

Cosmopolitanism, climate change, and greenhouse emissions trading

EDWARD A. PAGE

Department of Politics and International Studies, Warwick University, Coventry, UK

E-mail: e.a.page@warwick.ac.uk

This article examines the question of whether international markets in allowances conferring the right to emit greenhouse gases are consistent with a cosmopolitan approach to global and intergenerational justice. After placing emissions trading within the context of both climate change policy and cosmopolitan political theory, three normative objections are examined to the use of emissions trading to mitigate the threat of dangerous climate change. Each objection arises from a different application of cosmopolitan thinking: (i) the potentially corrosive impact of greater use of emissions allowances markets on the environmental values of successive generations of atmospheric users; (ii) the awkward relationship between emissions markets and the norms of procedural justice endorsed by all prominent cosmopolitans; and (iii) the injustice expressed by policy instruments that commodify the atmosphere. It is argued that, while each objection should prompt some care in the construction and implementation of emissions trading schemes to guarantee their legitimacy among existing and future users of the atmosphere, they do not generate a decisive normative challenge to the use of markets, properly defined and regulated, to slow global warming.

Keywords: global justice; cosmopolitanism; climate change; environmental policy; emissions trading; future generations

A number of challenges face the international community in its ongoing search for an environmentally effective response to global climate change. One key challenge is to design and implement a set of policies that will limit global warming over the next century to 2°C or less. Numerous scientific bodies, environmental organizations and over 190 governments have now declared this objective to be central to the prevention of dangerous climate change (UKDECC, 2009: 5; UNFCCC, 2009: 1–2). Recent research indicates that to have a reasonable chance of fulfilling this objective, annual global emissions of greenhouse gases must peak by 2016; that global greenhouse emissions must fall thereafter by 4% or more per annum; and total atmospheric stocks of greenhouse gases, as expressed in terms of their carbon

dioxide-equivalent (CO_2^e),¹ must be kept below 500 ppm (Meinshausen *et al.*, 2009: 1160; Stern, 2009: 39–55). The size of this task is evidenced by the fact that global stocks of CO_2^e exceeded 430 ppm in 2005 and have since risen by roughly 3 ppm each year (Solomon *et al.*, 2007: 25; Tans, 2010).²

An extensive literature now exists that analyses rival international climate policy frameworks, as well as the particular instruments they systematize, in terms of their potential to fulfil the 2°C climatic objective at least cost to present and future generations (Aldy and Stavins, 2008; Stern, 2009). The challenge of global climate policymaking cannot, however, be reduced to the technical challenge of devising a suite of policies that score highest in terms of economic efficiency and environmental effectiveness. Norms of political legitimacy, distributive justice and procedural fairness also play a critical role.

If an environmentally effective, just and cost-efficient climate response is the objective, what are the policy mechanisms they can help us pursue this objective? There are five main types of policy (Jacobs, 1991: 134–148; Carter, 2007: 321–352).

- (i) Direct governmental regulation (e.g. specific limits on industrial or household emissions enforced by legal rules and orders).
- (ii) Government expenditure (e.g. subsidies or infrastructure spending designed to encourage renewable energy).
- (iii) Market-based mechanisms (e.g. carbon taxes or pollution trading schemes) that encourage atmospheric users³ to internalize the full cost of their GHG emissions.
- (iv) Negotiated voluntary agreements (e.g. energy-efficiency agreements reached between regulators and trade associations).
- (v) Informational measures (e.g. environmental labelling or the publication of league tables of heavy emitters).

While all of the above mechanisms continue to play a role in international and domestic climate policymaking, the first three types of mechanism have been dominant. Market-based mechanisms, in particular,

¹ CO_2^e is a useful unit of measurement that converts the atmospheric concentrations of all greenhouse gases into equivalent amounts of CO_2 so that climate forcing from different emissions sources and time horizons can be expressed.

² The focus on cumulative, rather than annual, emissions reflect the fact that greenhouse gases are ‘stock pollutants’. The changes in the climate system these gases force are a function of their accumulation over many generations and not of their release over any particular year.

³ By ‘atmospheric users’ I mean agents whose interests are affected, and whose agency is targeted, by climate change and policies designed for its management. Such agents may be states, groups of states, firms, municipalities, or individual persons.

remain at the very heart of post-Kyoto⁴ and post-Copenhagen⁵ climate policymaking, with emissions trading emerging as the variant of choice in the United States, European Union (EU), and increasingly, in China (UK Government, 2008; European Union, 2009; US Congress, 2009). The global penetration of emissions trading in the last decade has been such that, by the end of 2009, the value of the emissions trading markets had grown to over 140 billion \$US – with just under 9 billion tonnes of CO₂^e being in 2009 (Kossoy and Ambrosi, 2010: 1).

Owing to the dominance of mainstream economic analysis in climate policy debates, there have been comparatively few analyses of emissions trading from the perspective of normative ethics. Instead, analyses of emissions trading have tended to focus on two questions of economic theory and practice detached from any independent treatment of questions of normative justification. First, to what extent and how emissions trading might bring about environmental outcomes superior to its competitors *in theory*? Second, to what extent emissions trading can be seen as a reliable, and cost-efficient method of safeguarding environmental quality *in practice*? Both questions are, of course, relevant to the normative question of whether emissions trading can be seen, all things considered, as an ethical response to climate change. But, the dominance of discourses of cost efficiency and environmental effectiveness has served to marginalize the role of other parameters of policy evaluation such as environmental responsibility, distributive equity, procedural fairness, and political legitimacy. The downplaying of these normative discourses in mainstream climate policy debates is particularly problematic in the case of emissions trading given its relative youth as compared to rival mechanisms, the fact that these rivals have already attracted substantial normative literatures, and the apparent complexity of emissions trading markets.⁶

In this paper, I address this lacuna by adopting a ‘broadly cosmopolitan’ test for the legitimacy of climate policy architectures and associated mechanisms. Cosmopolitanism is a tradition of thought that resists simple

⁴ The Kyoto Protocol of 1997, which entered into force on in February 2005, requires 38 developed countries to cut their collective annual emissions of a basket of six greenhouse gases by 5%, relative to their 1990 level, by the end of 2012.

⁵ The Copenhagen Accord of December 2009 urges international cooperation to keep global warming to 2°C or less (UNFCCC, 2009: 2).

⁶ Following Satz (2010: 15), I conceive of markets as ‘institutions in which exchanges take place between parties who voluntarily undertake them’ and emissions trading markets as institutions in which the relevant market activity involves the buying, selling, gifting, banking, or borrowing of various types of legal authorization to emit 1 tonne of CO₂^e into the atmosphere.

clarification or categorization. But it can be usefully viewed as the cluster of political theories concerned with ‘the moral relations of members of a universal community in which state boundaries have a merely derivative significance’ (Beitz, 1979: 182) and which hold that ‘all human beings, regardless of their political affiliation, do (or at least can) belong to a single community, and that this community should be cultivated’ (Kleingeld and Brown, 2006: 1). The specific question I address within these parameters is the following: what, if anything, is wrong with emissions trading from the cosmopolitan point of view?

At first glance, cosmopolitanism, as a theory of universal moral community, seems well suited to deal with the climate problem. Climate change will trigger a number of outcomes of global significance due to changes in the physical and biological systems that underpin human and international security. Moreover, the financial and logistical demands of the climate problem mean that atmospheric users must act in cooperation across national and generational borders to prevent climatic changes that are still avoidable (mitigation); to minimize the adverse effects of climatic changes that are no longer avoidable (adaptation); and to reimburse victims of climate change for their experience of undeserved harm (compensation).

Nevertheless, it is necessary to move beyond the general characteristics and strengths of cosmopolitanism as a political tradition to ask what sorts of climate policy responses would be required, permitted or prohibited from the cosmopolitan perspective. In this paper, this objective is pursued by developing only those objections to global emissions trading that are compatible with core commitments of cosmopolitanism and which do not rest on superficial misunderstandings of how emissions markets function. The three objections considered focus on (i) the erosion of environmental morale that might follow large numbers of atmospheric users being subject to financial incentives to reduce their use of the atmosphere and its capacity to store greenhouse gases without triggering climatic change; (ii) the procedural injustice associated with existing trading schemes and the difficulty of avoiding these inequities in the construction of new schemes; and (iii) the commodification of the atmosphere inherent in the trade in emissions allowances.

In the next section, the ground is prepared for a policy-relevant normative examination of emissions trading by offering a brief overview of this approach to climate change mitigation. In the section thereafter, emissions trading is placed in the context of contemporary cosmopolitan thought. Next, in the following three sections, the three normative objections are explored. Finally, a concluding section explores some concrete policy modifications emerging from the analysis.

Emissions trading as a response to global climate change

To analyse any policy instrument from the normative perspective, it is necessary to construct a clear picture of the instrument in question. Emissions trading can be usefully viewed as a member of the family of ‘market-based’ environmental policy instruments. Such instruments are guided by the influential ‘polluter-pays principle’ according to which agents responsible for causing environmental pollution should also bear the primary costs of its adverse effects (De Sadeleer, 2002: 21). Market-based instruments promote environmental quality by requiring agents to bear the full social cost of their environmental behaviour by levying a fixed charge per unit of pollution released (‘price-based mechanisms’) or by introducing markets in allowances corresponding to an authorization to emit a certain amount of pollution whose price is set through supply and demand (‘quantity-based mechanisms’).⁷ The idea is that as the charges increase, or effective demand for emissions allowances increases their price, the emissions of the atmospheric users targeted will decrease.

