

AUTHOR MANUSCRIPT

Global Equality of Resources and the Problem of Valuation

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The principle that every individual on the planet has a claim to an equally valuable share of Earth's natural resources has an intuitive attraction. Yet the Principle of Natural Resource Equality is not without its problems. This article focuses on the problem of valuation. Unless and until its adherents are able to develop an adequate theoretical mechanism for determining the comparative value of two or more bundles of natural resources the principle lacks applicability and persuasive force. Three adequacy constraints on such a mechanism are presented and then applied to a theorisation of the Principle of Natural Resource Equality that I have already expounded elsewhere: Global Equality of Resources. In each case I try to argue that Global Equality of Resources could satisfy the adequacy constraint, provided that both this theory and the relevant constraint are properly understood.

Keywords: global justice; natural resources; equality; Ronald Dworkin

Introduction

This article takes as its starting point the normative principle that every individual on the planet has a claim to an equally valuable share of Earth's natural resources (e.g., Barry 1982, p. 235). Call this the Principle of Natural Resource Equality. Plainly a comprehensive theorisation of this principle would contain accounts of the following: how it can be justified (such as by indicating from which more basic or fundamental moral principle(s) it follows); what regulatory principles best serve it (such as principles mandating the imposition of global taxes on the possession, extraction, trade, or consumption of natural resources, principles demanding the honouring of local property rights, or even principles calling for the free movement of people across borders should they lack access to natural resources in the countries of their birth); its relationship or interaction with other important principles of justice (such as principles of intergenerational and environmental justice).

However, I do not intend to focus on these issues here, except for making some limited observations along the way. Instead, I wish to address the following problem faced by all adherents of the Principle of Natural Resource Equality. Unless and until they are able to specify a tool or mechanism for determining the comparative value of two or more bundles of natural resources the principle lacks meaning. This could make it harder to persuade people of its truth. The absence of a valuation-mechanism might also produce indeterminate speculation about what it demands in practice. Claims about justice or injustice made on its behalf could appear baseless or arbitrary and, as a result, states may be less inclined to take it seriously even if they accepted its truth (cf. Miller 2007, p. 61). But in searching for meaning adherents of the Principle

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of Natural Resource Equality must attend to this prior question: what would constitute an *adequate* valuation-mechanism? At this point they face a dilemma. On the one hand, if the answer they give to this question is predicated upon weak adequacy constraints, they risk the possibility that several valuation-mechanisms satisfy the constraints, and so the selection of any given valuation-mechanism would be underdetermined. On the other hand, if in answer to this question defenders of the Principle of Natural Resource Equality propose adequacy constraints which are too stringent, there is a danger that no valuation-mechanism could satisfy those constraints. They will have shown that an adequate way of comparing the value of two or more bundles of natural resources does not exist. Call this the Problem of Valuation.

The main purpose of the article is to put forward three adequacy constraints *qua* solution to the Problem of Valuation. I shall then examine whether or not these constraints can be satisfied by a Dworkinian theorisation of the Principle of Natural Resource Equality that I have already expounded elsewhere, namely, Global Equality of Resources (Brown 2009, ch. 7). In doing so I also hope to respond to certain criticisms that either have been or could be laid at the door of Global Equality of Resources. I begin by presenting three possible adequacy constraints on a conception of the Principle of Natural Resource Equality. I also seek to show why these constraints are non-trivial. I then give a very brief overview of Global Equality of Resources. Following on from that, I test Global Equality of Resources against the three adequacy constraints respectively. In each case I try to argue that Global Equality of Resources could satisfy the constraint, provided that both the theory and the relevant constraint are properly understood – something that critics of the Principle of Natural Resource Equality and Global Equality of Resources alike have not always taken sufficient care in doing. Finally, I offer some very brief comments on the relative difficulty of satisfying the three adequacy constraints at the global and domestic levels, and enumerate several possible ways of justifying the Principle of Natural Resource Equality.

Before presenting my three adequacy constraints, however, I want to briefly address the issue of regulatory principles. I believe that adherents of the Principle of Natural Resource Equality should be open – or should be ready to endorse in the absence of superior alternatives – the Principle of Value Equality, according to which every individual on the planet is entitled to an equal share of the monetary value of Earth's natural resources. The difference between the Principle of Natural Resource Equality and the Principle of Value Equality is not merely semantic or hair splitting. It is the difference between an abstract principle which sets out a general vision of what global justice requires and a regulatory principle the purpose of which is to lend substance to, or provide a practical framework for realising, the abstract principle. Among some of its proponents, most notably Hillel Steiner, the idea that every individual is entitled to an equal share of the monetary value of Earth's natural resources is sometimes presented as a 'rent' to be paid by those who currently possess or benefit from an unequally large share of the value of Earth's natural resources (Steiner 1994, ch. 8; 1998, pp. 99-100n.12; 1999, p. 175; 2005, p. 37n.6). I see this as a regulatory principle that might plausibly be viewed as a substantive interpretation of, or put in the service of, the Principle of Natural Resource Equality.¹ But I shall not attempt here to present reasons for preferring the Principle of Value Equality to alternative regulatory principles *vis-à-vis* the Principle of Natural Resource Equality.

