriously, ultimately and for its own sake' (Sumner 1996:3). According to the egalitarian variant of welfarism, justice obtains in a population when no further transfer of resources would leave its members more equal in terms of welfare (Sumner 1996:9-10; Dworkin 2000:12).

Embracing welfare egalitarianism would have important implications for intergenerational justice. Take the example of climate change. The welfare enjoyed by future persons will be influenced by their ability to fulfil the many desires conditional on maintaining a high level of physical and mental health. People desire to be healthy and to achieve a normal lifespan as such, but they also have numerous further desires that are dependent on their physical and mental health. Climate change, through increases in the frequency and intensity of extreme weather events, increasing global temperature and rising sea levels will have a profound impact upon human health and longevity in the future and as a result the capacity of future generations to fulfil their desires. In its latest assessment in 2001, the Intergovernmental Panel on Climate Change (IPCC) found that the economic, social and health impacts of climate change will reduce the welfare of many millions of people in the future, as well as exacerbate existing global inequalities of welfare between developed and developing countries (White 2001:21ff; McMichael and Githeko 2001). As the IPCC observed in its earlier 1996 assessment, the spectre of such a lowering of welfare, raises 'particular questions of equity among generations' (Arrow *et al* 1996:130).

Despite the apparently intuitive application of welfarism to issues of futurity, welfare seems implausible as a currency of justice (Sen 1999: 62ff; Dworkin 2000:21ff; Brighthouse 2004:68-70). One problem is that welfare is liable to subsidise the lifestyles of those who have cultivated desires that are expensive to fulfil at the cost of those whose desires are easier to fulfil. A second problem is that there is no obvious way that welfarists can ignore the welfare created by fulfilling morally objectionable desires, such as those bound up with racist or sexist lifestyles. A third problem is that welfare egalitarianism seems to ignore the plight of people who are

impoverished in terms of other currencies but at least as well off as others in society in terms of welfare because they have learned to desire what is realistically achievable given their harsh circumstances.

The ‘adaptive desires problem’ has particular application to discussions of justice and futurity. It is in many respects obvious that the behaviour of earlier generations influences the nature of the desires that later generations come to entertain. One example is the way that alternative social, educational and cultural policies help shape the desires of each generation. But future people might also adapt their desires in the face of environmental decay quite independently of the intentions of their predecessors. Imagine that members of later generations come to adapt their preferences to an environment transformed by climate change by desiring less intensely the resources affected. They might learn not to desire so intensely access to clean air, water and a mild climate; or learn to desire the possibilities offered by a warmer and wetter climate. They may, that is, adapt their desires so that they become ‘contended victims’ of climate change. Welfare egalitarianism would recognise no issue of injustice arising between the earlier and later generations in such cases.

We can sum up the above by observing that welfarism is trapped within the logic of ‘weak sustainability. It cannot, that is, offer any independent argument for the preservation of natural resources, such as the climate system, aside from the way that these resources service human desires (Daly 1995; Howarth 1997:570-73).

Resourcism and Justice

According to a popular alternative to welfarism, justice should focus on the distribution of *impersonal resources*, such as income and wealth, required by all to lead a life of high quality. One classic example of resourcist thinking can be found in the work of John Rawls. Rawls held that, subject to favourable circumstances, distributive justice obtains when ‘social primary goods’ are distributed amongst a population so that, unless the worst off gain from their unequal distribution, these goods are shared evenly (2001:42). The social primary goods, such as income and wealth, freedom of movement, freedom of thought, and the social bases of self-respect, can be seen as the all-purpose means required by persons to pursue what they want out of life. They are under the direct control of mechanisms of social justice, such as social taxation, education and employment; and can be distributed evenly or unevenly amongst a given population (Rawls 2001:58-61).

Rawls did not apply his ‘primary goods egalitarianism’ to issues of intergenerational distribution in any systematic fashion, although he did argue that each generation is bound by extensive duties of conservation and investment that are best viewed as independent of those generated by social justice (1971:292ff). Moreover, he at no stage discussed the possibility that access to the natural environment could be treated as a social primary good (Dobson 1998:126). Yet, other writers working in the Rawlsian tradition have extended the currency of primary goods across generations and nations with interesting results.

One writer who adopts a more generous interpretation of impersonal resources, while retaining a broadly Rawlsian framework, is Brian Barry. Barry argues that the consumption of impersonal resources over time, ‘should be compensated for in the sense that later generations should be left no worse off (in terms of productive

capacity) than they would have been without the depletion' (1989:519). Although Barry does not define precisely what he means by 'productive capacity', the crux of the view is clear. This is that intergenerational justice only obtains when earlier generations refrain from worsening the opportunities available to later generations by engaging in a certain amount of environmental preservation. Although there is no one-to-one correspondence, Barry's notion of opportunities and productive capacity are clear descendants of Rawlsian primary goods.