The dominant form of quantity-based mechanism, *Cap-and Trade*, involves the creation of a market for tradable allowances conferring the right to emit a certain quantity of CO₂^e over a specified period in the context of an absolute ceiling on the aggregated emissions of participating agents and can usefully be distinguished from two other types of emissions allowance market. *Voluntary Emissions Trading* involves atmospheric users securing emissions allowances for the purpose of ‘offsetting’ their CO₂^e emissions in absence of any legal requirement. Such allowances are typically created when investments are made on behalf of purchasers in greenhouse mitigation projects that are located in developed or developing countries. Although the voluntary offset market operates in absence of legally binding caps on emissions, and is essentially unregulated, some trading platforms may impose legally binding emissions reductions as a condition of membership. *Credit-and-baseline* schemes, such as the Kyoto Protocol’s ‘Clean Development Mechanism’ involve the creation of emissions allowances valid for surrender in cap-and-trade schemes through projects (such as those involving investments in wind farms, hydroelectric power stations, or methane capture from landfill sites) that reduce CO₂^e emissions. The quantity of emissions allowances issued reflects an estimation of the amount of additional CO₂^e that would have been emitted had the project not taken place.

⁷ See Helm (2005) and Hepburn (2006) for detailed discussion of this distinction and its application to climate change.

Cap-and-trade schemes, the primary focus of this article, have five key elements.⁸ First, regulators place an overall cap on the CO₂^e emissions of participants over an extended timeframe in accordance with the specific objectives of the scheme, such as the Copenhagen Accord's objective of preventing a greater than 2°C planetary warming. This cap determines the upper limit to the number of 'emissions allowances' available for allocation and subsequent trade within the scheme. A global cap-and-trade scheme could emerge either from a collective, internationally negotiated, cap on the CO₂^e emissions of all states or a network of separately negotiated national caps on emissions that are linked to facilitate inter-scheme allowance trading (Lazarowicz, 2009: 22–33).

Second, participants are required to apply for a permit authorizing their engagement in the types of emissions activities covered by the scheme. Activities not so authorized are either unlawful or covered by other policy instruments such as government regulation, voluntary agreements, or greenhouse taxation. A key issue is where the participants are located in the production and distribution nexus. 'Upstream schemes' isolate a small group of energy suppliers, importers, and refiners as participants, whereas 'downstream schemes' isolate the primary end-users (individual households, firms, and public institutions) of emissions producing activities. A global scheme would involve targeting atmospheric users responsible for most, if not all, of the emissions activities that must be reduced in order to prevent dangerous climate change.

Third, once the scope of the scheme is determined, a fixed and periodically declining quantity of 'emissions allowances' are issued into the market. These allowances are valid for a particular year or commitment period, but the scheme may permit 'allowance banking' (so owners can save allowances for future use) or 'allowance borrowing' (so owners can use at least some future-dated allowances to cover emissions in earlier years). Regulators also have the choice of issuing allowances to participants directly (free-of-charge or at some cost) or indirectly (by releasing allowances into the market through periodic auctions. Distributing allowances through highest bidder auctions provide regulators the opportunity to raise revenue for additional climate mitigation, adaptation initiatives, or other social projects. Issuing allowances free-of-charge, by contrast, may encourage compliance among early generations of scheme

⁸ For an exposition and defence of cap-and-trade as an approach to climate change mitigation, see Rose (2000: 52–68), Tietenberg (2006: 25–47, 192–203), Stavins (2008), Kurtzman (2009) and Lazarowicz (2009). It is worth noting that cap-and-trade has also attracted significant criticism on grounds of both cost-efficiency and environmental effectiveness, particularly among proponents of carbon taxes (see Nordhaus, 2007; Metcalf, 2009).

participants whose emission levels were previously not subject to legal control.⁹

Fourth, once the scheme is in operation, participants are encouraged to trade emissions allowances as they see fit in order to minimize the costs of fulfilling their legal obligations under the scheme. The scope of permissible market activity can be limited to those directly participating in the scheme or extended to other legal persons. It can also be limited to those allowances issued directly by the scheme administrator or extended to allowances issued through other schemes subject to certain transfer limits and appropriate rates of exchange. Although the rules of each scheme will vary, the unifying feature of cap-and-trade schemes is that participants must surrender the quantity of allowances that corresponds to their emissions at the end of each year of the scheme.

Fifth, participants who do not comply are subject to a combination of financial and other legal penalties. The penalties concerned can vary significantly across different schemes. The world's largest existing scheme by volume and value of allowances traded, the European Union Emissions Trading Scheme (EU ETS), for example, adopts fixed penalties for each allowance that a participant fails to surrender during each compliance period, which also adds a requirement to surrender the missing allowance in a future compliance period. Any truly *global* realization of emissions trading would involve a consistent system of oversight and compliance to which no participant could reasonably reject as unfair.

Cosmopolitanism, markets, and climate change

Beyond the characterization of cosmopolitanism as a theory of universal community lies a multiplicity of accounts specifying the community to which all humans belong and the acceptable limits for the cultivation of this community. According to a useful taxonomy, conceptions of cosmopolitanism fall into four main categories (Pogge, 2002: 169ff; Kleingeld and Brown, 2006: 11ff; Held, 2010: 103ff).

'Moral cosmopolitans' hold that national, as well as other types of spatial and temporal border, are irrelevant factors in the determination

⁹ Free-of-charge allowance allocation, especially when the allocation of allowances is proportional to the historical emissions of the recipients, has been criticised on grounds of efficiency (it tends to distort the market and provide economic rents to large emitters such as energy firms) and ethics (it bypasses a principle-based allocation based on equality or need). Cosmopolitans persuaded by either criticism will be suspicious of free-of-charge allocation even where it operates in the context of a trading regime that is *global* in the sense outlined in the text.

of moral status and the just distribution of benefits and burdens. They challenge, that is, the view that the origins of weighty ethical norms (such as the norm not to harm others without justification) flow from commonly recognized ‘local attachments’ limited to contemporaries, compatriots, or family members and go on to argue that the special status of each human being generates moral obligations on the part of all of humanity, both collectively and individually (Linklater, 1998: 84–96; Singer, 2002: 150–195; Brock, 2009: 13–14). Moral cosmopolitans may or may not hold that global political institutions, or more broadly, some form of world government, are required to fulfil the duties we have to others. But all moral cosmopolitans endorse three core propositions: individual human beings are the ultimate source of moral claims; each human being possesses these claims equally; and the special status of each human being generates moral claims on the part of others both collectively and individually (Pogge, 2002: 169–170; Caney, 2005: 3–4).

‘Political cosmopolitans’ (also known, with some minor modifications in meaning, as ‘legal’ or ‘institutional’ cosmopolitans) hold that it is insufficient merely to reject the salience of borders when we define our duties to others. It is also necessary to support a global political project that can reliably fulfil the cosmopolitan duties that are violated so frequently in a world with no central political institutions (Held, 2010: 105–107). The idea is that the single community to which cosmopolitans should work towards is one where each and every person shares the same legal and political status; and this can only be achieved through the creation of a global political order or ‘universal republic’ (Pogge, 2002: 169).

‘Cultural cosmopolitans’ (who endorse moral, though not necessarily political, cosmopolitanism) celebrate cultural diversity and posit a deep, if not necessary or sufficient, connection between the capacity to be open to the wisdom of other cultures and pursuit of a worthwhile life. The central idea here is that cosmopolitan citizens decline to associate their cultural identity with either a ‘secure sense of place’ or a ‘bounded subset of the cultural resources available in the world’ (Waldron, 2000: 228). Cultural cosmopolitans, as a consequence, tend to oppose political theories and public policies that promote unconditional national self-determination, cultural assimilation, or other social policies that can be construed as ‘parochial’ (Caney, 2005: 6–7; Held, 2010: 110–112).

To these three elaborations of the cosmopolitan ethos, it is useful to add a fourth conception: ‘economic cosmopolitanism’. This is the diverse tradition of thought united by the idea that a ‘preferred economic model transcends the boundaries of a nation state’ (Brock, 2009: 11). One, but only one, example of this tradition is to be found in the writing of those

favouring the creation of a global market in existing goods and services; the expansion of the scope of market activity to cover new commodities; and the expansion of market attitudes, norms, technologies, and rules to sectors of life (education, health, family relations, nature) traditionally viewed as inimical to market valuation (Kleingeld and Brown, 2006: 11). In this formulation, economic cosmopolitanism can be linked to economic liberalism and other strands of market thinking that hold that responses to domestic and international policy should be grounded in market mechanisms and minimal state regulation. Economic cosmopolitanism of this form is in tension with other conceptions of the universal community in two senses. First, it is unclear to what extent it is compatible with the basic principles of individualism, equality, and universal moral duty assumed by moral and political cosmopolitanism. Second, the core proposition that markets should be universal is at best indirectly related to the core proposition of cosmopolitanism, that all human beings belong to a single community, since the market itself seems unclassifiable as a community.