At this preliminary stage I also need to mention an objection to the use of markets in the theory of natural resource equality which speaks not to problems of

measurement as such but to equal claims. The objection stems from (a) the fact that the market value of natural resources will tend to reflect facts about their production and consumption and (b) the fact that different human beings will tend to contribute to the market value of natural resources to differing degrees in virtue of contributing to production and consumption to differing degrees (see Steiner 2005; 2011; Miller 2011). Whilst it is true that virtually all naturally-occurring entities or raw materials have *some* market value even if no factors of production (e.g., labour, capital) have been invested in them, it is also true that their full market value will reflect many different kinds of facts other than facts about the natural objects or raw materials themselves.² Facts about technological practices, for instance, can influence market values in at least two ways. First, actualising the latent potential of Earth's naturally-occurring objects or raw materials means first doing something to or with them (cf. Miller 1999a, p. 234; Hayward 2006). In other words, material resources (e.g., usable oils, gasses, rocks, metals, metalloids, wood, arable land, edible plants and fruits, meat, and drinking water) must be created from natural resources (e.g., extracting, purifying, refining, collecting, chopping, ploughing, growing, husbanding, and cooking). Hence the market prices of natural resources will reflect levels of technological know-how. Second, the market prices of natural resources will also depend on the market prices of material resources created from them, and these prices will themselves reflect the extent of technologies which employ or require material resources. Together this means that the value of silicon, say, reflects not only the existence and prevalence of technologies which can be used in its extraction and purification but also the technologies and technological practices in which it is employed as an input (once it has been very highly purified), such as the manufacture and usage of computer chips, photovoltaic panels, televisions, digital cameras, and cell phones. But not everyone contributes equally to the development of the technologies used in the extraction and purification of silicon, and not everyone makes the same usage of the technologies in which silicon is employed. The current objection to the use of market prices in the theory of natural resource equality, therefore, is that doing so could potentially introduce into the picture special claims to unequal shares (of monetary value).

I shall not seek to answer the aforesaid objection here save for making two limited points. The first is that there is more than one way for individuals to make a contribution to technological practices (broadly construed). So even if certain groups of people do not contribute to the high value of particular types of natural resources via the production of technologies used in their production or purification, or even via the consumption of the technologies in which they are employed, it is quite possible that they indirectly contribute to the high value of those particular types of natural resources by consuming products the manufacture of which is facilitated by the technologies in which those resources are ultimately employed. The second is that it may be possible to look upon people who are unable to participate in the production and consumption of technologies, directly or indirectly, as *partly* the victims of bad brute luck. Thus, in my *Ronald Dworkin's Theory of Equality* I also included a range of insurance markets in which people had adequate opportunity to purchase different types and levels of insurance against various types of risks on Mini-Earth *ex ante*, where those risked were stipulated to be equal for all individuals. This included a hypothetical insurance market in which people are assumed to face an equal risk of lacking the necessary 'development talent' to contribute to technological practices relating to the production and consumption of material resources to differing degrees (Brown 2009, pp. 194-5).³

Three adequacy constraints

How should we judge the adequacy of a conception of the Principle of Natural Resource Equality such as Global Equality of Resources? The following three adequacy constraints have emerged in the literature. The first makes it a condition that any proposed valuation-mechanism must not be reliant upon or assume the existence of some prior distribution or anticipated distribution of natural resources which is itself arbitrary (cf. Miller 2011, p. 101; Mack 2009, p. 116). The rationale behind this adequacy constraint is that we expect the valuation-mechanism to rise to the challenge of providing a non-arbitrary way of comparing the value of two or more bundles of natural resources and we could not regard that expectation as having been satisfied if it turned out that the valuation-mechanism was itself reliant upon an arbitrary distribution of natural resources.

According to the second adequacy constraint, any valuation-mechanism used to flesh out the Principle of Natural Resource Equality must be one that ‘everybody could reasonably accept’ (Risse 2012, pp. 122-3). This is, of course, a highly abstract idea – one which can be interpreted in various different ways.⁴ Thus, in what follows I shall assume that it means, at least, the following.⁵ A valuation-mechanism would not be adequate if some of the people who have a claim to equally valuable shares of natural resources cannot reasonably accept it because they legitimately feel alienated by it. The basic rationale for this constraint is that everyone has not merely a claim to an equally valuable bundle of natural resources but also a reasonable expectation that the valuation-mechanism chosen for determining their equally valuable bundle is one that resonates with them or does not seem foreign to them or from which they are not estranged. I shall say more about this below. This constraint is important partly because the stakes are high and partly because each person is presumptively capable of autonomous thought about the appropriate valuation-mechanism.

The third adequacy constraint says that a tool or mechanism for the valuation of two or more bundles of natural resources is inadequate if it involves *unfair discrimination* against an individual (or individuals). This unfairness typically takes the form of the imposition or assumption of a particular norm, rule, or practice that figures in the valuation-mechanism and that imposes, directly or indirectly, some genuine *resource-based cost or deficit* on an individual (or individuals) but not on others in virtue of some integral feature of people’s race, ethnicity, gender, age, religious belief, language, or even cultural identity.⁶ I take it as read that this constraint applies *both* to actual individuals confronted with a conception of the Principle of Natural Resource Equality and to any hypothetical individuals the existence of which is assumed as part of the specification of such a conception. The force of this adequacy constraint is that without it a valuation-mechanism could strike people as not enabling distributive justice but perpetrating distributive injustice.

To clarify, I do not mean to imply that these three adequacy constraints could capture, let alone exhaust, the set of generic constraints on *any* theory of global distributive justice. Instead, I present them as speaking directly to the specification of the Principle of Natural Resource Equality in particular, and at the same time as flowing from species of objections that either have been or could be laid at the door of Global Equality of Resources specifically.