Intergenerational resourcism has also been defended by a number of other theorists (Page 1983; Howarth 1997; Dobson 1998:43ff; and Baxter 1999:91ff). Brian Baxter, for example, argues that 'we should leave future generations of humans (and non-humans) no worse off than we found them, bequeathing an environment in which their opportunities for existence and flourishing are no worse [than ours]' (1999:95). Baxter departs from Barry in that he endorses an account of the scope of justice that views at least some non-humans as subjects of justice. Moreover, Baxter argues that, in some circumstances, earlier generations might be obliged to improve, and not merely preserve, the range of opportunities bequeathed to later generations. Although there are interesting differences between Barry and Baxter, both are resourcists in the sense that it is the various opportunities conferred by natural resources, and not the welfare produced by their consumption, that constitute the currency by which alternative social policies should be evaluated.

Applied to global climate change, resourcism regards the climate system as a peculiarly important 'global resource' which provides benefits that must be protected and divided fairly amongst all generations. The present generation is bound by a duty of justice not to engage in activities that modify the climate system with adverse results that cannot be offset by compensatory measures, as well as by a duty to respect the principle that each person has an equal right to release carbon and other pollutants into the atmosphere (Barry 2005:266-68). The notion of compensation, however, leaves it open for a generation to consume natural resources if they provide successor generations with access to a comparable resource (or, more accurately, the opportunities that this resource provides) so that the recipient generation is left no worse off than it would have been. Because it allows for substitutions of natural resources and technology, this approach avoids the 'absurd strong sustainability' of a view that denied that any consumption of non-renewable natural resources is justifiable (Howarth 1997:575). Obvious examples of such compensation in the intergenerational context would be the way in which improvements in energy efficiency of existing technologies, or the introduction of alternative energy technologies, can compensate for the losses of future opportunity brought about by the consumption of non-renewables such as coal or natural gas (Barry 1999:109).

The resourcism espoused by Barry and Rawls has been criticised by environmental theorists on a number of grounds. First, it fails to address the suspicion that some environmental impacts might be uncompensable in the sense that no amount of compensation can offset the damage their loss does to human well-being (Dobson 1998:161ff). For example, how might we compensate future generations for the loss of a beautiful coastline, animal species, or ancestral home?

Second, resourcism encourages a questionable conception of sustainability where improvements in human resources can often, if not in all circumstances, offset degradations in natural resources (Daly 1995:52ff; Dobson 1998:41-43). In rejecting

the goal of promoting a certain pattern of welfare across generations, the resourcist approach avoids the charge that it is ‘weakly sustainable’ in the sense that human and natural resources are merely instruments in desire satisfaction. Yet, the approach, as it has been developed by Barry and others, wavers between regarding human and natural resources as *complements* (both must be protected separately) or *close substitutes* (the focus should be on their combined preservation). Without such a clarification, the resourcist rejection of welfarism is no guarantee of a ‘strong sustainability’ approach to future generations.

A third, arguably more fundamental, problem is that is that some people, despite possessing identical bundles of impersonal resources as others, might still enjoy a low quality of life as a result of experiencing a disadvantage inherent to their physical or mental constitution. In such circumstances, a high level of impersonal resource possession does not seem to provide a plausible indication of a person’s life-prospects and therefore a cogent currency of justice. Consider once again the future victims of climate change. Global warming and sea-level rises are expected to increase mortality and morbidity in many regions as a result of increasing the frequency and intensity of storms, floods, forest fires and heat-waves. Yet, it is unclear how many climate impacts can be explained in terms of deficits in impersonal resources. Some will concern adverse changes in the physical and mental states of persons, such as their health or talents, rather than the goods required by persons to pursue the life that they have reason to value. The problem is equally applicable to existing persons: a simple resourcism of primary goods, productive capacity, or equality of opportunity seems an inadequate foundation for justice within or between generations since it fails to address a critical source of disadvantage.

One response to the above problem would be to widen the net of resourcist justice to cater for deprivations of personal resources, such as ill health, and then apply the expanded currency to issues of distribution within and between generations. The idea, as Ronald Dworkin has put it, is that we should not only seek to eradicate inequalities in holdings of income and wealth, but also those that result from unequal distribution of talents and handicaps (2000:79ff). The problem that exercises Dworkin is how to define a distribution of impersonal resources that would best approximate the situation where all undeserved disadvantages are removed whether they originate in impersonal or personal resource deficiencies. Simply put, Dworkin argues that we reach this distribution by imagining how much people would insure themselves against living a life disrupted by either form of disadvantage if they were free and equal participants in a hypothetical choice situation. The level of cover that an average person of normal prudence would freely choose to purchase would then be translated, through social taxation, into a redistributive welfare system (Dworkin 2000:73ff).