Putting aside the crudeness of this taxonomy, it is tempting to view emissions trading, specifically the desire to create a global network of emissions trading schemes, as a promising vehicle for all four conceptions of cosmopolitanism. National borders are at best an irrelevance, and at worst a severe hindrance, to the smooth running of emissions trading markets. The full benefits of trading only emerge where emissions allowances are permitted to flow to those agents that value them highest; and this flow will be interrupted where inter-spatial and inter-temporal trade in emissions allowances is constrained. It could, in fact, be argued that emissions trading is inherently cosmopolitan in envisaging a universal community of emissions allowance sellers and buyers whose autonomous valuations determine how the global emissions cap is to be distributed.

From a different perspective, each strand of cosmopolitanism has independent reason to support a climate response involving emissions markets. *Moral cosmopolitans* will support emissions trading so long as it is environmentally effective and not responsible for obvious violations of human rights. They might also be predisposed to this type of mechanisms for the way it fosters democratic scrutiny of climate mitigation goals and objectives among scheme participants and observers (Ackerman and Stewart, 1988). *Political cosmopolitans* may view the geographical spread of emissions trading as a useful measure to test the emerging network of global policy institutions and international jurisprudence devoted to the protection of trans-boundary environmental quality. They might further suspect that global emissions trading will require a global institution to act as a central administrator or that positive experience of a linked set of national emissions trading schemes will encourage the emergence of a

world government. *Cultural cosmopolitans* may suspect that the global carbon markets (as with the global trade in commodities, tourism, financial products, and consumer goods that preceded them) will act as a useful bulwark against cultural parochialism and national sentiment. Finally, *economic cosmopolitans* may view international emissions trading markets as a challenge to regulatory and protectionist trends in the global economy. The global commodification of the atmosphere might also be welcomed on a more symbolical level as a milestone towards market-based solutions to a wider range of social and environmental problems.

On initial inspection, this optimistic approach to reconciling emissions trading and cosmopolitanism is borne out by the emerging literature on global justice and climate change. Not all of the cosmopolitans mentioned above have expressed a firm view on the matter. But those that have generally view emissions trading, and more generally market-based instruments, as either a positive step towards the realization of a just global distribution of environmental resources or at the very least as compatible with its realization. Peter Singer, for example, has argued that global emissions trading would have beneficial outcomes for the environment relative to rival mechanisms because of the way it forces atmospheric users to internalize the full social costs of their environmental behaviour (Singer, 2002: 46). Given that regulators have the option of issuing emissions allowances into the market through periodic highest bidder auctions, Singer also praises this type of intervention for its capacity to promote global development goals by redistributing the subsequent income stream from high emitters (who generally have financial resources to spare but will require large numbers of allowances to cover their emissions) to low emitters (who generally lack financial resources but would be the main beneficiaries of adaptation and clean development technology transfers associated with a global emissions trading regime). Crucially, for Singer, a global emissions trading scheme could help realize the principle that each person is entitled to an equal per capita share of the atmosphere and its capacity to store greenhouse gases without triggering climate change could be distributed among governments according to the ratio of national emissions to population size (Singer, 2002: 47–48).

Simon Caney, though objecting to the idea that states can pool the emissions entitlements of their citizens in this manner, echoes Singer in claiming that there is no *intrinsic* injustice associated with global emissions trading. Instead, cosmopolitan norms of justice are affirmed, rather than violated, by the introduction of trading schemes so long as they exhibit three features (Caney, 2010: 213–215). First, individual persons, rather than the governments that run emissions trading schemes on their

behalf, remain the ultimate owners of the underlying asset upon which the trading system is based. Second, the allowances must be allocated to participating users through regular auctions and not free-of-charge. This restricts the exploitation of the scheme through profit opportunities unconnected to the behavioural changes required to cut CO₂^e emissions. Third, the proceeds of the auctions must be distributed beyond the jurisdiction where auctions take place, with the preponderance of funds being allocated to the global poor in the form of development aid or climate adaptation assistance.

Despite the fact that cosmopolitan thinkers such as Caney and Singer are positively inclined towards emissions trading, to draw the conclusion that normative critics of emissions trading must be *anti-cosmopolitan* would be premature. Cosmopolitanism, as noted above, is a diverse body of thought as demonstrated by the divergence of moral, political, cultural, and economic cosmopolitan premises. Some environmental theorists, for example, have criticized market-based policies in general terms, and emissions trading specifically, without rejecting the core cosmopolitan commitment that all human beings belong to a single ethical community. The resulting critiques can usefully be classified in terms of two oppositions: (i) whether the asset being traded or the agents doing the trading is the focus of the critique; and (ii) whether the critique is framed in consequentialist or non-consequentialist terms.

A prominent example of a consequentialist, agent-centred, critique can be found in Dobson (2003). Defending what he calls a ‘post-cosmopolitan’ approach, Dobson suggests that all forms of market-based environmental policy are flawed because they ignore, and in many cases undermine, the deeper motivations of environmental concern required for mankind to live within its environmental limits. The problem, for Dobson, is that in encouraging atmospheric users to internalize the costs of their actions only when faced with the relevant financial incentive, carbon tax and emissions trading policies cannot change more than superficially the behaviours and norms that create environmental problems. If such interventions are withdrawn after a trial period, for example, the agents covered will not have undergone any real moral motivation transformation. The result is that the unwanted behaviour will either return to the previous level (the incentive merely produces a temporary effect) or even surpass the original level (Dobson, 2003: 3; see also Spash, 2010: 186–190).

John O’Neill, who outlines an agent-centred critique, developed largely in non-consequential terms, also adopts a cosmopolitanism standpoint that regards market-based environmental policies with suspicion due to the way that they undermine the appropriate valuation of the goods and relationships on which they are premised. The flaw in carbon tax and

emissions trading policies, for O'Neill, is not merely that they will predictably make people *care less* about the environment by corroding their internal motivations to live within their environmental limits, but also that these policies are *incompatible* with their participants maintaining an intrinsic, as opposed an instrumental, orientation to nature and future generations (O'Neill, 2007: 5–7). As a pure form of market-environmentalism that encourages the buying, selling, and gifting of assets derived from discrete exploitations of the natural environment, emissions trading seems peculiarly open to O'Neill's critique. The idea is that placing a monetary value on the absorptive capacity of the atmosphere (the ability of the atmosphere to accommodate accumulations of CO₂^e up to a certain level without triggering a transformation of the climate system) exposes the natural environment to an unwelcome degree of market penetration that modifies relationships among the agents who share the goods that a stable atmosphere provides (O'Neill, 2007: 24–26). In short, commodifying the atmosphere in the manner required for the creation of a global emissions trading scheme involves market participants treating themselves and others without proper respect (O'Neill, 2007: 23). It is, for O'Neill, inadequate to respond to the anti-market critique by claiming that market-based policies only price environmental goods and services in order to reduce their over-exploitation since placing a price on these goods itself undermines many of the relationships and value commitments of which these goods are constitutive.

Although the analyses of O'Neill and Dobson can be applied to all forms of market-based mechanism, Robert Goodin, in one of the first philosophical examinations of emissions trading, also outlines a set of additional objections within a broadly cosmopolitan framework. The primary problems he outlines are non-consequentialist derivations of the agent- and asset-centred critiques. First, he notes that cosmopolitans are simultaneously drawn to the idea that all human beings in some non-trivial sense possess equal claims of ownership and usage over global natural resources and yet regulators appear to violate this norm when they issue rights to emit CO₂^e to a subset of the owning group without clear acknowledgement of, or compensation reflecting, the underlying ownership relation. Emissions trading, on this view, appears to be a simple case of uncompensated theft (Goodin, 1994: 578–579). Second, Goodin speculates that, quite apart from being a form of theft, emissions trading invites wealthy emitters to finesse their ethical duties to reduce emissions though their own daily activities by inviting them to pay surrogates to undertake mitigation on their behalf (Goodin, 1994: 575). Since norms of ownership and responsibility are key features of cosmopolitan accounts that do not adopt a purely outcome-based approach to

environmental and social justice, these are strong objections to emissions trading if they are sound.

What the above applications of cosmopolitan theory to emission trading have in common is the construction of a sweeping objection to emissions trading in absence of a sustained analysis of what form of commodification is involved in emissions trading markets or strong empirical evidence to support the claim that emissions trading will ultimately corrode the intrinsic motivations of atmospheric users to protect the atmosphere. To address these gaps in the cosmopolitan case against emission trading it is necessary to look closer not merely at the internal dynamics of emissions trading but also to ask whether the key normative objections to emissions trading, including those raised above apply, apply only to this type of policy response.

The environmental crowding-out effect

According to Dobson and others, market-based policies such as emissions trading have the predicted, though unintended, consequence of corroding the intrinsic motivations¹⁰ of agents to perform acts, or support socially desirable policies, that protect the environment because they are rewarding in themselves rather than because they generate financial rewards (Frey, 2000: 55–70; Dobson, 2003: 2–3; Bazin *et al.*, 2004; Spash, 2010). The idea is that, contrary to traditional economic theory, the relationship between intrinsic motivations (such as those that drive many voluntary actions safeguarding the environment) and extrinsic motivations (such as the financial rewards that regulate emissions allowance markets) are not necessarily ‘additive’ (Frey, 2000: 55–70). The latter, that is, will often supplant the former and, over time, will bring about a lower overall level of environmental protection. This ‘hidden cost’ of emissions trading is referred to in the literature as the ‘crowding-out effect’ (Kelman, 1981: 56–69).

The social-psychological mechanism driving the crowding-out effect in the climate context has three stages. First, in the pre-emissions trading context, emissions sources are constrained by a combination of regulatory measures, subsidies, taxes, and voluntary measures. While agents are subject to a broad range of intrinsic motivations and legal rules, there is no overarching system of financial compensation in place for those who reduce emissions.