Global equality of resources

In chapter 7 of my *Ronald Dworkin's Theory of Equality* I remodelled Dworkin's theory of equality of resources (Dworkin 1981b; 2000) as a theory of global distributive justice under the heading Global Equality of Resources (Brown 2009, ch. 7).⁷ I imagined that at some time in the near future the people of Earth are forced to abandon their planet after an unforeseen and unprovoked alien onslaught. After travelling aimlessly in space for a period time the survivors (a small number from each nation) find themselves space-shipwrecked on a small planet (Mini-Earth) which has abundant natural resources (p. 171). After making various other assumptions (pp. 172-3), I imagined that the new inhabitants of Mini-Earth elect a divider who institutes an auction of bundles of natural resources, with Mini-Earth clamshells used as bidding counters. Reflecting on the international dimension of the remodelled thought experiment I also examined the question of whether the auctioneer should hand out clamshells to individuals or to representatives of nations. In the book I came down on the side of allocating clamshells to individuals for reasons of satisfying the original envy test and ethical individualism (pp. 174-6).

In this article I want to investigate more deeply the implications of the aforementioned Problem of Valuation for Global Equality of Resources.

First adequacy constraint: avoiding arbitrariness

According to the first adequacy constraint, a valuation-mechanism cannot be reliant upon or assume some prior distribution or anticipated distribution of natural resources which is itself arbitrary. Some people have argued that any specification of the Principle of Natural Resource Equality and the Principle of Value Equality that appeals to market prices cannot satisfy this requirement. This line of scepticism might apply to Global Equality of Resources as follows. The Mini-Earth auction creates valuations which partly reflect the importance that bidders place on particular bundles of natural resources as potentially useful means of achieving their desired ends and the extent to which resources are in limited supply. However, it is also the case that desired ends and buying decisions are not fixed but instead respond to actual or anticipated bundles of natural resources. But if auction prices are partly determined by the various desires and buying decisions that people develop in response to actual or anticipated bundles of natural resources, then there exists no independent set of prices (i.e., independent of some prior distribution or anticipated distribution of natural resources) which could be used to determine equally valuable bundles of natural resources. In other words, auction prices are supposed to tell us how to distribute natural resources non-arbitrarily but at the same time they assume some prior distribution or anticipated distribution of natural resources which itself may seem arbitrary, and so we are back to square one. The apparent arbitrariness stems from the fact that for any bundle of natural resources someone ends up with he or she could complain that its constituent elements could have been different under an alternative initial distribution or anticipated distribution of natural resources and its concomitant pattern of desires and buying decisions.⁸

Ironically, this objection to using auction prices to determine the value of bundles of natural resources also bears certain similarities with one of Dworkin's main objections to equality of welfare. Consider relative success theories of welfare, where relative success is defined by how successful an individual has been in fulfilling his or

her preferences, goals and ambitions. Dworkin points out that individuals ‘make their choices, about what sort of life to lead, against a background of assumptions about the rough type and quantity of resources they will have available with which to lead different sorts of life’ (Dworkin 1981a, p. 205). Given this fact, the problem is to explain how equality of relative success could be measured without drawing on some independent conception of fair shares. How would we know what resources to transfer to each person such that everybody enjoys equality of welfare if the composition and extent of relative success at any given time reflects facts about the distribution of the very resources that we want to know how to distribute? There is, as Dworkin puts it, ‘danger of a fatal circle here’ (p. 205).

However, it is important to remember that the present adequacy constraint does not say that a tool or mechanism for the valuation of two or more bundles of natural resources may not be reliant upon some prior distribution or anticipated distribution of natural resources. Rather, it says, in effect, that *if* the valuation-mechanism is reliant upon some prior distribution or anticipated distribution of natural resources, the latter must not be arbitrary. So the question is whether the distributions or anticipated distributions that influence the desire ends and buying decisions which partly determine auction prices are themselves arbitrary.

I suggest that these prior distributions or anticipated distributions need not be arbitrary. There are two forms of non-arbitrariness I will mention. The first has to do with the actions of the divider. In both Dworkin’s original thought experiment and my Mini-Earth version the divider does not act on random choice or personal whim. He is tasked with finding a process that can produce a distribution that will satisfy the envy test, and he reasons that an auction is a rational means of pursuing that end. He acts in a systematic way by trying to identify natural objects that people would recognise and want to bid for as separate lots and by dividing quantities of raw materials into roughly the same number of lots as there are people. The auctioneer also hands out equal numbers of Mini-Earth clamshells to everyone without prejudice or favouritism. The auction is conducted and it produces what is a first approximation of what equally valuable bundles of natural resources might look like. Clearly this is not a perfect realisation of equality, but that does not make it arbitrary therefore. The term ‘arbitrary’ might suggest, on one reading, a set of valuations that are determined by the whim of one person. But that is not the case here. Quite the opposite in fact. It is true that the auctioneer creates the original lots, but he or she exercises no partial discretion over what those lots should be. Instead, he or she responds to requests for different lots wherever feasible. He endeavours to ensure that in each equally valuable bundle persons end up with – to steal a phrase from Steiner – ‘more of what they value more and less of what they value less’ (Steiner 2011, pp. 121-2). The point is that the auction is an iterative process, which, to borrow from Dworkin’s description of the original thought experiment, means that ‘each of the immigrants remains free to change his bids even when an initially market-clearing set of prices is reached, or even to propose different lots’ (Dworkin 1981b, p. 287). Thus, ‘[t]he auction is run again and again until nobody prefers anyone else’s bundle and the survivors come to understand and accept that they cannot do better by further iterations of the auction’ (p. 287n.3).