A key concept in Dworkin’s resourcism is the notion of ‘envy elimination.’ Someone envies another person, in the technical sense of the term, when they prefer to their own that person’s bundle of impersonal and personal resources. Recall that, to the extent that future generations inherit a damaged environment within which to pursue their life plans, intergenerational justice of impersonal resources regards these people as deserving of compensation. We could say that this theory endorses the test that no generation should be put in the position where they have reason to *envy* the impersonal resources enjoyed by earlier generations. As we saw, climate change is also set to affect adversely the personal resources of future persons by increasing

rates of physical and mental disease amongst adults and children. In fact, even if key greenhouse emitting nations adopt stringent policies of mitigation and adaptation over the coming decades, it is likely that future generations will have ample reason to envy the personal resources enjoyed by their predecessors. Because their envy arises from the adoption of policies for which they cannot be held responsible, future generations will have a clear complaint that additional measures should have been undertaken by their predecessors to mitigate, or adapt to, climate change. In this way, Dworkin's modification of the resourcist metric supports key aspects of the Barry/Baxter approach while giving it greater philosophical sophistication. Yet, in suggesting that each generation should pass on to the next at least as good an impersonal resource base as it inherited, as well as undertaking additional investments to avoid causing undeserved inequalities of personal resources in the future, a Dworkinian approach suggests that impersonal resourcism underestimates the duties of intergenerational justice.

One problem with a Dworkinian approach is that, despite embracing personal resource inequalities, it underplays the heterogeneity of human well-being. In particular, it seems to reduce the value of human ends to the resources that facilitate them (Sen 1984:316ff) and cannot deal intuitively with disadvantages that are harmful but not debilitating (Cohen 1989:918ff). I turn to the former criticism in the next section, but one example used to illustrate the latter is that of chronic pain. The incidence of chronic pain is sensitive to a number of changes in environmental variables such as pollution, temperature, and air pressure; and there is strong evidence that the incidence of these conditions will increase as a result of climate change (McMichael and Githeko 2001:473-74). Climate change will also increase the incidence of mental illness, such as clinical depression and generalised anxiety. All of these conditions, however, can be present in patients without showing up as physical abnormalities as is demonstrated by the fact that scientists cannot usually establish their physical causes. As such, these conditions seem more fruitfully developed in terms of an alternative conception of a person's advantage.

Developing intergenerational justice in terms of impersonal and personal resources raises a further problem. This is that earlier generations could manipulate the genes of their descendants so the latter are better able to fulfil their life-plans in a world blighted by climate change. Although gene manipulation technology is in its infancy, a great deal of research has already been conducted by geneticists who hope to offer parents not just the possibility of screening potential offspring for severe medical conditions but also to give their offspring additional genes to help them flourish in the context of a changing human and natural environment (Silver 1999:266ff). The result of implementing such technology would be that an earlier generation could finesse its resourcist duty to protect and preserve a hospitable climate system so long as it also provides personal resource enhancements of a sufficient size to outweigh the damages that result from climate change.

Ecological Space and Justice

The ambiguous implications of resourcism for our dealings with future generations and the natural world have led some to propose a new currency of justice called *ecological space*. Ecological space refers to the amount of ecologically productive land and water required to produce goods and services, as well as to assimilate the

waste products generated, using current technology. It measures the impact that we have as individuals, nations or generations on the environment in terms of the natural resources required to sustain current consumption patterns. The amount of ecological space taken up by an entity corresponds to that entity's *ecological footprint* (Wackernagel and Rees 1996:3ff; Chambers, Simmons and Wackernagel 2000:29ff).

Justice of ecological space can be defined as the view that each human being should be allocated a share of ecological space consistent with some preferred pattern of distribution and with the long-term security and flourishing of biosphere (Dobson 2003:101ff; Hayward 2006:359ff). According to the egalitarian version of this view, each person is allocated the right to use an equal amount of productive land and water subject to the constraint that the total amount of ecological space distributed across all generations and populations is consistent with the preservation of the earth's ability to sustain life indefinitely (Chambers, Simmons, and Wackernagel 2000:46-48).

The key idea behind justice of ecological space is that any generation that enjoys more than its fair share of ecological space exists in a state of 'ecological space debt' that mandates redistributive action to reduce this debt and, where possible, restore a fair distribution of each generation's ecological footprint. In certain extreme cases, earlier generations might consume so much more than their fair share of the biosphere that they preclude the possibility of any later generation enjoying an equitable ecological footprint. In such circumstances, a state of permanent ecological space debt, and therefore intergenerational injustice, will obtain.

