Chapter Six

Informational Approaches to Climate Justice[1]

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While scholars continue to debate the normative bases and precise demands of climate justice, the basic outlines of an adequate response to the threat posed by anthropogenic climate change are clear enough. Pathways to reducing global emissions such that average temperature increases are held to two degrees of warming this century require urgent and significant action, with windows closing on the opportunity to avoid more damaging impacts if societies do not begin the decarbonization process soon. Given the collective action dimension of international climate change mitigation efforts, whereby all are tempted to free ride in the absence of binding national emissions targets, an ambitious treaty framework backed by a regulatory regime capable of enforcing universal national emissions caps would facilitate cooperation in pursuit of this objective. However, such a treaty has thus far been elusive and does not appear to offer a mechanism for ensuring that mitigation results will be delivered in time to meet the demands of justice. A major question for climate governance and ethics is therefore *how* its decarbonization objectives might be achieved, rather than precisely *how much* these objectives require of various parties or *why* they are morally significant or required by justice.

Informational approaches to decarbonization may offer one such partial remedy to problems associated with climate change, since they promise to contribute toward carbon emission reduction goals through educational and reputational pressures, but are unlikely to comprise a fully adequate remedy to climate justice objectives on their own. My interest here is in how certain kinds of inadequate but perhaps marginally beneficial remedies might motivate actions that are justified on ethical grounds, make progress toward ob-

jectives that are likewise justified, and so be justified on the basis of their role in facilitating ethical actions or bringing about ethical ends.

Harnessing information to inform and mobilize ethical action requires the existence of a motive to act on principle or to avoid harming, where ignorance concerning the effects of one's actions can prevent this motive from appearing or guiding behaviour. Where ignorance can sometimes excuse actions that would otherwise be wrongful, provided that the ignorance is itself reasonable and not willful (Bell 2011), the role played by information is fairly straightforward: it can potentially cancel excusable ignorance for those exposed to it, informing agents of the potentially harmful effects of their actions or else leaving them to cause harm through culpable ignorance, and can as a result make agents more responsive to relevant facts concerning their conformity with the normative commitments. Suddenly receiving reliable information that shows a highly probable and causally direct link between some contemplated action and serious harm to an innocent victim would immediately cancel any excusable ignorance concerning that link, and so should mobilize strong moral reasons to avoid that action and avert the harm.

The connection between some actions and harm is not so direct, narrowing the culpability gap between the ignorant and the informed agent. Information about embedded carbon within goods and services that are permissibly consumed involves this indirect link between actions and harming, since the marginal differences in individual carbon emissions that would result from any single consumer becoming highly vigilant and reducing their personal carbon footprints as much as possible would only indirectly contribute toward a marginal increase in anthropogenic drivers of climate change, with no one's personal decarbonization efforts able to demonstrably avert any identifiable climate-related harm. However, Hiller (2011)**[AQ: This cite is not in Refs]** argues from the marginal consequences of single polluting acts that avoidable emissions are *prima facie* wrong, despite the absence of palpable effects of single actions, and Nolt (2011) connects lifetime personal carbon emissions to morally significant harm, suggesting that a consequentialist basis for personal carbon abatement duties may be available. Other bases for personal decarbonization imperative, such as those involving 'mimicking duties' through which one reduces personal emissions to what would be required under a fair cooperative scheme when one cannot be brought about (Cripps 2013), those concerned with fair distributions of carbon emissions (Hayward 2006; Dobson 2006), or those seeking to combine personal emissions reductions with carbon offsets to achieve carbon neutrality (Broome 2012), can be more effectively pursued through informational efforts like product carbon footprint (PCF) labels, which allow agents to more effectively act upon such imperatives, and may lead some to consider adopting them as the result of the information they provide.

Reliable information concerning the extrinsic qualities of consumer products, along with reporting requirements for large-scale polluters and resource users, are often viewed as necessary conditions for ensuring accountability with sustainability imperatives (Stephan 2003; Auld & Gulbrandsen 2010). The gathering and dissemination of information concerning releases of harmful pollutants and production of waste makes possible conventional 'command and control' anti-pollution regulation, and data tracking the use by various parties of scarce environmental goods or services like water, energy, or greenhouse gas emissions absorptive capacity enables their more sustainable and equitable allocation (Ramkumar & Petkova 2007; Vanderheiden 2009), though in neither case does pertinent information and transparency provide sufficient conditions for realizing these objectives. Regulatory approaches to pollution control rely upon such information to track compliance with permitted emissions, but require monitoring and enforcement of compliance in order to be effective. Information in such cases provides an external assist to the primary regulatory tool, but depends upon external standards for its implicit normative critique, and does little to motivate individual or collective behavioural change on its own.