Second, it might be argued that arbitrariness, on another reading, is a set of valuations that are determined by any factor for which people are not presumptively responsible. But it seems to me that the charge of arbitrariness, in this other sense, of the valuations which occur during the iterated auction process can be countered by further reflection on the attitudes or dispositions that bidders may have toward the

aforementioned prior distributions or anticipated distributions. These distributions do not merely influence desires and buying decisions but are themselves influenced by the desires and buying decisions that emerge in earlier iterations and these desires and buying decisions need not be arbitrary, I think. Specifically, there may be a morally relevant difference between desires and buying decisions that a person develops in response to his or her *good faith* estimates of what an equally valuable bundle of natural resources is likely to be once the process has been completed, on the one hand, and desires and buying decisions that a person develops when motivated by a *flagrant disregard* for such estimates, on the other hand. In the former case a person is disposed to develop desires and buying decisions based on the cumulative evidence created by each iteration of the auction concerning what equally valuable shares are likely to be. This does not mean that he or she only desires what is affordable. It is perfectly acceptable for desires to sit above and below reasonable expectations. But it does mean that in the former case desires and buying decisions (such as they are) supervene upon good faith estimates of just end results. Perhaps the estimates will be less accurate at the start of the process than at the end, but based on what happens during the iterations the estimates may become more fine-tuned as the process unfolds. Surely if it is the case that by and large people's desires and buying decisions are based on good faith estimates of just end results, this would lend further credence to the claim that the prior distributions and anticipated distributions which influence the end results are *not* arbitrary, in the sense that the valuations reflect factors for which people are presumptively responsible. This might be a circle, but it need not be a fatal circle.

Of course, my argument here relies on contingent facts about what actually motivates people, namely, good faith estimates as opposed to a flagrant disregard for such estimates. But the operative assumption need not be viewed with suspicion, especially when viewed in the context of ideal theory. It speaks to a type of ideal theory in which it is assumed for the purposes of developing a coherent conception of the Principle of Natural Resource Equality that people are already committed to that principle, abstract as it may be, and are motivated as far as possible to act in ways which aid its realisation.

I also believe that this assumption, or something like it, underpins Dworkin's rejection of the suggestion that 'bad price luck' – 'bad luck in the high cost of the preferences [people] have' – is a source of valid claims for redistribution (Dworkin 2004, p. 344). Persons can only suffer bad price luck if they have a set of preferences they cannot afford to satisfy, but they develop their preferences based on what resources they have and information about what resources they will need in order to satisfy possible preferences. If bad price luck were a source of valid claims for redistribution, then no sooner have everyone's claims been met than people will develop new preferences which in turn will change prices thus generating more bad price luck and further claims (p. 344). For Dworkin, one might say, it is a working assumption within the theory of equality of resources that people are presumptively responsible for deciding for themselves what sorts of lives to pursue including cultivating preferences against a background of information about the social value of the resources they need in order to live different kinds of lives including the satisfaction of various preferences, and against a background of information about what equal shares might turn out to be (pp. 344-50; cf. Dworkin 1981b, p. 205).

Second adequacy constraint: avoiding alienation

According to the second adequacy constraint – under my proposed interpretation – a mechanism for the valuation of two or more bundles of natural resources would not be adequate if some of the people who have a claim to equally valuable shares of natural resources cannot reasonably accept it because they legitimately feel alienated by it. Interestingly, Risse alleges that Dworkin’s device ‘does not provide what defenders of Equal Division need’ (Risse 2012, p. 123), namely, ‘a uniquely most plausible way of assessing the value in question, one that everybody could reasonably accept’ (pp. 122-3). What is more, Risse claims that my own proposal for how to adjust Dworkin’s device for the global sphere ‘does not solve the problem we are discussing now’ (p. 382n.23). But what reason might there be to think that participants in my Mini-Earth version of Dworkin’s auction cannot reasonably accept the auction mechanism? More specifically, what reason might there be to think that participants could legitimately feel alienated by it?

Consider once again the example of silicon valuation. Suppose Mini-Earth’s large silicon deposits command a relatively high value in the auction because it is anticipated that most inhabitants are minded to possess and partake in the various technologies and technological practices associated with both the purification and the use of silicon. But suppose that a group of inhabitants, call them the Luddites, are committed to neither possessing nor partaking in these technologies and technological practices. Could they legitimately feel alienated by and, therefore, reasonably not accept the auction mechanism because when applied to silicon its output valuation reflects the existence of social contexts or practices which they reject?

I believe not. Now I do not deny that Luddites could feel alienated by modern technology and the particular ways of life it promotes or to which it especially lends itself. And that this alienation could lead them to also feel alienated by a valuation-mechanism that placed a relatively high value on the natural resources exploited by and employed in the creation of modern technology. But it does not follow from this that the sense of alienation is legitimate or could be grounds to reasonably not accept the valuation-mechanism itself. Faced with people who felt alienated by the auction mechanism because of the way silicon, say, ended up being valued – that is, because of their rejection of social contexts and practices associated with the purification and use of silicon – the auctioneer could point out that the auction mechanism also places a relatively high value (let us assume it does) on Mini-Earth’s small deposits of the special varieties of stone, wood, and reed that are commonly used in traditional arts and crafts – social contexts and practices that are to the Luddites’ liking. One might go so far as to say that the Luddites *can* – or *should* – accept the mechanism because of the way special varieties of stone, wood, and reed end up being valued – that is, because of their acceptance of social contexts and practices associated with the harvesting and utilisation of special varieties of stone, wood, and reed. In light of these facts the Luddites’ feeling of alienation toward the auction mechanism might seem misplaced and not legitimate. In other words, they cannot legitimately expect to feel an affinity with all of the social contexts and practices upon which the valuations of the very different natural resources depend, not least because of the plurality of conceptions of the good life found on Mini-Earth. So long as their sense of estrangement is limited, there is no grounds for their reasonable non-acceptance. Perhaps in one sense this observation amounts to an affirmation of the auction mechanism as a legitimate way of adjudicating between not merely competing claims to the use of natural resources but also competing claims to social contexts and practices (cf. Dworkin 1981b, p. 338).