A useful example of how such a debt might arise is developed by Chambers, Simmons and Wackernagel in terms of global climate change. Although the empirical claims at the heart of the example are controversial, they are broadly compatible with recent research on the costs of climate change by the IPCC as well as the UK Government (IPCC 2001; Stern 2007). The authors argue that, 'assuming a global target of 11.1 gigatonnes CO₂ emissions is required to maintain climate stability by 2050, and assuming that global population in 2050 is 9.8 billion, the per capita [ecological space] for energy is 1.1 tonnes per year' (Chambers, Simmons, and Wackernagel 1996:21; Dobson 2003:101f). All developed countries currently emit more than 1.1 tonnes of CO₂ per capita. The members of the G8 group of countries, for example, emitted between 1.69 and 5.52 tonnes of carbon per inhabitant in 2002 (CDIAC 2005). So using carbon emissions as a proxy for ecological space usage suggests that all developed countries are currently in ecological space debt to future generations. In fact, it is not just the rich countries that are so indebted since 88 countries emitted more than 1.1 tonnes of CO₂ per inhabitant in 2002 (CDIAC 2005).

Justice of ecological space can be viewed as a reformist version of impersonal resourceism, rather than a radical alternative. This is because it retains a focus on an all-purpose-means required by all to lead the life they value, rather than a direct measure of well-being. Moreover, it is not concerned directly with the distribution of personal resources, such talents and handicaps. It is, however, distinct from the views discussed above in that it focuses on distributing the impacts of human activity on environmental integrity rather than reducing justice to a matter of achieving a fair distribution of the divisible goods that nature, and human ingenuity, provides. In this sense, it focuses on the consequences of having a particular resource holding for the

environment rather than the absolute or comparative value of a person's resource share. The approach will take some account of personal resource inequalities, since differences in personal resources such as physical health modify each person's ecological footprint. However, the ecological impact of such personal heterogeneities are greatly outweighed by other factors, such as social patterns of energy and land use (Wackernagel and Rees 1996:61ff).

The currency of ecological space raises a number of fascinating issues that I have insufficient space to deal with here. One of the key issues concerns its scope. Whereas the established currencies are designed to apply to relations within a single generation, with their intergenerational implications being a matter of further deliberation, ecological space turns this methodological approach on its head by embracing an explicit commitment to intergenerational justice at the outset. The question arises, then, to what extent ecological space can provide the basis of a cogent and comprehensive theory of distribution within a given generation, particularly where many issues of inequity cannot be traced to environmental problems. A further problem is that it seems to share the weakness of other resourcist currencies in that it is too indirectly connected to human well-being to be a coherent focus of our distributive concerns. Having a greater (or lesser) impact on the environment does not, for example, translate particularly closely into greater (or lesser) levels of well-being. Those living in colder climates, for example, may require more ecological space than others to maintain a decent quality of life, so a strict egalitarian interpretation of the approach would itself seem unjust. Meanwhile, a person's ecological footprint has no connection to disadvantages grounded in conditions such as chronic pain, depression or generalised anxiety that cannot always be traced to environmental problems. Ecological space may yet provide the basis of a coherent environmental ethic, but it is at best an incomplete account of distributive justice.

Capabilities, Functionings and Justice

The currency of 'capabilities to function' focuses on people's substantive freedom to achieve the life that they have reason to value. According to the influential version of the view outlined by Amartya Sen, the things people have reason to value are human 'functionings' and the 'capabilities' to achieve them. Functionings are abilities or states of mind ('doings' and 'beings') that are often secured by income, wealth and personal liberty, but which are also affected by non-resourcist factors such as the attitudes of others. Sen discusses a somewhat eclectic set of functionings such as personal mobility, being well nourished, possessing adequate clothing and shelter, the possession of self-respect and undertaking meaningful work (Sen 1999:73ff).

A person's capabilities, by contrast, reflect 'the alternative combination of functionings [they] can achieve, and from which he or she can chose one collection' (Sen 1993:31). 'Capability', Sen writes elsewhere, 'is a kind of freedom: the substantive freedom to achieve alternative functioning combinations' (Sen 1999:75). As an egalitarian, Sen holds that each person should enjoy roughly similar sets of capabilities to achieve valued functionings. To the extent that poverty, poor environmental conditions, physical handicap or inequitable social arrangements prevent a person experiencing the capability (or substantive freedom) to achieve the same level of functioning as others, then an injustice obtains.

Sen's focus on capabilities and functionings marks a significant step away from welfarism and resourcism. Consider the functioning of being well-nourished. The distributive importance of food for *welfarists* is that its consumption satisfies human desires thereby promoting welfare; and for *resourcists* it is that food can itself be viewed as an intrinsically valuable commodity. For Sen, however, a reliable source of good quality food is valuable only because it facilitates 'the capability of functioning in a particular way, e.g. without nutritional deficiencies of particular types' (Sen 1984:316). It is these capabilities to function, and not the goods instrumental to their provision or the welfare they promote, that should be the focus of distributive justice.