The reporting and use of information for monitoring and enforcement of pollution control measures therefore differs from what Mol (2008) terms 'informational governance', which relies upon incentives internal to the environmental information and transparency system, whether in terms of allowing an agent to more effectively advance their own ethical commitments or by mobilizing reputational accountability against bad actors by publicly shaming them for allowable but dubious actions. A core premise of this approach is thus that disclosure and transparency requirements have independent effects upon behaviour, unassisted by regulatory incentives. The 'information turn' in environmental politics suggests some transformative potential of information and transparency in the absence of coercive regulations, with information providing feedback to persons or firms about their impact upon the world that is then mediated through norms and affects behaviour directly, rather than being dependent for its behavioural effect upon externally imposed standards or policy-based enforcement mechanisms. In broad terms, this is the focus of discussion in this chapter.

Why might anyone think that information gathering and dissemination programs, on the basis of their own processes or incentives and without disclosure revealing noncompliance with external standards or otherwise triggering conventional enforcement mechanisms, could affect significant change in the environmental performance of individuals, firms, or polities? Several explanations appear within environmental policy literature. Disclosure and transparency efforts have been identified as mechanisms for ensur-

ing accountability among state and corporate actors (Keohane 2006), linked to broader trends away from secrecy in international politics (Florini 1998; Mitchell 1998), and applied to education-based efforts to improve civic competence (Mitchell 2011). Bartlett (1986) argues that the process of conducting a review and preparing and presenting an environmental impact statement (EIS), as is mandated under the U.S. National Environmental Policy Act (NEPA), embeds *ecological rationality* (Dryzek 1983) within state decision making processes, emphasizing the benefits of procedural commitment to information-gathering over the public pressure afforded by avenues of legal appeal that EIS mandates also offer. According to Bartlett, 'federal agencies were required by NEPA to improve, coordinate, consider, and recognize commitments, relationships, and environmental effects', which in effect required that they 'begin using procedural ecological reasoning in their planning and decisionmaking' (107). Elsewhere referred to as *reflexive* regulation (Orts 1995) and viewed as an aspect of reflexive modernization (Beck, Giddens & Lash 2003), this form of rationality is seen as better accounting for the ecological constraints upon and effects of state action. While Bartlett focuses upon the internal dynamics of information gathering and reporting requirements, as agencies are required to take into account additional impacts or their decisions and so recognize new values in the calculus by which those decisions are reached, others (Boström and Klintman 2008; Doran 2009) have focused upon how information and transparency requirements affect individual and firm behaviour as the information is mediated by other actors.

Because the public dissemination of information allows outside parties to hold polluters or resource users accountable for their environmental performance beyond what the law requires, Mol (2010, 135) suggests that 'transparency relates directly to power as it aims to democratize information and empower the powerless by providing them with one of the most powerful resources in current times: access to and control over information and knowledge'. This thesis concerning the empowering effects of information supposes that members of the public may be more likely and better able to challenge polluters either directly through consumer boycotts or other shaming actions (Stephan 2003), or indirectly by pressuring state regulators to enact stricter pollution controls (Cohen & Santakumar 2007). Beyond the potential empowerment of external stakeholders to hold polluters to account, Orts (1995) suggests that transparency can create incentive structures favorable to environmental performance-driven innovation through which firms can derive reputational benefits.

PUBLICIZING POLLUTION DATA: EPA'S TOXICS RELEASE INVENTORY

Perhaps the informational program most lauded for empowering affected members of the public and creating incentives for industry to improve its environmental performance is the U.S. Environmental Protection Agency's (EPA) Toxics Release Inventory (TRI), which places online a searchable database of toxic chemicals released by industry and federal agencies, including mapping functions that allow users to view pollution sources by geographic area (Harrison & Antweiler 2003). Fung and O'Rourke (2000, 123) commend this pollution disclosure program for 'the ease with which a variety of users—ordinary citizens, public interest groups, state agencies, journalists, and those in industry—can use its data to quickly and easily rank industrial facilities along a rough dimension of environmental performance', thus affecting the share value of publicly traded firms and incentivising managers to do (or appear to do) better (Sabel, Fung, & Karkkainen 1999: 6). As a community 'right to know' provision, the TRI's online database of data concerning local releases of toxics is thought to empower stakeholders in addition to informing them, and to create an incentive structure through which performance beyond that mandated by existing state regulation confers additional reputational benefits. Presumably, this empowerment mobilizes existing concerns for personal safety on behalf of meaningful exercises in public control over sources or repositories of pollution, clarifying if not creating environmental values.