¹⁰ The relation between instrumental and intrinsic motivation is usefully explored by Mack (1989: 212–213) and Lane (1991: 364–369).

Second, emissions trading schemes systematize environmental preservation on the basis of instrumental, rather than intrinsic, motivations. The opportunity to gain financial compensation creates an additional reason to protect the atmosphere that operates parallel to any moral motivations participants previously entertained, such as public spiritedness, reverence for nature, or intergenerational concern. This extra reason – the powerful financial motive that the less pollution they emit, the fewer emissions allowances they will have to surrender – means that emissions reductions now command a higher value for users than previously as a result of their receiving *two* sets of rewards for the same behaviour.

Third, the nature of the good in question is such that intrinsic and instrumental reasons driving its protection are ‘non-additive’ in the sense that harnessing financial motivations to protect the atmosphere will predictably weaken the moral stigma associated with greenhouse gas emissions of any magnitude. This is because what was once a matter of intrinsic wrongdoing is now transformed into an activity whose wrongness can now be offset (or ‘forgiven’) by paying the relevant market price. Since agents now have psychological reasons to reduce pollution other than individual conscience or social responsibility, it is rational for them to adjust, and reduce, the motivational role of intrinsic enjoyment or moral duty in their treatment of the environment and other agents. The social norm that protecting the atmosphere should be rewarded financially will consequently spread throughout the population (Spash, 2010: 188–190).¹¹

If proven, the crowding-out effect would indeed provide the basis of a powerful normative objection to emissions trading. The environmental application of the effect has attracted fairly limited scrutiny, however, despite the large literature in social psychology and behavioural economics devoted to the interplay of financial incentives and intrinsic motivation. Where they have addressed the incentives/motivation controversy in the context of environmental goods, many theorists have simply asserted that financial incentives undermine intrinsic valuation without offering any compelling empirical evidence or a detailed elaboration and defence of the psychological mechanisms at work. Instead, the claim seems to be that the environmental crowding-out effect is an uncomplicated extension existing research on the ‘hidden costs of reward’ (see Dobson, 2003: 3; O’Neill, 2007: 21–22; Spash, 2010: 188–190).

¹¹ Frey (2000: 76) remarks that ‘monetary rewards deprive individuals of the possibility of indulging in altruistic feelings. After all, no one can pretend to act out of civic duty, if the compensation package in itself offsets the disutility generated by the facility’.

Two examples of the underlying research into such hidden costs are illustrative in this regard. In the first, researchers offered financial rewards to voluntary workers whose tasks were undertaken previously without payment. It was found that such interventions reduced the amount of work that volunteers undertook, with comparatively small rewards having a significant demotivational effect (Gneezy and Rustichini, 2000b). In the second, it was found that introducing a scheme to fine parents arriving late to collect their children from day care centres in Israel led to an increase in late arrival both during the course of the scheme and after the scheme had terminated. The explanation offered was that the parents' perception of the problem of lateness had been transformed from one of ethics into one of market provision. By commodifying the relationship between parents and day care staff, that is, market-based incentives had corroded the intrinsic reluctance of the former to impose costs on the latter (Gneezy and Rustichini, 2000a: 13–16).

The problem with the picture of the incompatibility of incentives and intrinsic valuation that emerges from these experiments is that they do not generate a clear objection to emissions trading that cosmopolitans must accept. First, regarding the social psychological strand of the debate, there are significant problems in drawing specific normative or policy conclusions as regards the use of emissions markets. Defenders of the environmental crowding-out effect have drawn conclusions about the power of incentives to demotivate subjects without discussing the results of other experiments that led to no changes in levels of demotivation or increased performance among reward recipients. In addition, of note is that the crowding-out effect observed among individual subjects in experimental conditions cannot be easily applied to emissions trading given the system of incentives and motivations is far more complex.¹²

Second, it is questionable whether the crowding-out effect can be used as a distinctive, and therefore decisive, objection to emissions trading since rival approaches to environmental policy also harness mitigation incentives analogous to price effects. Carbon tax schemes, for example, offer users the incentive to pay a set fee for each tonne of CO₂^e emitted rather than face strict emissions standards or the price uncertainty characteristic of a free market in emissions allowances. Legal regulation of individual user emissions also confront users with extrinsic rewards for compliance in the form of the financial incentive to avoid fines or lost income arising from legal prosecutions. Once we realize that any intervention giving agents reasons to protect the environment beyond

¹² See Cameron and Pierce (2002: 89–99) for a discussion of these contrary findings.

immediate enjoyment or self-esteem will result in some level of crowding-out, it becomes clear that the real question is *how much*, not *if*, a particular policy is vulnerable to the crowding-out effect. Emissions trading may turn out to be more vulnerable to the psychological processes underlying the effect by virtue of being a purer form of market environmentalism than carbon taxation due to the way in which it layers additional opportunities for accumulation via market speculation on top of the financial incentive to limit tax exposure. But until more is known about the propensity of each policy mechanism to generate hidden costs of this nature, it is not reasonable to conclude that crowding-out is the fatal flaw of emissions trading.

Third, there are some necessary conditions, as well as intensifying factors, associated with crowding-out; whereas some of these conditions do not apply to emissions trading, others, where potentially a problem, can be removed through careful policy construction. I focus here on just one of these conditions: the presence of an agent whose intrinsic motivations are vulnerable to corrosion by the scheme.¹³ The crowding-out objection presupposes the existence of a large number of agents whose motivation to protect the environment out of enjoyment alone is at risk through participation in, or observation of, emissions trading. The more intensely these agents care about the environment for its own sake, the greater their vulnerability to crowding-out. The problem here is quite simply that many governments, millions of firms, and billions of individuals seem to possess little or no ecological concern to be crowded-out in the first place; and it would odd to skew climate policy towards those who do have these concerns if emissions trading, all things considered, could be shown to be material step towards fulfilling the objective of avoiding dangerous climate change in the way it modifies the behaviour of these agents.

To sum up, the size of the crowding-out effect is uncertain as are the nature of its interactions with other aspects of atmospheric commodification. The net effect of the spread of emissions markets may be an increase in the supply of the desired behaviour despite the presence of some crowding-out of intrinsic environmental motivations. Policymakers have a number of options in terms of minimizing crowding-out effects, where prevalent, without abandoning emissions trading altogether. One example would be to sponsor schemes involving the public acknowledgement of the intrinsic values of those with strong commitments of environmental preservation in order to promote 'value addition' over

¹³ For more detailed coverage of this issue, see Frey (1997: 25–34; 2000: 55–57), Cameron and Pierce (2002: 32–33) and Page (2011).

‘value substitution’. The untapped potential of such measures, as well as the weaknesses in the argument more generally, indicates that the environmental crowding-out does not generate a decisive objection to emissions trading.

Emissions trading and environmental procedural justice

Citizens demand not only favourable outcomes, efficiently reached, from their policymakers and social institutions but also that the policies bringing about these outcomes are consistent with established norms of procedural justice and political legitimacy.¹⁴ To be justified to the agents to whom they apply, that is, environmental policies must be accountable to, and involve the equal treatment of, those whose conduct they regulate. Since procedural justice and political legitimacy are key components of the vast majority of cosmopolitan accounts of justice¹⁵ – as well as treatments of climate justice proceeding from cosmopolitan premises (Banuri *et al.*, 1996; Grasso, 2010: 53–62) – it is useful to ask whether there are procedural or legitimacy objections to emissions trading that do not apply, or apply less vigorously, to rival policies. For simplicity, I focus here largely on procedural justice.

There are three key ideas present in cosmopolitan procedural justice relevant to the evaluation of global emissions trading: *inclusion*, *impartiality*, and *equality of opportunity*. According to the ‘inclusion principle’, the interests of all relevantly affected parties should be considered when selecting environmental objectives and the means to achieve them (Paavola and Adger, 2006: 605–606). There are both instrumental and intrinsic reasons for taking this principle seriously. First, widespread participation and compliance is essential for the success of national or

¹⁴ Here I follow the standard, if not uncontested, interpretation of procedural justice as being concerned with fairness in the way decisions are made that affect the well-being of members of some population and political legitimacy as being concerned with the rightful exercise of constitutional authority (Buchanan, 2010: 79). Although the two are non-trivially connected at the conceptual level, and both are important normative constraints on environmental policy, procedural justice may obtain in the absence of political legitimacy (e.g. where a fair process involves the distribution of benefits among friends) and a political order may be legitimate in the way that political power is wielded but not fully just (the parties may not agree on the meaning of procedural justice, but may agree that political power is wielded rightfully in their community).

¹⁵ See Linklater (1998: 96) and Brock (2009: 155–171). Held (2010: 69–75) derives several of his key principles of a cosmopolitan ethic (principles that can be ‘universally shared...and form the basis for the protection and nurturing of each person’s equal significance in the “moral realm” of humanity’) from a concern for procedural justice and political legitimacy, notably principles of self-determination, accountability, consent, inclusiveness, and participation.

international responses to climate change and this is unlikely if large numbers of atmospheric users feel excluded from the policymaking process. Second, many of the controversies central to climate policymaking have normative dimensions that are closed to any obvious technical solution. Each policy choice, for example, will result in a unique set of distributional effects; and weighing the interests of the affected populations is as much a problem of democratic deliberation as it is political economy or moral philosophy. Third, and perhaps most importantly, political representation is non-derivatively valuable: it should not be withheld from morally relevant agents even if there are doubts as to whether it is always conducive to the selection of the most cost-efficient and environmentally protective policies.