A just outcome, for Sen, requires differential distributions of resources even though it can be difficult to distinguish a capability inequality from a resource inequality. A person with a lower metabolic rate, for example, requires less food in order to continue to be well nourished than a person with a higher metabolic rate. Other things being equal, the former will have a superior 'capability set' in the sense that they have a real advantage in achieving the life that they value. Such persons have no complaint if more income and wealth is diverted to others to maintain capability equality. Similarly, those suffering from medical conditions, or facing harsh physical environments, may require more resources than others to enjoy the same quality of life (measured in terms of capabilities) (Sen 1999:70). Moreover, the fact that people adapt their desires to suit their social and physical environment means that equalising capabilities to function will often require unequal distributions of welfare since there are some human capabilities (such as personal mobility) whose absence is significant from the point of view of justice even if its absence does not cause a reduction in welfare (Sen 1984:318).

Sen's account of capabilities to function has been usefully developed by Martha Nussbaum. Nussbaum develops a version of capability justice according to which justice involves helping all persons reach the point where they have 'a realistic option of exercising the most valuable functions' (Nussbaum 1999:46). Like Sen, Nussbaum holds that it is the *capability* to achieve valuable functionings and not the actual achievement, or experience, of functionings that should be the focus of distributive justice (1999:29ff). That is, Nussbaum argues that justice involves no guarantee that all persons remain healthy throughout a normal lifespan or that they can undertake satisfying work during the entirety of their adult life, but rather that all persons experience the capability to realise these valuable functionings if they behave responsibly (2006a:171-73). A further refinement is that Nussbaum, more explicitly than Sen, emphasises that capabilities and functionings are specified and revised within the context of the constitutional framework of a liberal society. The idea is that capability justice must be developed in a way that is tolerant and respectful of the choices people make and the diverging conceptions of the good life they possess (Nussbaum 2006b:53ff).

A central pillar of Nussbaum's theory of justice is a definitive specification of the key capabilities to function. Whereas Sen provides numerous examples of capabilities and functionings, he has so far declined to offer a systematic listing of capabilities or define their relative importance. Nussbaum, by contrast, defends a list of ten 'central human functional capabilities' (Nussbaum 2006a:76ff; 2006b:51ff):

1. Life	6. Practical reason
2. Bodily health	7. Affiliation
3. Bodily integrity	8. (A relationship with) Other species
4. Senses, imagination, and thought	9. Play
5. Emotions	10. Political and material control over one's environment

According to Nussbaum, a person deficient in any of these ten capabilities fails to lead a fully human and dignified life. Deficiencies in any capability, moreover, cannot be offset by enhancing the provision of one or more of the others. The idea is that a just distribution of wealth would enable each and every person a sufficient allocation of each capability and where this is not possible the goal is that as many people as possible should be so benefited. Inequalities above the point where all have enough of each capability are not dealt with and in this sense Nussbaum's theory is a hybrid of equality and sufficiency (Arneson 2006: 23ff).

Neither Sen nor Nussbaum extend their accounts of capability justice systematically to questions of distribution between generations. This is perhaps surprising given that both authors argue that a distinctive merit of the capability currency is that it can ground a truly global theory of justice (Sen 1999:318-19; Nussbaum 2006a:272ff); and, in Nussbaum's case, the approach is designed to regulate dealings between humans and other species (Nussbaum 2006a:325ff). However, the approach can be extended to deal with problems of futurity in at least two ways. First, by widening the list of functioning capabilities to include a separate capability to represent the value a person derives from operating within a hospitable natural environment. Second, by acknowledging the impact of existing persons on their successors in terms of established capabilities and functionings (Sen, 2004; Kamsler 2006:202ff).

The thought behind introducing a *new capability* is that acts and social policies that alter, or degrade, the natural environment deprive future persons of a separate 'ecological functioning capability' that is not reducible to other capabilities such as physical health or bodily integrity. Nussbaum herself seems to be hinting at such a capability when she suggests that all persons require 'a healthy relationship with other species: being able to live with concern for an in relation to animals, plants, and the world of nature' (Nussbaum 2006a:77). Yet, this capability is both controversial and unintuitive in that it implies that acts or policies that exacerbate climate change are unjust because they harm non-human animals (or our 'relations' with animals) and not that it undermines the well-being of future persons as such. A more radical, yet more intuitive, alternative would be to extend the list of capabilities to include the capability to experience life in an environment devoid of dangerous environmental impacts such as those associated with climate change. Here, we view a safe and hospitable environment as a vital, ingredient of a decent life rather than a facilitator of other functionings such as 'play', 'emotions', or 'control over one's environment' (which, despite its label, has no direct connection to environmental values).