Fung, who co-directs the Transparency Policy Project, has more recently backed away from this more optimistic assessment of TRI's potential for public empowerment, but remains convinced of the programs potential benefits. Writing later with Weil, Fung, Graham, and Fagotto (2006, 171), he notes that some firms 'sought to reduce their emissions by engaging in pollution prevention strategies while others substituted chemicals or changes accounting practices in ways that improved reports without necessarily improving public health'. Although not discounting its empowerment and disciplining potential altogether, the authors here place TRI in a middle category of disclosure programs, which are 'insufficient to generate effective policy outcomes but can be made to work in tandem with other government actions to embed information in action cycles that produce congruent behaviours by disclosers' (175). Existing evidence on market responses to TRI data, they note, do not show that the system's reporting requirements have had significant effects on local residential patterns or community action, suggesting that members of the public 'do not consider toxic releases when they decide what neighborhood to live in, where to send their children to school, where to work, or in what company to buy stock', and thus that TRI's effectiveness 'has been more limited than it appears' (171). Nonetheless, they found that

some firms were led to take proactive pollution-control measures in order to protect their reputations and avoid anticipated regulatory threats, with federal regulators increasingly responsive to the new information.

Work by Dingwerth and Eichinger (2010)**[AQ: This cite is not in Refs]** also finds that the links between environmental disclosure and empowerment are often overstated. In a study of the Amsterdam-based Global Reporting Initiative (GRI), which is 'regarded as the world's leading voluntary scheme for corporate non-financial reporting' (76), they find little evidence that GRI's transparency efforts lead to greater civil society empowerment. While such policies 'may work where information needs are limited' and 'where the comprehensibility and comparability of reported information is not a major problem', they 'are unlikely to work in the same way where information needs encompass a whole bundle of indicators, where the quality of data requires a higher degree of 'literacy' on the side of report readers, and where issues of comparability are more complex' (91). Moreover, since those bad environmental actors threatened by disclosure and transparency programs that threaten to bring them negative public attention are most powerful where strong civil society groups that might potentially serve as a counterweight to them are absent, in such settings 'the corporate sector can 'tame' transparency policies, reduce their transformative threat, and tailor the instrument to their own needs' (92). Transparency systems, that is, work best where civil society groups are already strong, which is also where they are least needed, while such systems can be readily coopted where civil society groups capable of holding bad corporate actors accountable are weak, rendering such systems least effective where they are most needed. In effect, the authors find that transparency systems empower the already-empowered, but fail to empower publics and potentially allowing polluters to hijack those systems where state regulatory capacity is also weakest, and vulnerability to environmental hazards the highest.

Aside from the paucity of evidence that online inventories of environmental hazards do in fact empower citizens in the way that advocates often claim, the increased access to information can have downside consequences in terms of the reactions that it induces, at least with regard to one kind of disclosure and transparency program (Langley 2001). Informational approaches like the TRI stress exposure risks, disseminating data about local environmental hazards, and so convey the dual message that one is vulnerable to harm from local sources of pollution but also potentially more empowered to minimize that vulnerability by virtue of knowing about it. Critics have questioned these claimed empowerment effects, however. Etzioni (2010) argues that environmental regulations have an 'expressive function' in declaring community norms against important hazards by controlling their causes, whereas non-binding transparency rules imply that the threat in question is 'less consequential than if the activities or products at issue are banned

or their provision is required' (15). Similarly, Szasz notes that information about environmental risks like that disseminated through TRI generate a potentially disempowering and depoliticizing reception in many (Szasz 2007, 2–4). If the environmental impacts that persons are informed about concerns risks to which they may be exposed by virtue of some of their choices, such as where to live and work, their reaction may be to adopt a defensive posture with regard to other choices that they might more readily alter, such as what to eat, drink, or wear. As Szasz notes, this defensive reaction is apolitical and not very constructive, but it also reinforces an inward-focused orientation in which environmental information erodes the normative commitment to sustainability upon which the most promising informational approaches depend.