According to the ‘impartiality principle’, policies should be implemented according to pre-established formalities, rules, and procedures.¹⁶ Impartiality requires that public officials treat like cases alike in order that no agent is favoured arbitrarily in the way the rules are interpreted; it also requires that the rules enforced by regulators, and followed by those bound, are sufficiently consistent and transparent that agents understand what is required both of themselves and others. Finally, public officials must not exploit their position as trustees of public assets for personal gain and should take reasonable steps to prevent intentional non-compliance with the rules, such as fraud and theft. In the context of emissions trading, the impartiality principle requires that the same rules (such as those overseeing the surrender, exchange, banking, and borrowing of allowances) are adopted for all market participants.

According to the ‘equality of opportunity principle’, environmental policies should not only reflect norms of impartiality but also norms of ‘background fairness’ (Barry, 2002: 98–99). Background fairness requires that the initial condition of those bound by social policies should be roughly equal in terms of their ability to understand the procedures involved; their experience of the costs of compliance; and their ability to express dissatisfaction with the rules or suggest policy changes. In this way, background fairness places ethical limits on the exploitation of lobbying, coalition building, or the exercise of financial power to gain improved terms over those agents lacking in these resources. Equality of opportunity is realized in emissions trading when the atmospheric users targeted do not experience inequality producing variations in their ability to take part in the emissions markets as a result of arbitrary features of their situation such as spatial location, scientific expertise, or weak agency.

¹⁶ Barry (2002: 97) refers to this minimum condition of justice as ‘procedural fairness’.

The idea is that such inequalities, if gross and persistent, undermine the logic of a market as a set of consensual agreements among equal participants.¹⁷

How do these three principles apply to the theory and practice of emissions trading? On the face of it, there seem to be several ideal-theoretic procedural advantages of emissions trading relative to other types of climate policy response. First, if it was fully global, as most proposals suggest, the emissions allowance market could encompass *all* legal persons as potential sellers or buyers of allowances, thereby guaranteeing a basic level of inclusivity and impartiality. Second, the interests of future generations and developing countries, who may otherwise lack present bargaining power, seem well represented by the ‘cap’ component of emissions trading even if the ‘trade’ component is an imperfect realization of procedural justice. If emissions trading is an effective method of avoiding dangerous climate change, that is, it will prevent existing inequalities of well-being and status being exacerbated further by the pernicious impacts with which climate change has been connected. Third, emissions trading schemes seem to have some procedural advantages over rival schemes, in particular those involving direct regulation of emissions such as rationing, in the way they respect the autonomy of atmospheric users to distribute emissions burdens among themselves rather than in response to rationing or fixed price pollution charges.

On closer inspection, however, a number of potential sources of procedural injustice arise from emissions trading, of which the most important involve complexity, inequality, and accountability. There is now an extensive literature on these problems as they apply to emissions trading schemes as they have been negotiated and implemented in the real world (see Hepburn, 2007; Spash, 2010; Lohmann, 2010; Paterson, 2010; Page, 2011). I focus, here, however on the *ideal-theoretic* question of whether a global emissions trading scheme devoid of obvious bias and regulatory incompetence could be reconciled with norms of procedural justice and political legitimacy.

Complexity

There are a number of reasons why emissions trading schemes tend to be more complex than other policy instruments. They involve intricate systems of rules such as banking, borrowing, and financial accounting. They also rely on rules whereby different types of emissions allowance are rendered

¹⁷ Satz (2010: 93) captures this thought when she writes that ‘market exchange based in desperation, humiliation, or begging or whose terms of remediation involve bondage or servitude is not an exchange between equals’.

commensurable in order to exploit the mitigation benefits of inter-scheme trading. This complexity and diversity leads Stripple and Lövbrand to characterize emissions trading markets as a ‘messy set of rules, practices, norms, and authority relations, lacking a single origin, driving force, or systemic coherence’ (Stripple and Lövbrand, 2010: 165). The upshot of all this complexity is that, although they are designed to be procedurally fair in the sense that *all* participating users must cover their emissions by purchasing allowances according to pre-specified rules, cognitive hurdles are introduced to the realization of equality of opportunity among participants since participants will enjoy differential ability to cope with the complexities and uncertainties involved (Spash, 2010: 171). In fact, the complexities involved in emissions trading can quite easily reach the stage where only those agents with access to expensive diagnostic tools and research facilities can make sound strategic mitigation decisions.

Inequality

Emissions trading introduces some subtle changes in the relationships among atmospheric users as a result of unequal initial endowments. Suppose, for example, that emissions allowances were allocated globally reflecting disparities in current per capita emissions levels. Individuals, firms or states would initially receive more allowances if they are low emitters and fewer, if any, allowances if they are high emitters. In the early stages of any conceivable scheme, those with more resources at their disposal will be able to purchase their way out of direct mitigative action by purchasing allowances from poorer agents, many of whom may have no realistic option to refuse to participate in this market. In such circumstances, the spectre of ‘carbon colonialization’ emerges even in a scheme devoid of any obvious procedural bias towards the wealthy since emissions trading may be expected to entrench existing global inequalities in placing the physical burden of cutting emissions on agents located disproportionately in countries that rely on CO₂^e emitting activities to escape under-development (Sagoff, 2002: 316–317; Clifton, 2009: 26). The procedural problem this process raises is not so much that emissions trading involves a violation of a norm of environmental responsibility requiring polluters to reduce pollution through their own daily activities, but that the emissions markets reinforce existing inequalities of bargaining power thereby undermining equality of status and dignity among the participants. This lack of equality of status may be expected to persist even if the emissions markets are pareto optimal in the technical sense (all parties gain either because they derive benefits from delayed mitigative action or receive financial reward for selling surplus allowances).

Accountability

Emissions trading also introduces some subtle changes in the legitimacy relationships among regulators and atmospheric users. The responsibilities of users are determined on a day-to-day basis by global markets (which sets the price of emissions allowances) rather than by the decisions of the relevant governmental agencies (which set the periodic emissions caps). This complicates the responsibilities of agents and regulators in terms of both impartiality and equality of opportunity since regulators can be subjected, at least in principle, to continuous accountability whereas markets tend to resist such accountability. There is, here, a clear link to the literature on international governance and accountability. To be accountable, Keohane writes, 'is to have one's autonomy and one's power over others, constrained' (Keohane, 2009: 14). The problem is that, while emissions markets might be superior to regulatory policies in holding firms accountable for their environmental footprints, the global emissions market appears too diffuse to be accountable to the agents whose interest it is designed to protect.

The procedural issues raised above can be assessed in two ways, first, by considering emissions trading schemes in isolation and, second, by comparing them with rival policies. Considered in isolation, procedural problems such as those discussed above may be difficult to avoid if the goal is a scheme of global scope. But there is no decisive reason for thinking that a global scheme could not be constructed to dampen considerably problems of complexity and uncertainty; and rival policies also suffer from these problems to some degree. The regulating bodies overseeing existing emissions schemes (such as the EU ETS) already collect basic data on user performance and have also developed procedures to track and rectify trading irregularities, fraud, and accounting errors within the scheme (European Commission, 2003: Article 20). It would be relatively straightforward to strengthen the powers of regulators so that they have the power to block trades that would have a distorting impact on the market by mirroring the procedures and powers of competition regulators in the EU and United States. Regulators might also sponsor open-access information portals providing information now available only by paid subscription thereby promoting public awareness and transparency; and rules preventing the hoarding of emissions allowances might also be introduced. As regards the legitimacy and inequality problems, the use of markets, rather than legal commands or other mechanisms, would not seem to cast a blow against legitimacy so long as (i) the process by which global emissions trading is identified as the most effective method of protecting the climate system from dangerous anthropocentric interference is not subject to significant expert or policymaker bias; (ii) environmental policy objectives

dictate the structure of the emission markets and not the reverse; (iii) all relevant agents were involved in the construction of the rules of emissions markets either directly and indirectly through their political representatives; and (iv) members of poorer countries are the main beneficiaries of the allowance allocation process, for example, by receiving a disproportionate share of free-of-charge allowances or a disproportionate share of the revenue generated in highest bidder auctions.

Turning to policy comparison, it is clear that other instruments are also susceptible to problems of complexity, inequality and legitimacy, even if they do not add the market exchange problems associated with emissions trading. As a result, the risks of enacting a dysfunctional policy do not vary significantly between emissions trading and its rivals. To give just one example, the existing mesh of international and domestic carbon tax codes and legal emissions standards, enforced by a multiplicity of regulatory agencies, could just as easily be described as a ‘messy set of rules, practices, norms, and authority relations’. The International Energy Agency lists over 150 separate tax, and over 350 regulatory measures, on its database of member state climate policies; and each of these measures is associated with complex rules defining the emissions sources, compliance measures and rates of tax that apply (IEA, 2010). Public awareness, transparency, and accountability are as fragile in this context as it would be if a global emissions scheme replaced much of this elaborate mesh of measures.

I conclude that, while procedural arguments offer sound reasons for careful policy construction, they do not provide a compelling normative case against the introduction of such a scheme.