In terms of exploiting *established capabilities*, climate change is set to affect the ability of both existing and future people to convert resources into valuable functionings in ways that affect many of the capabilities discussed by Sen and Nussbaum. In particular, they threaten life itself, bodily health and bodily integrity. These capabilities will be threatened even if the share of primary goods and ecological space available to future generations is at least as generous as that enjoyed by the present generation. The key point is that the widespread, and generally disruptive, impacts of climate change will limit the capabilities of many millions of future persons. First, these impacts will modify, and introduce, a range of 'environmental diversities' that degrade the capabilities to function facilitated by impersonal resources such as clothing and shelter. Sen himself hints at the problem when he notes that 'variations in environmental conditions, such as climatic circumstances (temperature ranges, rainfall, flooding and so on), can influence what a person gets out of a given level of income' (Sen 1999:70).

Second, climate impacts will affect quite directly 'personal heterogeneities' such as mental illness, physical disability and lifespan. A useful example concerns the future impact of climate change on food production and food security. Reliable sources of good quality food are crucial for the development and health of human populations and recent research suggests that climate change will alter the total amount, and nutritional quality, of the food that will be available to future populations. Sea level rises, for example, are expected to bring about loss of land, soil infertility and loss of fresh water for irrigation projects. As a result, food production and nutrition in many coastal regions will be undermined (Gitay *et al.* 2001:270ff). The IPCC's 1996 assessment found that anything between 40 and 300 million people could be expected to suffer from malnutrition in the year 2060 as a consequence of climate change (McMichael *et al.* 1996:577). The IPCC's 2001 assessment added that 'degradation of oil and water resources is one of the major future challenges for global agriculture. These processes are likely to be intensified by adverse change in temperature and precipitation' (Gitay *et al.* 2001:238). Taking nutritional status and bodily health as our starting point, it seems clear that climate change will affect the distribution of capabilities to function across generations. Policies for the management of climate change, therefore, are firmly the concern of capability justice.

One advantage of the 'capabilities to function' approach is that it seems to explain the duties of justice posited by resourcists and welfarists without raising some of the problems of these currencies. Recall that welfarist theories of justice experience difficulties when faced with people whose desires have been distorted by their poor circumstances. Future people who adapt their desires in the face of environmental degradation may experience more welfare than their ancestors even if they possess far fewer resources. We can say that such people enjoy superior sets of possible 'life-plans' in the space of welfare compared with those of their ancestors and should not be compensated according to welfarist thinking. According to capability justice, this line of reasoning is bizarre. Justice consists rather in recognising the claims of the disadvantaged even if their welfare is as high as others. On this view, we should value a hospitable environment because it is an integral feature of a life of decent quality and not because it facilitates desire satisfaction.

Next, consider those who experience chronic pain or ecological space debt. Such people experience symptoms of significant pain or do not have access to the environmental resources to which they are entitled. This pain, or ecological debt,

could be predictably eased if appropriate help was awarded. Capability justice seems well placed to explain why ignoring the case for compensation in such cases is a matter of injustice. Through no fault of their own, these persons experience undeserved deficiencies in their capability to function and should, where possible, be compensated. But the reason for the compensation is not located in the distribution of impersonal or personal resources. It would persist even if the relevant disadvantages could not be framed in personal resource terms (as seems to be the case with chronic pain) or in terms of ecological space (as is the case of inequities that are not tied to environmental damage).

Focusing on capabilities suggests that earlier generations should not act so as to undermine the possibility that later generations enjoy an acceptable (Nussbaum) or equal (Sen) level of capability satisfaction. To the extent that global environmental problems make it impossible for future people to enjoy adequate or equal levels of capability, these problems (and the actions and policies that exacerbated them) involve great injustice. As Sen puts it, the idea is that we should be 'concerned with preserving - and where possible expanding - the substantive freedoms of people today without compromising the ability of future generations to have similar, or more, freedoms' (Sen 2004:1).

Conclusion

The above sketch of a capability-based approach to intergenerational justice leaves a number of issues unaddressed. Some have objected that any determinate listing of goods necessary for a decent life is perfectionistic because it violates the principle that the state should remain neutral between different conceptions of what makes life go well (Brighthouse 2002:76-80; Deneulin 2002:509ff). In Nussbaum's case, the alleged mistake is that she identifies the life led above the threshold of dignity as superior to one below this threshold and in so doing fails to treat all persons as equals. Instead, it is argued, a just society should not promote any one conception of a good or decent life but rather protect the viability of a wide range of such conceptions. A related objection is the capability approach is paternalistic since, in a range of circumstances, it will interfere with a person's pursuit of their conception of the good for their own benefit. It would potentially mandate compensation for the disadvantaged in terms of improving their capability set even if the recipients would prefer to be compensated in terms of a different metric (or not at all); or impose certain levels of functioning in order to protect the capabilities of those that behave recklessly.