ECO-LABELS AS MARKERS OF EXTRINSIC PERFORMANCE

But there is another kind of information that at least in principle might be able to yield the sort of socially-oriented concern for sustainability that is needed for such approaches to rival regulatory ones in their effects. The reaction that Szasz describes might follow from fear of the intrinsic effects of certain consumer goods, like 'pink slime' in ground beef or bovine growth hormone in dairy products, prompting consumers hearing about such additives to seek out 'natural' or other putatively safer alternatives, or from general knowledge about other nearby sources of contamination, provoking this defensive reaction that manifests in actions over which persons have some control. However, one would expect a quite different reaction to information about more widely distributed extrinsic effects that result from the manufacture, use, or disposal of the products we consume—about our global rather than very localized environmental impacts. Information of this second kind draws attention towards social rather than personal risks from certain kinds of products or activities, cast in terms of social or environmental costs to one's polity or the larger world, while identifying negligible personal impacts and offering no reason to modify one's behaviour from strictly selfish motives.

This kind of information can be conveyed through eco-labels, which focus on social and environmental impacts and convey information about the extrinsic effects of commodity choices, most of which have no discernible impact on the consumer purchasing them other than the kinds of reputational or status benefits that such consumption entails, thereby appealing to other-regarding concerns rather than consumer self-interest (Kaiser & Edwards-Jones 2006; Boström & Klintman 2008). Buying certified Fair Trade or USDA Organic coffee rather than uncertified alternatives promises no personal benefit to the consumer, either in terms of better taste or lower personal risks associated with consuming the product. Rather, it promises better work-

ing conditions for growers and pickers, and better prices paid to both, along with (with organic certification) reduction in local impacts from sludge or synthetic chemicals used as fertilizers or pesticides. Given the altruistic nature of the impacts that they highlight, eco-labels appeal to those for whom such impersonal effects are important. In other words, the value of eco-labels to consumers depends upon the prior existence of environmental values or concerns for social justice beyond that which can be grounded in self-interest. Preferences for credence goods may not originate from information about 'sustainable' or 'ethical' options alone—informational approaches are primarily viewed mobilizing rather than constructing the values on which they depend—but may be activated, applied, and strengthened by such efforts.

To be effective, informational efforts that rely upon product or firm certification or which report data that can be used to compare the relative impacts among alternatives must be credible to the consumer as well as providing pertinent and usable information that facilitate informed consumer choices (Auger et al. 2003). An instructive example is the food label, which can contain information not only about intrinsic properties like ingredients and nutritional value (which involves a distinct informational dynamic), but also extrinsic effects of its production on the larger world. Labels certifying primarily extrinsic properties like 'GMO-free' foods have generated more controversy than those reporting purely intrinsic properties like caloric content (Gupta 2010), as the result of food industry opposition to such labels and World Trade Organization standards that view such process-based labels as constituting an illegal trade barrier. Such controversy owes in part to their potential to empower consumers to use their purchasing power to oppose processes that may not qualitatively change their food (though this remains a controversy with GMO foods) but which can have palpable effects in the world.

Since a significant part of the market appeal of such goods lies in their claim to a more socially or environmentally benign supply chain impact, products certified and marketed in this way are known as *credence goods*. Third party certification schemes promise consumers of credence goods that specified social or environmental standards have been met, providing an additional source of value beyond that intrinsic to the commodity itself. With Fair Trade coffee, for example, NGO certification requires that growers be paid a floor price above market rates for beans, and that production processes meet basic labor and environmental guidelines. Critics point out that the required floor price is still quite low, that most of the added value from fair trade coffee accrues not to growers but to the relatively affluent roasters and distributors of fair trade beans, and that requirements to form cooperatives may have hurt some growers (Philpott et al. 2007; Jaffee 2012). Since large corporations like Folger's and McDonald's have used their buying power to

eliminate middlemen and so gain fair trade status for their coffee, critics worry about the effects on small suppliers of this dilution of fair trade status, and in response have proposed expanding the binary certification with a tiered system that recognizes varying levels of support for growers or commitments to sustainable processes. Nonetheless, Fair Trade certification represents a higher standard than non-certified alternatives, appealing to the 'ethical consumer' to treat this as a source of the product's value, alongside its intrinsic properties.