Third adequacy constraint: avoiding unfair discrimination

The third adequacy constraint says that a tool or mechanism for the valuation of two or more bundles of natural resources is inadequate if it involves *unfair discrimination* against an individual (or individuals). According to Avery Kolers (2012), one potential form of unfair discrimination emerges if one considers the plight of people who, for reasons of maintaining their cultural traditions, wish to use certain natural resources for uses other than their most profitable uses. He writes as follows.

For example, suppose it is 1930 when a Dworkinian resource auction transpires. The Bedouin population of Arabia is not interested in oil. The Bedouins have a lifestyle adapted to low population density and geographic mobility in the Arabian Desert. If they are to prevent the land being purchased by oil entrepreneurs with the backing of millions of people in industrialized societies, they will have to outbid all those people; having done so they will have to find a way to meet all the other needs that they no longer have the resources to meet in their preferred ways. They can do so either by becoming oil workers themselves, or by inviting in foreign oil workers and taking a cut of the proceeds in order to pay the tax on the resource bundle. If they cannot or choose not to outbid the industrialized horde, they will end up out of Arabia – or, if in Arabia, they will lose their geographic mobility and have to find something else to do. Perhaps they can become oil workers. What the Bedouins need here, if they are to keep their (by no means opulent) way of life when challenged by a theory of just distribution of resources, is the capacity to deny that the oil under their feet is a resource. Dworkin's auction might treat all persons equally given a shared ontology of the material world, but it does not treat all persons equally given differences in the prevalence of such ontologies. (Kolers 2012, p. 276)

Now it is not at all clear to me how 'oil entrepreneurs with the backing of millions of people in industrialized societies' can be thought to exist within the narrow terms of Dworkin's hypothetical desert-island auction; let alone my Mini-Earth auction. But let us just suppose that the Bedouins are bidding against a group of survivors who believe they have found an ingenious way to achieve large-scale oil extraction with only their per capita equal share of clamshells. What should we make of Kolers' objection?

It strikes me as both perverse and culturally patronising to suggest that the Bedouins ought to be given an opportunity to 'deny that the oil under their feet is a resource'. After all, Bedouins are likely to want to purchase this *resource* in post-auction markets for everyday use in oil lamps. Surely what they need instead is the opportunity to bid for suitable desert land, which has oil underneath it, without being obliged to bid under a liberal liberty/constraint system that permits oil entrepreneurs to probe, extract, and spoil the land without regard to what this does to market prices and the Bedouin way of life. It is worth stressing that what is potentially unfair here is the fact that individual Bedouins are being forced to pay a price that reflects a non-neutral liberty/constraint system. There is perhaps more than one solution here,⁹ but I would propose that the auctioneer creates separate lots, some with desert land attached to liberal ownership rights and some with desert land bound together with more restrictive ownership rights, including rules against gratuitous oil exploration, of

a sort that Bedouins and perhaps environmentalists might wish to bid for (Brown 2009, pp. 179-80, 215-6n.2). This means that at least when the Bedouins decide to bid for desert land bound together with more restrictive ownership rights they will not face competition from oil entrepreneurs of the sort which would otherwise make the land very expensive. Indeed, when prices reach their equilibrium it may be the case that some Bedouins would wish to bid for at least some of the liberal lots (so that they have the option to sell the land to interested parties in the future, or perhaps even the option to change their own way of life in the future, should they so desire).

I now wish to address possible grounds for complaint that I believe do *not* reach the level of unfair discrimination. I have in mind people who possess culturally-based preferences for, or interests in, the adoption of non-market mechanisms for the valuation of some or all of the available natural resources. In cases of *partial rejection* people do not reject the proposed valuation-mechanism outright but they cannot accept the application of the valuation-mechanism to *all* natural resources because they would prefer it if, or have an interest in its being the case that, at least *some* resources are valued in other ways. Imagine that among the people space-shipwrecked on Mini-Earth are members of highly traditional and ritualised societies for whom it is conventional to regard the value of certain natural objects as given by the practices of gift-giving and funeral rites. They should like to look upon at least some of the natural objects found on Mini-Earth as bearing value *only* as gifts or as sacrifices to the spirits of their ancestors and *not* as things which command prices within an auction.¹⁰ In cases of *full rejection* certain people cannot countenance a proposed valuation-mechanism as the specification of the Principle of Natural Resource Equality for *any* natural resources. Suppose that some of the inhabitants of Mini-Earth develop a new theology in response to their circumstances. They waste no time in recognising the fact that virtually all of the natural objects found on Mini-Earth bear a striking resemblance to those found on Earth. They feel compelled by these discoveries to accept this as conclusive evidence of a kind of cosmic intelligent design. And they adopt a new way of seeing value in the objects they see around them, namely, as the products of the infinite capacity for creativity of their God. While they treat all natural resources on Mini-Earth as blessed, they perceive that some objects are more intricate, complex, beautiful, and sublime than others. They further reason that by endowing them with the capacity to sense or intuit degrees of quality in natural objects God wanted to disclose to them His divine system of valuation. So they make it their mission to interpret in what they see around them the signs of what God would have them revere to greater or lesser extents and based on this they swiftly draw up their own assessments of the comparative *sacred value* of different bundles of natural resources. As such, they denounce the auction and its concept of price as the mere projection of secular, anthropocentric and humanistic values onto the world.