However, both of these objections underestimate the subtlety of Nussbaum's view. As we have seen, the primary focus here is on *capability* rather than *functioning*. Individuals who freely choose to lead lives of poor quality will receive no special treatment at the bar of capability justice (Nussbaum 2006b:53-4; 2000:96). Moreover, the specification of the list is neither absolute nor insensitive to social or historical context. It is to be modified in the light of public debate and reflection (Nussbaum 2006:53). Importantly, the list of functioning capabilities includes only a small number of core capabilities that together specifies the *minimum conditions* necessary for citizens to take full part in the life of their community (Nussbaum 2006b:59-60). Nussbaum explains that the list is not a complete specification of human well-being, but rather 'can be endorsed for political purposes, as the moral basis of central constitutional guarantees, by people who otherwise have very

different views of what a complete good life for a human would be.’ (Nussbaum 2000:74). Yet, there is a sense in which the approach is perfectionist for it will prohibit consumption patterns and lifestyles which harm the central functioning capabilities of others; and intervene to guarantee a certain minimum level of functioning where persons engage in practices that involve them losing their dignity or self-respect, being oppressed, or in other ways ceasing to function as a free and equal citizen (Anderson 1999; Nussbaum 2006a:172).

Finally, we must deal with what has become known as the *indexing problem* (Brighthouse 2004:71-80). To assess the comparative fortunes of contemporaries and non-contemporaries, we must be able to determine their enjoyment of the central functioning capabilities. The problem is that unless one person enjoys all of the capabilities that another person has their sets of capabilities do not overlap. In such cases, it seems impossible to make a meaningful judgment about who has the more urgent claims. Imagine, for example, that two friends are otherwise identically endowed except that one is susceptible to bouts of depression while the other has a learning disorder. In such circumstances, people’s ‘capability sets’ are not directly comparable and seem of limited value as a currency of justice. Who should receive state help, for example, if only one help package could be provided?

Nussbaum’s account of the ‘central functioning capabilities’, in assuming that each dignified life requires a certain amount of each capability, finesses the indexing problem to some extent. We do not need exact interpersonal comparisons of capabilities, for example, to identify those who have insufficient of at least one central functioning capability. Our two friends, despite having non-comparable disabilities, can be seen as being equally disadvantaged in the sense that they both lead lives below the dignity threshold. Both should then be viewed as being equally deserving of state support even if only one can be so helped. In this sense, Nussbaum’s version of capability justice, because it has a satisficing rather than equalising structure, can cope with more indeterminacy than Sen’s. Yet the flexibility created by refusing to make trade-offs between capabilities below some threshold of minimum functioning also means that, as it stands, Nussbaum’s list implausibly attributes equal value to *all* of the ten central functioning capabilities from ‘life’ and ‘bodily health’ through to ‘play’ and ‘a relationship with other species.’

Suppose that we depart from Nussbaum by giving more weight to some of the central functioning capabilities than to others. The idea would be that some capabilities are ‘vital’ and outweigh other ‘non-vital’ capabilities. A new indexing problem will resurface in cases where everyone lives above the point where their vital capabilities (such as bodily health and integrity) are fulfilled. In such circumstances, which arguably obtain today in most developed countries, people will differ only in terms of non-vital capabilities (such as play or relations with other species). How might we distinguish between the claims of those who enjoy all of the vital capabilities but lack varying non-vital capabilities? In terms of the approach outlined earlier, an important issue that requires more space than I have here to discuss is whether the proposed ‘ecological capability’, if defensible, is itself vital or non-vital. But the broader issue remains how the capability approach can deal with the undeserved disadvantage of those above the decency threshold. The lot of those existing and future persons fortunate enough to lead decent lives might seem a trivial matter in light of the millions who live today so far below any realistic threshold of decency. Yet, the suspicion remains that a credible account of justice must explain

how a favoured currency should be distributed in fortunate as well as unfortunate circumstances.

Notes

I would like to thank Simon Caney, Clare Heyward and two anonymous referees for useful comments and suggestions on a previous draft of this article.