In a study of market demand for Fair Trade coffee, Margaret Levi and April Linton characterize 'green' or 'ethical' consumerism as maintaining that 'purchasing power is used to promote moral ends, goals that serve the material interests of others often at a cost (albeit sometimes relatively minor) to the consumer' (2003, 407), where the goal is to change behaviour 'by transforming individual tastes and preferences' and inculcating 'the norm that people in prosperous countries should factor global social justice into their buying decisions' (419). Their findings, however, cast doubt on the transformative potential of such an approach. They find that few consumers are willing to buy certified beans unless they also taste good, and then are only willing to pay a small premium for the credence good that certification represents. If the extrinsic social and environmental effects of Fair Trade certification efforts constitute the basis for standalone reasons for consuming one product rather than another, they suggest, the value of the credence good that certification provides is relatively small. Likewise, consumers willing to pay only a small premium for goods with purportedly smaller social or environmental impacts upstream in the supply chain may not be acting from ethical motives of harm avoidance so much as seeking to assuage guilt related to their consumption practices, calling into question whether such practices warrant the label of 'ethical' in the first place.

Informational efforts to inform consumers of the social and environmental impacts of their purchasing decisions rely upon a dynamic by which latent social and environmental values may be activated and directed toward more just or sustainable consumption behaviours, and perhaps instantiated and strengthened by presenting evidence of global problems with which existing consumption patterns are causally linked. Information that is gathered, processed, and disseminated through such efforts may have value beyond its use in product certifications and labels, consumer education campaigns, and transparency programs, including its use in lifecycle analysis programs that promote sustainability objectives by minimizing waste and in regulatory monitoring and compliance. While acknowledging its limits as an agent for widespread social and environmental change, I shall indirectly consider the transformative potential of information by focusing more narrowly upon a key dynamic of the workings of informational efforts, along with a normative question that this dynamic suggests: namely, whether persons or states have a

responsibility to recognize available information about the broader impacts of consumer choices, and what follows for politics from an affirmative answer to this question.

Information has this transformative potential on a small scale insofar as some persons notice and cognitively assimilate it, revealing conflicts between what that information indicates and their considered value judgments, thereby promoting reflection on and revision of existing preferences and thus behaviour change as a result. Those, for example, who are opposed to animal cruelty but unaware of which products rely upon it might benefit by information systems that accurately and credibly make this distinction. They might personally be able to exercise greater moral integrity by avoiding consumer behaviours that conflict with their considered ethical judgments, thus becoming more ethical consumers, as the result of information and transparency efforts. Prospects for reducing the occurrence of animal cruelty might depend upon decreases in market demand for products from sectors in which cruelty is pervasive, rather than product differentiation through certification schemes within those sectors. The potential for bringing about change on a wider scale depends either upon the number of consumers affected by informational efforts in the manner described above, or through the transformation of public norms, which condition preference formation and so can have force by instantiating rather than merely mobilizing relevant values. Evidence of informational campaigns creating public distaste for certain product types rather than merely mobilizing latent preferences against those goods can be seen in the rapid public shift away from Canadian seal fur following Greenpeace anti-sealing campaigns (Dauvergne 2010), but evidence for impacts upon meat consumption patterns from campaigns against veal and other factory-farmed animal products has been elusive (Tobler, Visschers & Siegrist 2011).

CERTIFICATION, TRANSPARENCY, AND RESPONSIBILITY

The critic of informational approaches is surely right in suggesting that serious global problems like climate change cannot be effectively addressed through such voluntary measures alone, but the defender of the informational approaches on which green consumerism depends can concede this point without abandoning the transparency project altogether. So long as it is treated as merely one mechanism among several for encouraging persons to behave more responsibly in the context of climate change or other social or environmental consequences of current consumption patterns, opposition to regulatory measures is not a necessary feature of the defense of voluntary ones. Informational approaches promise to develop a resource that is as just as useful for holding persons responsible through regulatory efforts as it is

for inducing them to voluntarily take responsibility for their actions. If states want to impose carbon budgets on their citizens or attach a price to carbon through taxes or trading systems, information about the carbon emissions resulting from various products or activities is needed in order to monitor and ensure compliance with regulatory efforts, as are the life cycle analyses through which such information can be gleaned. If persons are to comply with self-imposed personal carbon allowances or satisfy voluntary carbon neutrality objectives (Broome 2012), they likewise need information about their current footprints and the effects on them of alternative choices so that they can make informed carbon budgeting decisions. Without it, they cannot take responsibility or be held responsible for their carbon emissions (Vanderheiden 2011), since their carbon footprints cannot be compared against their carbon budgets. If they are to develop the virtues of ecological citizenship associated with seeking to claim only equitable shares of ecological space (Dobson 2006), they require basic information about their personal consumption impacts along with comparative data on per capita footprints elsewhere and system-wide ecological capacities. Such information also risks disempowering persons when ethical demands to sharply reduce their footprints appears overly demanding, as with data showing U.S. per capita carbon footprints to be well in excess of what is required to meet 2 degree maximum temperature increase goals, so both positive and negative effects upon mitigation ambitions must be kept in mind as relevant data is collected and presented for public consumption.