Environmental commodification

For some, emissions trading is unethical not because it is procedurally flawed or predictably leads to inferior outcomes but because it necessarily involves agents putting a monetary price on a good the value of which cannot adequately be captured in monetary terms. In this way, it is argued, emissions trading involves the inappropriate commodification of the atmosphere (Goodin, 1994: 578–581; Sandel, 2005: 93–96). Whereas the crowding-out objection holds that emissions allowances are *dangerous commodities* in triggering a gradual degradation in mental health or environmental concern, the commodification objection holds that emissions allowances create *false commodities* in the sense that they do not possess all of the properties of a legitimate commodity.

There are three ways in which commodification of the atmosphere might be said to create false commodities. Each possibility flows from an

alternative account of the thing being commodified, the agents perpetrating the commodification, and the agents suffering from the commodification. According to the first version of the commodification objection, emissions trading is unjust because it commodifies a good (the atmosphere) that is *not any user's or regulator's to sell*. This is because the atmosphere is ultimately owned by all users of the atmosphere equally or by no one (Goodin, 1994: 578–581). Even if we grant, as a linguistic convenience, that users ‘own’ their fair share of the atmosphere *per se*, or more specifically its capacity to store greenhouse gases without triggering climatic change, this does not mean that they should be permitted to transfer parts of their share, expressed in the currency of emissions allowances, to other agents. Since the idea is that the atmosphere is not transformable into parcels of privately owned property in the manner presupposed by emissions trading, we might call this the ‘non-ownership’ objection.

According to the second version, emissions trading precludes agents from appreciating the value of the atmosphere not merely as a mechanism for the storage of gaseous by-products of anthropogenic activities (such as CO₂^e) but also as an intrinsically valuable component of the natural environment. Emissions trading, in this respect, is no more justifiable than markets in goods, such as friendship, parental concern, or civic duties. This idea of ‘market inalienability’ is a direct application of Kant’s influential claim that ‘what has price is such that something else can also be put in its place as its equivalent; by contrast, that which is elevated above all price, and admits of no equivalent, has a dignity (Kant, 2002[1785]: 52). In the present context, the objection is that the buying and selling of emissions allowances attaches a price to something that is not fully equivalent (i.e. fungible) with other goods that share a similar market value. To treat these goods as if they were equivalent to other goods is would be to disrespect their intrinsic value (Goodin, 1994: 579–580). We might call this the ‘price/dignity’ objection.

The third version claims that, when issued and subsequently traded, emissions allowances amount to ‘environmental indulgences’ allowing those with the wherewithal to finesse their obligation to cut emissions in their daily activities by paying third parties to do this on their behalf. Environmental indulgences are created in two phases. First, when the regulator issues emissions allowances to polluters (whether firms, persons, or governments) free-or-charge or through periodic auctions; second, when holders of allowances subsequently trade allowances. In the first phase, the objection is that regulators corrupt the moral relations among themselves, participants and future generations by creating a currency through which environmental responsibilities can be transferred from

agent to agent.¹⁸ In this way, it is suggested that regulators behave like the Catholic Church which, in the medieval period, ‘forgave’ the sins of wealthy citizens in return for monetary payment (Goodin, 1994: 579–581; Paterson, 2010: 351–352; Spash, 2010: 188). In the second phase, the transfer of responsibility becomes fully realized in a global market where participants are encouraged to purchase emissions allowances in order to ‘right the wrongdoing’ arising from their emissions activities (Goodin, 1994: 581). The objection of the market sceptics is that a just approach to climate change would not permit either form of exchange since both allow agents to finesse their duty to make emissions cuts *in their own daily activities* by hiring others to discharge the duty on their behalf.¹⁹ That is, access to emissions markets confers on rich, high polluting, agents the opportunity to postpone the implementation of low-emission development strategies or significant lifestyle changes. This may also endanger the objectives of climate policy by threatening a slower transition to lower global emissions than could be achieved by other mechanisms (see Clifton, 2009: 17–24; Spash, 2010: 173–178); but even if it did not the policy is inherently unjust in encouraging a displacement in responsibility among targeted agents. We might call this the ‘environmental responsibility’ objection.

Before we assess these intrinsic objections to emissions trading, it is necessary to explore what sort of commodity is created when an allowance enters the cap-and-trade and credit-and-baseline emissions markets. Are they commodities that confer on their owners an environmentally damaging ‘right to pollute’ as critics of emissions trading object; or ‘financial asset instruments’ whose value is realized through trade or in the settling of obligations generated by the terms of the relevant scheme; or ‘intangible assets’, that is, legal claims to future benefits that themselves have no physical properties; or temporary ‘use’ (or ‘permit’) rights to exploit the atmosphere or its storage capacity?

There is no uncontroversial answer to the above questions. The answers themselves turn on a series of ontological assumptions as well as the

¹⁸ The intergenerational injustice associated with market-based environmental policies is captured by John O’Neill (2007: 26) thus: ‘the environment matters because it expresses a particular set of relations to one’s children that would be betrayed if a price were accepted upon it. The treatment of the natural world is expressive of one’s attitudes to those who will follow you’.

¹⁹ As noted above, an additional charge is that emissions trading will entrench existing global inequalities by placing the physical responsibility for cutting emissions disproportionately on agents in developing countries. I concentrate in the text, however, on the prior objection that emissions trading would constitute a corruption of moral relationships within and between generations even if a just pre-existing global pattern of resources obtained.

disciplinary perspective adopted, whether financial accountancy, jurisprudence, economics, or normative political theory.²⁰ The most promising response, however, seems to be that emissions trading schemes confer on the holders of allowances an unrestricted claim (*the usufruct*) to exploit the allowances under one's possession either through legal surrender or profit taking under the understanding that the ownership of the underlying asset lies elsewhere.²¹ The ownership conditions of the underlying resource, the atmosphere itself, remains untouched by the scheme in the same way that ownership of an apartment is untouched by a contract between landlord and tenant. The notion of a usufructuary right allows us to understand the various relationships and norms associated with a host of schemes (such as acid rain pollution trading schemes, fishing and game licensing, and public amenity use) which distribute enjoyment of a resource that is renewable up to a given level of exploitation (Rose, 2000: 51–52; Caney, 2010: 214).

Since emissions allowances are pieces of property over which one has rights rather than property rights in themselves, it is fairly obvious that the idea of a 'right to pollute' is at best a useful slogan and at worst an absurd simplification of the emissions trading process. As Caney (2010: 205) puts it, 'the salient point is that the rights holders in a emissions trading scheme do not have the right to destroy the atmosphere – quite the opposite – and therefore cannot be said to have a property right in it'. What Caney is hinting at here is that, in the event that the participants did decide to destroy their property (the emissions allowance), this would result in a decrease in supply of allowances and accelerated *protection* of the underlying asset. Therefore, the most radical act of a right holder (the destruction of the property owned) paradoxically fulfils, rather than corrupts, the ethos of the policy.

Despite its initial seductiveness, at least for cosmopolitans in the Kantian tradition, all three variants of the commodification objection can be challenged. First, it remains unclear which of the underlying ownership accounts should be applied: is the atmosphere best viewed as an unowned, commonly owned, or individually but inalienably owned resource? I cannot resolve the issue here. But until critics of emissions trading provide a persuasive argument to the effect that (i) the usufructuary right interpretation is unsound or (ii) that usufructuary right regimes violate ownership conditions under any of these ownership scenarios, the claim that emissions trading involves theft or fraud is weak since it is wholly unclear who are the victims of the theft or what exactly they have lost.

²⁰ See MacKenzie (2009: 447–448) for a fascinating discussion of alternative characterizations.

²¹ See Lohmann (2010: 86ff) and Spash (2010: 180) for a contrary view.

Put differently, the non-ownership objection only arises if and when human efforts to avoid dangerous climate change fail, since it is only at this point that any property might be said to have been seized or degraded. The trading regime, however, is precisely designed to avoid this eventuality. If successful, no wrongdoing to anyone (or theft of anything) would arise from this mechanism. If unsuccessful, it is the failure to prevent the onset of dangerous climate change, and not non-consensual appropriation, that would be the basis of a complaint of injustice.

Second, even if the atmosphere is subject to the joint and equal ownership of all persons regardless of generational or international location, emissions trading could be structured to reflect this. Common ownership implies that the benefits derived from emissions trading should flow to those who own the underlying asset. Although existing and future atmospheric users benefit from emissions trading so long as it is a cost-effective method to avoid dangerous climate change; and further benefits created by periodic allowance auctions, or a levy on all trades, could be spent on climate adaptation or measures to reduce global poverty (Barnes, 2001: 33ff; Torres, 2002: 569–571; Caney, 2010: 204–205). Moreover, since the climate system does not itself discriminate between spatial sources of CO₂^e, it would seem parochial, rather than cosmopolitan, to resist the advantages of reducing emissions in countries whose level of technology is lower, and therefore can deliver cuts more effectively so long as appropriate compensation is offered.