References

- Anderson, E. (1999) 'What is the Point of Equality?', *Ethics*, 109: 287-337.
- Arneson, R. (2006) 'Distributive justice and basic capability equality: "Good enough is not good enough"', in Kaufman (ed.), pp.17-43.
- Arrow, K.J., Cline, W.R., Maler, K-G., Munasinghe, R., and Stiglitz, J.E. (1996) 'Intertemporal Equity, Discounting and Economic Efficiency', in J.P. Bruce, H.Lee & E.F. Haites (eds.) *Climate change 1995: Economic and Social Dimensions of Climate Change* (Cambridge: Cambridge University Press), pp.125-44.
- Barry, B. (1989) *Democracy, Power and Justice* (Oxford: Clarendon).
- Barry, B. (1999) 'Sustainability and Intergenerational Justice', in A. Dobson (ed.) *Fairness and Futurity* (Oxford: Oxford University Press), pp.93-117.
- Barry, B. (2005) *Why Social Justice Matters* (London, Polity).
- Baxter, B. (1999) *Ecologism* (Edinburgh: Edinburgh University Press).
- Brighouse, H. (2004) *Justice* (Oxford: Polity).
- Carbon Dioxide Information Analysis Centre (CDIAC) (2005) 'World's countries ranked by 2002 total fossil fuel CO₂ emissions', available online: http://cdiac.esd.ornl.gov/trends/emis/tre_coun.htm (4 October 2006).
- Chambers, N., Simmons, C. and Wackernagel, M. (2000) *Sharing Nature's Interest: Ecological Footprints as an indicator of sustainability* (London: Earthscan).
- Cohen, G.A. (1989) 'On the Currency of Egalitarian Justice', *Ethics* 99: 906-44.
- Daly, H. (1995) 'On Wilfrid Beckerman's Critique of Sustainable Development', *Environmental Values* 4: 49-55.
- Daneulin, S. (2002) 'Perfectionism, Paternalism and Liberalism in Sen and Nussbaum's Capability Approach', *Review of Political Economy*, 14(4): 497-518.
- Dobson, A. (1998) *Justice and the Environment* (Oxford: Oxford University Press).
- Dobson, A. (2003) *Citizenship and the Environment* (Oxford: Oxford University Press).
- Dworkin, R. (2000) *Sovereign Virtue: The Theory and Practice of Equality* (Cambridge, MA: Harvard University Press).
- Gitay, H., Brown, S., Esterling, W. and Jallow, B. (2001) 'Ecosystems and their good and services', in McCarthy et al (eds.), pp. 235-342.
- Hayward, T. (2006) 'Global Justice and the Distribution of Natural Resources', *Political Studies*, 54(2): 349-69.
- Howarth, R.B. (1997) 'Sustainability as Opportunity', *Land Economics*, 73: 569-79.
- Kamsler, V. (2006) 'Attending to Nature: Capabilities and the environment', in Kaufman (ed.), pp.198-213.
- Kaufman, A. (2006) *Capabilities Equality: Basic Issues and Problems* (London: Routledge).

- McCarthy, J.J., Canziani, O.F., Leary, N.A., Dokken, D.J. and White, K.S. (eds.) (2001) *Climate Change 2001: Impacts, Adaptation, and Vulnerability* (Cambridge: Cambridge University Press).
- McMichael, A.J. (1996) 'Human Population Health' in R.T. Watson, R.C. Zinyowera, R.H. Moss and D.J. Dokken (eds.) *Climate Change 1995: Impacts, Adaptations, and Mitigation of Climate Change* (Cambridge: Cambridge University Press), pp.561-84.
- McMichael, A.J. and Githeko, D. (2001) 'Human Health', in McCarthy *et al* (eds.), pp.451-85.
- Nussbaum, M. (1999) *Sex and Social Justice* (Oxford: Oxford University Press).
- Nussbaum, M. (2000) *Women and Human development* (Cambridge: Cambridge University Press).
- Nussbaum, M. (2006a) *Frontiers of Justice: Disability, Nationality, Species Membership* (Cambridge, MA: Harvard University Press).
- Nussbaum, M. (2006b) 'Capabilities as fundamental freedoms: Sen and social justice', in Alexander Kaufman (ed) *Capabilities Equality: Basic Issues and Problems*, pp.44-70.
- Page, E. A. (2006) *Climate Change, Justice and Future Generations* (Cheltenham: Edward Elgar).
- Page, T. (1983) 'Intergenerational Justice as Opportunity', in D.MacLean and P.G. Brown (eds) *Energy and the Future* (Totowa, NJ: Rowman and Littlefield), pp. 38-58.
- Rawls, J. (1971) *A Theory of Justice* (Cambridge, MA: Harvard University Press).
- Rawls, J. (2001) *Justice as Fairness: A Restatement* (Cambridge, MA, Harvard University Press).
- Sen, A. (1984) *Resources, Values and Development* (Oxford, Basil Blackwell).
- Sen, A. (1993) 'Capability and Well-Being', in M. Nussbaum and A. Sen (eds.) *The Quality of Life* (Oxford: Oxford University Pres), pp.30-53.
- Sen, A. (1999) *Development as Freedom* (Oxford: Oxford University Press).
- Sen, A. (2004) 'Why we Should Preserve the Spotted Owl', *London Review of Books*, 26(3): 1-5.
- Silver, L.M. (1999) *Remaking Eden: Cloning, Genetic Engineering and the Future of Humankind?* (London: Phoenix Giant).
- Stern, N. (2007) *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press).
- Sumner, L.W. (1996) *Welfare, Happiness, and Ethics* (Oxford, Clarendon Press).
- Wackernagel, M. and Rees, W.E. (1996) *Our Ecological Footprint: Reducing Human Impact on the Earth* (Gabriola Island, BC: New Society).
- White, K.S. (2001) 'Technical Summary' in McCarthy *et al* (eds.), pp.19-73.