What sort of information is required, and how does it work to facilitate these mechanisms of political accountability and personal responsibility? An instructive example is the food label, which can contain information about its various intrinsic or extrinsic attributes. Food labels now reveal information about a product's intrinsic nutritional properties: its ingredients, calorie and fat contents, percentage of a day's recommended dose of vitamins and minerals contained in each serving, and so on. In some cases, warnings are issued on labels, as with alcoholic beverages and pregnancy. Food labels are useful for those following strict dietary guidelines, like prohibitions upon animal products, as well as for those seeking to limit but not entirely avoid things like calories or carbohydrates. Labels that certify some combinations of intrinsic and extrinsic attributes like those identifying kosher or organic foods are both highly useful to those for whom such attributes are important and relatively uncontroversial. On the other hand, labels certifying primarily extrinsic properties like 'GMO-free' foods have generated more controversy (Gupta 2010), as the result of industry opposition to such labels and free trade standards that view such process-based labels as constituting an illegal trade barrier. Controversies over labelling schemes owe in part to their potential to empower consumers to use their purchasing power to oppose process-

es that may not qualitatively change their food (though this remains a controversy with GMO foods) but which can have palpable effects in the world.

Binary certification schemes like Fair Trade and the anti-sweatshop No Sweat label make no distinctions among products earning the label and provide no information about products that lack certification. Graduated schemes offer more detail, as in the USDA Organic label's three levels of certification for products made with 70 percent, 95 percent, and 100 percent organic ingredients, but convey no information about uncertified products. More universal and linear labelling schemes could potentially provide far more useful information, since they would allow more meaningful comparisons to be made within categories of goods or services as well as between such categories. Persons using them to advance their ethical commitments could not only more accurately determine how best to avoid harming within the constraints of their current consumption preferences, if adopting carbon neutrality pledges or engaging it 'mimicking duties' that require cuts personal carbon footprints proportional to those required for collectives under climate justice imperatives (Cripps 2013), but could also evaluate those preferences on the basis of their relative impact compared to alternatives. Energy efficiency labels, for example, enable easy comparison among alternatives within some product category in terms of energy efficiency, which concerns their intrinsic properties in affecting energy costs to the consumer as well as extrinsic properties in assessing relative environmental impacts. Product carbon footprint (PCF) labels, which report only upon the extrinsic property of a product's carbon footprint, can similarly generate incentives for manufacturers to decarbonize their product lines while also empowering consumers to act on their environmental values, and perhaps also to strengthen such values through a process of reflective equilibrium between one's lifestyle or consumption preferences and their environmental commitments.

PCF labels can influence consumer choices or inform institutional purchasing decisions by revealing comparative information about a given product's impact on climate change, but can potentially also be a valuable diagnostic tool in encouraging firms to conduct life-cycle analyses that identify efficiencies in their supply chains. As Vandenberg, Dietz, and Stern observe:

> Labelling also may induce firms to reduce their emissions in ways that lower their costs, enhance their reputations and make them more supportive of governmental policy measures that reinforce their emissions-reducing actions. This easily overlooked effect of carbon labelling will occur to the extent that firms respond to generalized concerns about brand reputation even if consumers only demonstrate limited willingness to pay for lower-carbon goods. Indeed, it seems that many firms have overlooked supply-chain efficiencies, and are not acting on substantial opportunities to cut costs and reduce emissions. Developing the data to underpin carbon labelling can identify and highlight these potential savings and spur changes in production and distribution

> throughout the supply chain; an effect that may be a more potent incentive than the immediate impacts of consumer choices. Industries have responded similarly in the past. (2011, 5)

As with other forms of life-cycle analysis through which supply chain impacts are estimated through comprehensive inventories of production-related material inputs and environmental releases, the procedural requirement entailed by such disclosure programs involve substantial initial costs. However, such costs can be partly justified by the economic benefits to the firm of potential for realizing efficiency gains in reducing materials or energy use or waste production, combined with the reputational and environmental benefits of successfully pursuing these. Notably, only some of these benefits depend upon consumers being willing to pay more for green products.