My position is that partial or full rejection of the auction mechanism by the traditionalists and the religionists on the aforesaid grounds does not rise to the level of a complaint of *unfair discrimination*. I offer two reasons for this position. The first is that neither the traditionalists nor the religionists are themselves claiming – nor is it necessarily true – that the auction has left them with less of what they value more and more of what they value less than some alternative method they favour. Even though ordinary non-traditionalists and non-religionists are not totally oblivious to the fact that the traditionalists and the religionists might prefer a different valuation-mechanism, other things remaining equal the former have no particular reason to bid for the natural objects most revered or held most sacred by the latter, and so the prices of the auction lots containing those objects are not artificially inflated. And there is no

unfair discrimination on that score. Indeed, there is a sense in which the auction valuation of natural resources at equilibrium itself reflects the different preferences and interests concerning the best ways to value natural resources that individuals bring to the auction. In other words, the traditionalist and religionists are not being denied the right to pursue their alternative schemes of valuation through the auction mechanism itself. The traditionalists can bid for certain types of natural resources which would be suitable for their socio-cultural practices, so that their bidding decisions reflect the ways *they* value or would like to value those resources. And the religionists can choose to bid for certain natural resources in accordance with their own scheme of valuation as their consciences dictate. So adopting the auction is a way of indirectly accommodating a range of different ways of valuing natural resources by converting the diversity of possible schemes of valuation into a single mechanism *qua* overarching touchstone. Underpinning this mechanism is a respect for people's *freedom* to bid for lots on the basis of their own schemes of valuation.

Of course, at this point the traditionalists and the religionists could insist that even if the auction mechanism indirectly accommodates their preferences and interests, it remains the case that it is the auction mechanism rather than *their* preferred mechanisms which is used for valuing resources. They may not care frankly that only the auction has the ability to accommodate different schemes of valuation. However, my second reason for adopting the aforementioned position is that the preferences or interests that support these kinds of deep-level objections go beyond the narrow project of finding an adequate conception of the Principle of Natural Resource Equality. The traditionalists and the religionists are effectively refusing to accept the mechanism because it sits uneasily with their cultural beliefs, commitments, or ways of life such that employing it imposes *unwanted burdens* upon them. These burdens might include: unsatisfied preferences concerning the operative valuation-mechanism; certain feelings of unease or regret that an individual might experience as a consequence of the failure to satisfy these preferences; the fact of living with a sacrilegious valuation-mechanism; the burden of having to reverse the commodification of certain natural objects by bidding for them in the auction and then keeping them off the market (as objects that are suitable for socio-cultural practices and the true value of which has nothing to do with market price). Earlier I defined unfair discrimination in terms of the idea of resource-based costs or deficits. And whatever else one might want to say about the aforementioned unwanted burdens it is clear that they do not fall easily into the category *resources*, even if they *do* fall into the categories *welfare* or *capabilities*. And so there is no unfair discrimination on this score either. Putting the point another way, my primary interest in this article is not welfare-based or even capability-based egalitarian objections to resource egalitarianism: i.e., reasons of the form, "I agree that justice demands equality of something, but I cannot agree that this ought to be equality of resources." Instead, my interest is with the narrower question of whether it is possible to develop an adequate conception of the Principle of Natural Resource Equality: i.e., reasons of the form, "I intuitively believe in the Principle of Natural Resource Equality, but I am not yet convinced that any of the leading conceptions of that idea are adequate."

In summary, I have suggested that the Problem of Valuation calls for the avoidance of two extremes: first, embracing adequacy constraints on a conception of the Principle of Natural Resource Equality that are too weak, trivial or simple to overcome such that a decision to use one valuation-mechanism rather than another will be underdetermined; second, embracing adequacy constraints that are too strong, demanding or difficult to overcome such that it is impossible to specify the principle

in terms of any adequate valuation-mechanism. I have tried to avoid these two extremes by adopting three adequacy constraints on a conception of the Principle of Natural Resource Equality – that have to do with the avoidance of arbitrariness, alienation, and unfair discrimination respectively. Moreover, I have sought to show that Global Equality of Resources has the wherewithal to satisfy each of these constraints provided that it as well as the constraints are properly understood.

Justifying the Principle of Natural Resource Equality

Thus far I have assumed rather than justified the Principle of Natural Resource Equality. So in this section I will offer some possible justifications for it. But before doing so, I want to briefly address the question of whether or not the three adequacy constraints discussed above are *only* relevant to resource egalitarianism conceived at the global level. According to Miller, ‘if we are thinking about the issue globally, it becomes problematic to define equality by applying Dworkin’s favoured rules [of liberty/constraint]’ (Miller 1999b, p. 192). But is it true to say that the specification of resource egalitarianism ‘becomes problematic’ at the global level? Surely much depends on the kind of state one has in mind. If the citizens of a state possess a common understanding of the point and purpose of political community and shared beliefs about what constraints ought to be placed upon the pursuit of political goals, then in that case the problems of defining equality of resources will not be as severe as the problems of defining equality of resources at the global level where common understanding and shared beliefs tend to be in short supply. In contrast to this, if the citizens of a state lack this common understanding and shared beliefs, this is likely to present problems similar to those at the international level (Brown 2009, p. 177).