Third, O'Neill and other proponents of the price/dignity objection do not provide a convincing argument as to why agents cannot act on a financial incentive to preserve the atmosphere while also embracing a reverence for the natural environment in broader terms. The absence of such an argument would be less disturbing if the focus of the emissions-market critique shared with Kant a common focus of the wrongness of commodifying individual human beings or their bodily parts. But the environmental price/dignity argument extends Kantian reasoning to a diverse range of goods including environmental objects, natural processes, and relations between generations. Even putting aside this set of conceptual leaps, two further problems arise. One is that the philosophical case for the incompatibility of intrinsic and instrumental valuation flies in the face of commonsense experience, which indicates that agents customarily place a monetary value on goods (homes, vacations, and family pets) to which non-monetary, intrinsic, value is also assigned (Mack, 1989: 209). A second is that plural motivations often signify a conscious desire on the part of the relevant agent to protect the good in question, as when a high price is placed on a work of art or a family pet in the hope that it will be cared for more meticulously by a subsequent owner than if the monetary value was lower. The price mechanism here becomes a

vehicle of an agent's expression of their intrinsic regard for a good and not its denunciation (Walsh, 2001: 532). It does not seem then that establishing a market price for a good necessarily commits the buyer or seller to the belief that it could be substituted for another good sharing the same market price without remainder for it may not be viewed *merely* as a commodity.

By the same token, emissions trading schemes do not obviously involve the reduction of the value of the atmosphere to its market exchange value so long as the participants are motivated by the belief that the scheme is fairly organized and is the most effective method of protecting the atmosphere from dangerous anthropogenic interference. Emissions market participants simultaneously apprehend the market price and dignity of the atmosphere in the hope and expectation that those they trade with do the same. In fact, the acknowledgement of plural motivational factors also challenges the 'environmental responsibility' objection since the latter holds that agents *cannot* take turns as sellers and buyers of emissions allowances while at the same time also applauding the forbearance of low emitters and regretting the excess of high emitters. But as we saw above, there is nothing mysterious in an agent participating in such transactions as a *conscious expression* of their concern for the preservation of the atmosphere and its capacity to store greenhouse gases without triggering climatic change (Barnes, 2001: 49–59; Tickell, 2008: 68; Caney, 2010: 204–206). Emissions trading, then, can operate as both a non-consequentialist and consequentialist expression of the cosmopolitan duty to treat moral agents, regardless of generational or national affiliation; with respect in the way it imposes proper regard for a resource on which all depend.

Taken together, these three counter-responses suggest that the market exchange of emissions allowances is at best only partially analogous to more commonly invoked examples of market inalienability such as parental concern, child labour, or the trafficking of human organs, where plural motivations and the expressive dimension of market valuation are less applicable. Vigilance among policymakers is called for to nurture these two forms of resistance to price/dignity conflicts; and to counter the widespread unease among atmospheric users as to the theory of value underpinning emissions trading markets.

Conclusion

As we have seen, a number of scholars working within the cosmopolitan tradition have mounted a critique of emissions trading. While none of the objections considered above dealt a decisive blow to emissions trading, taken together they do suggest that significant procedural and legitimacy

benefits would follow from a remodelling of existing trading schemes such as the EU ETS. Such a conclusion may seem weak or equivocal or both. Many of the modifications that arise from the analysis are already in the public domain, promoted by policymakers, academics, and environmental organizations. But there is more value than generally acknowledged in providing a principled basis for policies that already command widespread endorsement for intuitive reasons. Normative arguments, for example, can strengthen public support for (and compliance among agents bound by) environmental policies.

The policy implications suggested by the previous discussion fall into three basic categories. The first concerns the capacity of emissions trading to deliver on the promise of protecting the atmosphere for the sake of persons living in all generations and nations. To be consistent with cosmopolitan norms, the workings of the scheme must be consistent with goals of global poverty reduction and the equitable distribution of the benefits the scheme creates above and beyond climate mitigation. In this vein, a high proportion, if not all, of emissions allowances should be auctioned and the revenues channelled into a combination of low carbon infrastructure and adaptation measures in developing countries. A minimum price²² for allowances should also be considered in order to guarantee mitigation in the early stages of the scheme so that the interests of future generations are protected from environmental contingencies (such as that greater emissions cuts become necessary than were initially envisaged) and the risks of policy failure.

The second category, procedural protections, involves efforts to strengthen the voice of developing countries in the global climate negotiation process; regulate market distorting, or inequality producing behaviour, such as allowance hoarding; and monitor complex financial products tied to the price of emissions allowances. Linked to improved monitoring is the need for high levels of transparency in, and public awareness of, emissions trading markets to remove formal and background inequalities between participating agents and to improve public accountability. No agent should have to subscribe to an expensive private news gathering

²² Although the price of allowances under the initial commitment periods of the EU ETS, as well as the three emissions markets created by the Kyoto Protocol, have been left entirely to market determination, more recent legislative packages (such as the US Waxman–Markey bill and the EU Climate and Energy Package) have outlined measures to avoid risks of price spikes and crashes. The EU ETS now permits national regulators to intervene to reduce price fluctuations by suspending or bringing forward allowance auctions to increase allowance liquidity; and the, no discarded, Waxman–Markey bill proposed a \$10 minimum price on auctioned allowances from 2012 (European Commission, 2009; Directive 2009/29/EC; US Congress, 2009: §791).

service, such as *Point Carbon*, to follow a market mechanism designed to protect a global commons. Procedural justice also requires vigilance on the part of regulators regarding the complexities and uncertainties of a global market in emissions allowances. One problem that has yet to be tackled is the uncertainty that could be expected to arise as complex financial transactions penetrate emissions markets. Such transactions can have highly uncertain impacts on the asset markets on which they are based, as has been witnessed in the recent financial securitization crisis (Chan, 2009: 3–6; Lohmann, 2010: 235–246) and these impacts are not obviously replicated under rival climate policy instruments.

The third category of measure involves efforts to ensure the continued flourishing of intrinsic environmental values among atmospheric users in order to deal with residual concerns relating to the crowding-out and commodification objections. Regulators might consider encouraging emissions allowance retirement, for example, by granting charitable status to organizations that purchase emissions allowances so they cannot be used in the compliance market. Organizations rather than individuals should be the continuing focus of emissions trading, not merely to diminish the risk of environmental crowding-out but also due to the significant efficiency benefits conferred by an upstream approach focusing on large firms, energy utilities, and importers. Finally, social responsibility could be emphasized through public information campaigns that emphasize the compatibility of market-based mechanisms and environmental values; and training of public officials and teachers in aspects of sustainable development. The objective of these informational measures, which are already widespread in the Nordic countries, is to reconcile a smoothly functioning, and therefore environmentally effective, market environmental policy response with the public acknowledgement of the wrong associated with emitting a level of greenhouse emissions that would guarantee dangerous climate change if extended to all countries and future generations.

Undoubtedly, significant problems remain in determining the acceptable limits of such policy modifications. The danger is that some interventions may be counter-productive in the sense of making emissions trading more procedurally or distributively palatable at the cost of undermining environmental protection. Other interventions may raise the spectre of paternalism by seeking to modify the way citizens (or organizations) choose to value the atmosphere or exercise their usufructuary emissions rights. The objective of these interventions, however, will be to make emissions trading more legitimate to atmospheric users without introducing major inefficiencies and not to reproduce a pure form of market environmentalism or liberal neutrality.

Acknowledgements

Previous versions of this article were delivered at academic conferences and workshops at Warwick University, Uppsala University, and Potsdam University. I am grateful to members of the audience on each occasion for their critical feedback and suggestions for improvement. Four anonymous reviewers and the editorial board of *International Theory* also provided very useful comments and suggestions on earlier versions of this article. I have greatly benefited from comments and critique provided by Richard Starkey, Matthew Clayton, Göran Duus-Otterström, Victor Tadros, Octavio Ferraz, Andrew Williams, Christer Karlsson, Sverker Jagers, Johannes Stripple, Clare Heyward, Jörgen Hermansson, Eva Lövbrand, and Charles Parker. Finally, I would like to record a particular debt of gratitude to Simon Caney, not only for his penetrating feedback on earlier versions of this article, but also for his input into the broader research project on climate change ethics of which the article forms a part.

References

- Ackerman, B.A. and R.B. Stewart (1988), 'Reforming international law: the democratic caw for market incentives', *Columbia Journal of International Law* 13(2): 171–199.
- Aldy, J.E. and R.N. Stavins (eds) (2008), *Architectures for Agreement: Addressing Global Climate Change in the Post-Kyoto World*, Cambridge: Cambridge University Press.
- Banuri, T., K. Göran-Måler, M. Grubb, H.K. Jacobson and F. Yamin (1996), 'Equity and social considerations', in J. Bruce, H. Lee and E. Haites (eds), *Climate Change 1995: Economic and Social Dimensions of Climate Change*, Cambridge: Cambridge University Press, pp. 79–124.
- Barnes, P. (2001), *Who Owns the Sky?*, Washington, DC: Island Press.
- Barry, B. (2002), *Political Argument: A Reissue with a New Introduction*, Berkeley: University of California Press.
- Bazin, D., J. Ballet and D. Touhri (2004), 'Environmental responsibility versus taxation', *Ecological Economics* 49(2): 129–134.
- Beitz, C. (1979), *Political Theory and International Relations*, Princeton, NJ: Princeton University Press.
- Brock, G. (2009), *Global Justice: A Cosmopolitan Account*, Oxford: Oxford University Press.
- Buchanan, A. (2010), 'The legitimacy of international law', in S. Besson and J. Tasioulas (eds), *The Philosophy of International Law*, Oxford: Oxford University Press, pp. 79–96.
- Cameron, J. and D.W. Pierce (eds) (2002), *Rewards and Intrinsic Motivation: Resolving the Conflict*, Westport, CT: Bergin and Garvey.
- Caney, S. (2005), *Justice Beyond Borders*, Oxford: Oxford University Press.
- (2010), 'Markets, morality and climate change: what, if anything, is wrong with emissions trading', *New Political Economy* 15(2): 197–224.
- Carter, N. (2007), *The Politics of the Environment: Ideas, Activism, Policy*, Cambridge: Cambridge University Press.
- Chan, M. (2009), *Subprime Carbon? Re-Thinking the World's Largest New Derivatives Market*, Washington, DC: Friends of the Earth, <http://www.foe.org/pdf/SubprimeCarbonReport.pdf>