Beyond these conditioning effects upon firms, however, perhaps the most promising element of PCF systems concerns the effect upon norms of transparent environmental impacts. As Vandenbergh and Steinemann note of carbon neutrality pledges, which are voluntarily taken by persons or groups but facilitated by carbon footprint calculators, the goal of achieving carbon neutrality (which requires one's personal carbon emissions to be balanced by offsets) 'enables individuals to take personal responsibility for their contributions to climate change without reliance on uncertain or shifting estimates of the necessary reductions of others' behaviour' (2007, 1720). Apart from encouraging such voluntary efforts at decarbonization, along with allowing more robust measurement of progress toward carbon neutrality goals, Vandenbergh and Steinemann suggest that PCF systems also provide 'information that activates norms', which they suggest 'may be necessary for more traditional regulatory schemes to be politically viable' (1726). In fostering an ethos of what Dobson describes as 'thick cosmopolitanism', which he describes as 'identifying relationships of causal responsibility' that 'trigger stronger senses of obligation than higher-level ethical appeals can do' (2006, 182), PCF labels and the personal carbon accounting they encourage can not only promote greater ethical concern or reflection, improving individual behaviour outside of any coercive policy tools that incentivize sustainability, but it can potentially also generate the necessary public support for developing supplemental policy approaches. By starting to track information like product carbon footprints now, moreover, carbon leakage that results from emissions that are embodied in trade can be more readily identified, with national mitigation targets adjusted to reflect not where greenhouse pollution occurs through production processes but where demand for or consumption of carbon-embodied goods occurs (Davis, Peters & Caldiera 2011), leading to better state-level carbon accounting. Measures ensuring that no person or state can artificially shrink their carbon footprint merely by shifting the production of high carbon-embedded goods across borders help to reinforce

equity norms, which depend upon agents being held responsible for the emissions they cause, while the sort of carbon leakage that results from the inability to track carbon through trade can undermine these norms by allowing some to shift the responsibility for their consumption impacts onto others.

INFORMATION AND INTEGRITY

How do informational approaches promise to bring about preferences transformation and behavioural change, and what does this process imply for questions about responsibility? The moral psychology of informational approaches operates in those markets where the sale of less egregiously harmful products than some might otherwise consume is allowed, with agents facing an ethical dilemma when confronted by such information. Here, information is meant to appeal to the value judgments of some (but not all) persons in their capacities as consumers, and can report positive or negative attributes of products or the processes by which they are made and brought to market. Of primary importance to ethical decision making are those extrinsic impacts of goods or services upon other people or the environment, which persons *qua* consumers must assimilate and combine it with other information about the relative merits of alternative lifestyle and consumption preferences, forming and revising those preferences through reflection upon their considered value judgments. Informational efforts are thus linked to behaviour through personal values and social norms, and while behavioural change may be the primary policy objective from of such efforts, the focus here shall be upon the normative issues that surround the interaction of information with personal values and social norms.

A core component of this interaction is the psychological need for or moral commitment to integrity, which requires a kind of reconciliation between one's personal values and actions. Stephen Carter casts integrity as a 'pre-political' virtue 'without which other political views and values are useless' (1996, ix), suggesting its foundational role in normative political problems but also setting it apart from more substantive value commitments. Integrity doesn't presuppose any substantive social or political ends, but allows for their pursuit. Those exhibiting integrity in their personal or public lives avoid acting in ways that violate their deeply held views about right and wrong and seek a kind of reflective equilibrium between their value judgments and actions, revising both to bring them in accord with one another. As a psychological imperative, they are troubled by contradictions between their actions and beliefs, where they might not be true to themselves. As a social imperative those with integrity are concerned with doing as they outwardly represent themselves as believing and appearing to others as such. Insofar as the dissemination of information about the social and environmental effects

of commodity options induces changes in consumer behaviour, the moral psychology at work involves integrity, in this inward private or outward public sense. Coming to know certain facts, whether that information was intentionally sought or inadvertently acquired, brings about this discomfort, with changes in one's consumer behaviour as one means of reconciling the conflict between values and action.

Other means for resolving such inner conflict are also available, and can work against the aims of informational efforts. The oft-observed phenomenon of youthful idealism giving way to hardened cynicism or self-oriented materialism could be explained by the gradual revision of social and environmental values rather than consumer preferences, where persons maintain their integrity by simply narrowing the scope of their concern or amending their moral commitments based on a revised assessment of what is possible, as the opportunity costs for maintaining that idealism with integrity increase. In addition, minimal cleverness is needed to rationalize one's existing consumer behaviour, convincing oneself that the gap between one's values and behaviour is not as large as it is in fact, often in ways that border on self-deception but nonetheless satisfy the psychological need to avoid cognitive dissonance. By adopting a self-serving skepticism about product information or the social and environmental problems with which it is linked, or by selective attention to data based on its propensity to validate existing behaviour, persons can maintain integrity while allowing wide gaps between their values and behaviour by convincing themselves and/or others that those gaps are in fact small or nonexistent. The tenacity with which we sometimes rationalize our consumer behaviour reveals the power that our integrity imperative exercises on us, along with illustrating one of our cognitive defenses against that imperative compromising our narrower self-interest. Insofar as information regarding the impacts of our actions can undermine this self-serving rationalization and so better hold our behaviour accountable to our values, transparency can increase the tension between our desire for integrity and our preference to avoid critically reflecting upon and potentially reforming our current consumption practices.