Therefore, from the perspective of the issues discussed in this article the main difference between the domestic and global levels is not the kinds of adequacy constraints that ought to be imposed on a specification of the Principle of Natural Resource Equality but the relative difficulty of satisfying those constraints. For example, within the context of Dworkin’s original thought experiment it might be appropriate to imagine, reflecting the existence of actual democratic institutions at the domestic level, that all of the people shipwrecked on the island are given ample opportunity in a sort of ‘town meeting’ to voice their concerns about the proposed auction at the point when the divider is deciding what to do with the natural resources. Suppose that the divider does not make a decision until all the main objections have been aired. It just so happens that any traditionalists or religionists who object to the auction do not win the debate. But arguably they would have less grounds on which to object since they participated in the process of deliberation and opinion formation upon which the divider based his or her final decision. It is more difficult to warrant building a similar hypothetical town meeting into the Mini-Earth thought experiment given the comparative lack of democratic institutions at the global level (i.e., institutions which give all human beings a direct or indirect say in key decisions).

Of course, for Dworkin, it is precisely because features of *true political community* (i.e., political dominion, democracy, legal integrity, and fraternity), which are characteristically found at the domestic level, are absent at the global level that talk of global distributive justice is quite so problematic. Nevertheless, in chapter 5 of *Ronald Dworkin’s Theory of Equality* I argued that the existence of true political community, in Dworkin’s sense, at the global level is not a necessary condition for asserting principles of global distributive justice because other things, including but

not limited to being subject to a coercive international legal and political order and the profound and pervasive impact of international economic practices on people's access to resources can be sufficient conditions (Brown 2009, pp. 123-9).¹¹

So I want to stress that remodelling Dworkin's thought experiment for the global sphere is more than just a provocative attempt to see how far Dworkin's ideas can be stretched in spite of Dworkin himself. It carries the promise of a specification of the Principle of Natural Resource Equality which, if adequate, could figure in a plausible theory of global distributive justice, along with other sorts of principles. But to pick up on the previous paragraph, the project of specifying the Principle of Natural Resource Equality would be in vain if it were not allied to, amongst other things, an account of the preconditions or grounds for posing questions of global justice.

Turning to the question of justification, I believe that there are several possible ways of justifying the Principle of Natural Resource Equality, some more attractive than others. One way is to say that in the absence of any special or antecedent right to Earth's natural resources no individual has a right to possess more than his or her equally valuable share (Barry 1982, p. 235).¹² For example, it might be argued that since no single human being created Earth's natural resources – or no single human being played a significantly different role in this regard than other human beings – no single human being may lay claim to an unequally valuable share (Mazor 2010, p. 385). Or, even more abstractly: given that there are no morally relevant differences between human beings *vis-à-vis* Earth's natural resources people have equal claims to those resources (Miller 2007, pp. 54-56).

Alternatively, one might try to derive the Principle of Natural Resource Equality from the fundamental principles of luck egalitarianism. One such principle is that global justice requires the elimination of brute luck – call this the Principle of A Priori Global Luck Egalitarianism. The operative justification is that the distribution of natural resources across the globe is exactly the sort of luck which ought to be eliminated.¹³ Another variant attempts to draw out the Principle of Natural Resource Equality from the Principle of Institutional Global Luck Egalitarianism, according to which the distribution of natural resources across the globe is in a sense arbitrary it is neither just nor unjust in itself; but what can render it just or unjust is what institutions do with natural resources *vis-à-vis* whether or not institutions furnish people with equality of *access* to natural resources. If institutions permit or enable some people to appropriate or monopolise the benefits of appropriating natural resources whilst excluding others from so doing, then this is unjust.¹⁴ An alternative (and in my view superior) luck egalitarian principle is the Principle of Interpretive Global Luck Egalitarianism. It treats the Principle of Natural Resource Equality as enjoined by certain interpretive luck egalitarian requirements that have to do with mitigating the effect of brute luck and upholding responsibility for choice against a background of equality of opportunity, but at the same time it views these requirements as part and parcel of constructive interpretations of various sorts of domestic and international institutions, rules, and practices governing the distribution of access to natural resources, broadly understood.¹⁵

Yet another approach is to derive the Principle of Natural Resource Equality from the Principle of Collective Ownership: that Earth's natural resources originally belong to humankind collectively or jointly. This derivation would depend on strong reasons for permitting the conversion of collective or joint ownership rights into a series of individual entitlements to private holdings. It is possible that some of these reasons could in turn point in the direction of the Principle of Natural Resource Equality as the most appropriate way of regulating the overall shape of individual entitlements.

Having said that, there may also be compelling reasons to resist this conversion for some of Earth's natural resources. According to Miller, for example, 'there may be good reasons for not distributing these resources to individuals as private holdings – they may, for instance, play an essential part in ecological processes that are of general benefit, such as the water cycle' (Miller 1999a, p. 234).

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Notes

¹ I do not claim, however, that this is how Steiner sees it.

² How far the resources are located from human settlements and production sites, how much taxation must be paid to possess, transport, and use the resources, levels of human knowledge, ingenuity, and technology that can be brought to bear on natural resources – these and many other facts influence the usefulness of natural resources to the pursuit of desired human ends.