- Clifton, S.J. (2009), *A Dangerous Obsession: The Evidence against Carbon Trading and for Real Solutions to Avoid a Climate Crunch*, London: Friends of the Earth, http://www.foe.co.uk/resource/reports/dangerous_obsession.pdf
- De Sadeleer, N. (2002), *Environmental Principles: from Political Slogans to Legal Rules*, Oxford: Oxford University Press.
- Dobson, A. (2003), *Citizenship and the Environment*, Oxford: Oxford University Press.
- European Commission (2003), 'Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003'. Retrieved 5 December 2010 from <http://www.bmu.de/files/pdfs/allgemein/application/pdf/emissionshandel031030.pdf>
- European Commission (2009), 'EU energy and climate change package 2013–2020', *Official Journal of the European Union* 52: 1–152.
- Frey, B.S. (1997), *Not Just for the Money*, Cheltenham: Edward Elgar.
- (2000), *Inspiring Economics: Human Motivation in Political Economy*, Cheltenham: Edward Elgar.
- Gneezy, U. and A. Rustichini (2000a), 'A fine is a price', *Journal of Legal Studies* 29(1): 1–17.
- (2000b), 'Pay enough or don't pay at all', *Quarterly Journal of Economics* 115(3): 791–810.
- Goodin, R.E. (1994), 'Selling environmental indulgences', *Kyklos* 47(4): 573–596.
- Grasso, M. (2010), *Justice in Funding Adaptation under the International Climate Change Regime*, Dordrecht: Springer.
- Held, D. (2010), *Cosmopolitanism: Ideals and Realities*, Cambridge: Polity.
- Helm, D. (2005), 'Economic instruments and environmental policy', *The Economic and Social Review* 36(3): 205–228.
- Hepburn, C. (2006), 'Regulation by prices, quantities, or both: a review of instrument choice', *Oxford Review of Economic Policy* 22(2): 226–247.
- (2007), 'Carbon trading: a review of the Kyoto mechanisms', *Annual Review of Environmental Resources* 32: 375–393.
- International Energy Authority (IEA) (2010), 'Addressing climate change: policies and measures database'. Retrieved 5 December 2010 from <http://www.iea.org/textbase/pm/?mode=cc>
- Jacobs, M. (1991), *The Green Economy*, London: Pluto Press.
- Kant, I. (2002[1785]), *Groundwork of the Metaphysics of Morals* (edited and translated by A.E. Wood), New Haven: Yale University Press.
- Kelman, S. (1981), *What Price Incentives? Economists and the Environment*, Boston, MA: Auburn House.
- Keohane, R.O. (2009), 'Accountability in world politics', in S. Gustavsson, C. Karlsson and T. Persson (eds), *The Illusion of Accountability in the European Union*, London: Routledge, pp. 11–22.
- Kleingeld, P. and E. Brown (2006), 'Cosmopolitanism', in E.N. Zalta (ed.), *Stanford Encyclopedia of Philosophy*, Stanford, CA: Stanford University, pp. 1–23, <http://plato.stanford.edu/entries/cosmopolitanism/>
- Kossoy, A. and P. Ambrosi (2010), *State and Trends of the Carbon Market 2010*, Washington, DC: World Bank.
- Kurtzman, J. (2009), 'The low carbon diet', *Foreign Policy* 88(5): 114–122.
- Lane, R.E. (1991), *The Market Experience*, Cambridge: Cambridge University Press.
- Lazarowicz, M. (2009), *Global Carbon Trading: A Framework for Reducing Emissions*, London: TSO.
- Linklater, A. (1998), *The Transformation of Political Community*, Oxford: Polity.

- Lohmann, L. (2010), 'Uncertainty markets and carbon markets: variations on polyanian themes', *New Political Economy* 15(2): 225–254.
- Mack, E. (1989), 'Dominos and the fear of commodification', in J.W. Chapman and J.R. Pennock (eds), *Markets and Justice*, New York: New York University Press, pp. 198–225.
- MacKenzie, D. (2009), 'Making things the same: gases, emissions rights and the politics of carbon markets', *Accounting, Organizations and Society* 34(3/4): 440–455.
- Meinshausen, M., N. Meinshausen, W. Hare, S.C.B. Raper, K. Frieler, R. Knutti, D.J. Frame and M.J. Allen (2009), 'Greenhouse-gas emissions targets for limiting global warming to 2°C', *Nature* 458: 1158–1162.
- Metcalfe, G.E. (2009), 'Market-based policy options to control U.S. greenhouse gas emissions', *Journal of Economic Perspectives* 23(2): 5–27.
- Nordhaus, W.D. (2007), 'To tax or not to tax: alternative approaches to slowing global warming', *Review of Environmental Economics and Policy* 1(1): 26–44.
- O'Neill, J. (2007), *Markets, Deliberation and Environment*, London: Routledge.
- Paavola, J. and W.N. Adger (2006), 'Fair adaptation to climate change', *Ecological Economics* 56(4): 594–609.
- Page, E.A. (2011), 'Cashing in on climate change: political theory and global emissions trading', *Critical Review of International, Social and Political Philosophy* 14(1): 1–15.
- Paterson, M. (2010), 'Legitimation and accumulation in climate change governance', *New Political Economy* 15(3): 345–368.
- Pogge, T. (2002), *World Poverty and Human Rights*, Cambridge: Polity.
- Rose, C.M. (1999), 'Expanding the choices for the global commons: comparing newfangled tradable allowance schemes to old-fashioned common property regimes', *Duke Environmental Law and Policy Forum* 10(1): 45–72.
- Sagoff, M. (2002), 'Controlling global climate: the debate over pollution trading', in V.V. Gehring and W.A. Galston (eds), *Philosophical Dimensions of Public Policy*, London: Transaction Publishers, pp. 311–318.
- Sandel, M. (2005), *Public Philosophy: Essays on Morality in Politics*, Cambridge, MA: Harvard University Press.
- Satz, D. (2010), *Why Some Things Should Not Be for Sale: The Moral Limits of Markets*, Oxford: Oxford University Press.
- Singer, P. (2002), *One World: The Ethics of Globalization*, New Haven: Yale University Press.
- Solomon, S., D. Qin and M. Manning (2007), 'Technical summary', in S. Solomon, D. Qin, M. Manning, K. Marquis, K. Averyt, M. Tignor, H.L. Miller Jr., and Z. Chen (eds), *Climate Change 2007: The Physical Science Basis*, Cambridge: Cambridge University Press, pp. 19–91.
- Spash, C. (2010), 'The brave new world of carbon trading', *New Political Economy* 15(2): 169–196.
- Stavins, R.N. (2008), 'Addressing climate change with a comprehensive US cap-and-trade system', *Oxford Review of Economic Policy* 24(2): 298–321.
- Stern, N. (2009), *A Blueprint for a Safer Planet*, London: Bodley Head.
- Stripple, J. and E. Lövbrand (2010), 'Carbon market governance beyond the public-private divide', in F. Biermann, P. Pattberg and F. Zelli (eds), *Global Climate Governance Beyond 2012: Architectures, Agency and Adaptation*, Cambridge: Cambridge University Press, pp. 165–182.
- Tans, P. (2010), *Trends in Atmospheric Carbon Dioxide*, Boulder, CO: National Oceanic and Atmospheric Association, from <http://www.esrl.noaa.gov/gmd/ccgg/trends/>
- Tickell, O. (2008), *Kyoto2*, London: Zed Books.

- Tietenberg, T. (2006), *Emissions Trading: Principles and Practice*, 2nd edn., Washington, DC: Resources for the Future.
- Torres, G. (2002), 'Who owns the sky?', *Pace Environmental Law Review* 19(2): 515–574.
- UK Government (2008), 'Climate change Act of 2008 (C.27)'. Retrieved 5 December 2010 from http://www.opsi.gov.uk/acts/acts2008/ukpga_20080027_en_1
- UK Department of Energy and Climate Change (DECC) (2009), 'The UK low carbon transition plan: national strategy for climate and energy'. Retrieved 5 December 2010 from http://www.decc.gov.uk/assets/decc/white%20papers/uk%20low%20carbon%20transition%20plan%20wp09/1_20090724153238_e_@@_lowcarbontransitionplan.pdf
- United Nations Framework Convention on Climate Change (UNFCCC) (2009), 'Copenhagen Accord (Draft Decision -/CP.15)'. Retrieved 5 December 2010 from <http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf#page=4>
- US Congress (2009), 'American clean air and security act of 2009 (H.R. 2454)'. Retrieved 5 December 2010 from http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h2454pcs.txt.pdf
- Waldron, J. (2000), 'What is cosmopolitan?', *Journal of Political Philosophy* 8(2): 227–243.
- Walsh, A. (2001), 'Are market norms and intrinsic valuation mutually exclusive', *Australasian Journal of Philosophy* 79(4): 525–543.