³ Of course, this proposal also attracts the generic objection to Dworkinean insurance schemes that they fail to fully compensate the victims of bad brute luck. See Otsuka (2002) and Knight (2009), ch. 1. I do not have space to respond to that objection here.

⁴ For Risse's substantive interpretations, see his (2012), pp. 122-3, 381-2n.22.

⁵ I do *not* assume that my own interpretation matches one or more of Risse's interpretations, but I also do not rule out that possibility.

⁶ This constraint builds upon Miller's critique of liberal, free market mechanisms for the valuation of bundles of natural resources. See Miller (1999b), pp. 192-3 and (2007), pp. 61-62.

⁷ In my book I also presented Global Equality of Resources as enjoined by interpretive global luck egalitarianism, which itself is designed to offer a constructive interpretation of various international institutions, rules and practices. See Brown (2009), chs. 6 and 7. In addition to this, I emphasised the fact that this remodelling of Dworkin's original theory was undertaken in spite of Dworkin's own scepticism about the appropriateness of formulating principles of distributive equality at the global level. *Ibid.*, ch. 5. For the purposes of the present article, however, my theory of Global Equality of Resources need not be conceived in all of the aforesaid ways. But where I do rely upon these other aspects I shall make this clear.

⁸ It is worth noting that Steiner initially claimed – and then later recanted the claim – that the problem of arbitrariness afflicts the Principle of Value Equality when interpreted by and through the mechanism of market prices. See Steiner (1981), p. 563; cf. his (1994), ch. 5, s. (D). His rationale for recanting that claim was essentially that on closer inspection there is nothing arbitrary in the sense of morally unjustified *per se* in the fact that market prices are sensitive to the preferences, desires and buying decisions that people develop in response to actual or anticipated bundles of natural resources. Steiner (1994), pp. 271-2n.11. In his (2011) Steiner explained his recantation thusly: 'In order to keep things simple, we'll consider a world with only two kinds of natural resources: arable fields and coastal beaches, in equal numbers of

acres. To this world we bring two successive generations: an earlier one which is predominantly industrious (EI), and the later one, their offspring, who are predominantly lazy (LL). So it's reasonable to assume that, before the arrival of LL, the value of a field acre was greater than that of a beach acre. Let's suppose that their exchange ratio (market price) was 1f:4b: that is, one field acre exchanged for four beach acres. Had LL, with its stronger preference for leisure, arrived earlier than EI, the market price that would have been formed by exchanges among its members is, say, 3f:4b. But since LL did not arrive earlier than EI, its members' initial natural resource shares are calculated on the basis of the prevailing (EI-formed) 1f:4b price. What this means is that their equal shares each contain more beach acres and less field acres than if they had been calculated on the basis of the 3f:4b price. That is, *LL members' equal shares contain more of what they value more and less of what they value less*. Hence it's difficult to see how the use of EI prices – market prices – adversely affects later arrivals' initial shares and is consequently tainted by partiality.' Steiner (2011), pp. 121-2.

⁹ One possibility is to pull apart and separately auction each of the various claims, powers, immunities and liberties that bear on the disposition of particular natural resources. However, Dworkin rejects that proposal on the grounds that 'no one can intelligently, or even intelligibly, decide what to bid for in an action, or what price to bid for it, unless he makes assumptions about how he will be able to use what he acquires.' Dworkin (1987), p. 20.

¹⁰ This example is inspired by Michael Walzer's discussion of the *Kula* ring practice of the Trobriand Islanders in his (1983), pp. 123-5. Note, however, I would rule out a potential solution to this problem in which the auctioneer simply gives the Mini-Earth clamshells to the traditionalists once the auction is completed, so that they can use these clamshells for their practices of gift-giving and funeral rites. It is unlikely that the divider could both let the traditionalists have all the clamshells and satisfy the envy test. If the clamshells are, in effect, added to the traditionalists' bundles of natural resources after the auction, then some non-traditionalists may have cause to envy the traditionalists' bundles, especially if they can think of some practical uses to which the clamshells might be put, like digging sand, carving wood, holding food, and so on. Consequently, we might simply assume for the sake of argument that *everything* goes into the auction and the auctioneer and bidders simply keep in mind a running total of how many virtual bidding counters everybody has.

¹¹ For other pluralistic approaches to the grounds of global distributive justice, see Risse (2012), ch. 1 and Wolff (2009). Note, however, that Risse finds the Principle of Natural Resource Equality problematic regardless of adopting a pluralistic approach to the grounds of justice, and Wolff does not discuss the principle.

¹² Interestingly, this kind of justification has also been used to support the Principle of Equal Value. See Steiner (1994), ch. 8 and (1999), pp. 174-5. And to support the Principle of Collective Ownership: that Earth's natural resources originally belong to humankind collectively. See Blake and Risse (2009), p. 134.

¹³ For a range of different criticisms of this argument, see Schemmel (2007) and Brown (2009), pp. 151-3.

¹⁴ Some versions of this approach point to domestic institutions as the source of the injustice. See Fabre (2007), p. 149. Other versions instead point to international institutions. See Tan (2012), p. 153. For an account of some potential weaknesses in institutional approaches, see Brown (2009), pp. 154-6.

¹⁵ For a full statement of this view and comparisons and contrasts with a priori global luck egalitarianism and institutional global luck egalitarianism, see Brown (2009), pp. 151-6, 184-6, 198-203.

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