The internal dynamic in which integrity features is linked to issues of ignorance and responsibility, which raise normative questions about culpability for willful ignorance in the face of available information. If persons have some moral responsibility to seek out information concerning the social and environmental impacts of their actions and choices, to reflect on this information, and to revise the values and/or behaviour accordingly—where integrity plays the pivotal role in prompting our reflection and revision upon cognitive recognition of the information in question—then they cannot cope with the demands of integrity by adopting a self-serving but deceptive skepticism or maintaining a willful ignorance. A genuine moral commitment to integrity, as opposed to having a psychological need for resolution of inner

conflict, could not be maintained disingenuously or through self-deception without being self-undermining. Persons could still revise their values in light of information that showed them to contradict those values in some actions that they have other reasons for seeking to maintain, so they need not necessarily revise consumer behaviour in the face of cognitively recognized information, but some popular strategies for coping with the gaps between values and actions that integrity seeks to close would be off limits, perhaps as inconsistent with integrity itself. A vegan might revise her outright ban upon animal products upon learning about what she regards as humane dairy practices, for example, but a self-serving but uninformed skepticism about the existence or perniciousness of sweatshop labor could not be adopted without violating integrity itself, even if such adoption allowed greater unfettered consumption opportunities. In this sense, information couples with integrity to guard against what Gardiner (2011) terms 'moral corruption', through which agents maintain willful ignorance in order to avoid incurring costs to themselves that accrue from doing as they ought.

This kind of responsibility, through which persons are made to view their actions in an interdependent global context, helps to define the notion of cosmopolitan citizenship (Dobson 2006), through which persons concern themselves with the global effects of their local actions, and has implications for informational governance to be explored below. As Young suggests, it may ask persons 'to reflect morally on the normal and hitherto acceptable market relationship in which they act' (2004, 378), challenging norms where necessary rather than seeking to hold specific agents responsible for harm caused by a combination of economic forces and overly permissive norms. Even where persons do not directly cause harm, which might result instead from the aggregation of many small contributions by many and multifarious acts, they can be viewed as complicit in harmful outcomes that they cannot prevent from occurring (Kutz 2000).

Several problems confound the transformative potential of information from having the transformational effects described above. Accurate information concerning the social and environmental effects of commodities whose production relies upon complex global supply chains can be hard to gather (Conca 2001), as these are typically deliberately shrouded in opacity and distant from those whose disapprobation would most threaten them, and greenwashing efforts can simultaneously frustrate data collection and undermine public confidence in its accuracy and objectivity. Absent credible and comprehensive information that can be gathered and consolidated, little benefit results from its effective dissemination. Supposing that this obstacle can be overcome and a credible and comprehensive dataset assembled, further problems with the presentation and dissemination of information arise, as overly complex data reporting can confuse or otherwise overwhelm its intended audience while oversimplified presentation can minimize its informa-

tional value and trivialize the range of impacts that some products cause by myopically focusing upon a single one. But supposing that this obstacle is likewise overcome, and good data is well and widely disseminated, a final problem is likely to face informational efforts: those exposed to this potentially transformative information may choose simply to ignore it, preferring to remain ignorant of the social and environmental effects of their consumer actions and behaviour, despite the low costs of rectifying this ignorance and acting accordingly.

Certainly, humans are generally disinclined to seek out information that might make them complicit in harmful outcomes that they cannot prevent from occurring. Many, to paraphrase Peirce, cling with tenacity to those beliefs that best fit with their views of the world and of themselves, often in the face of what should be reasonable suspicions about the accuracy of those beliefs. They rationalize their past actions and justify their future ones by stubbornly refusing to consider that those actions may contradict their core value commitments. These are, I think, basic facts about human nature: that many (though not all) persons are uncomfortable with the cognitive dissonance that results from conflicts between our normative and empirical beliefs. Regardless of how well-founded our normative beliefs are at the time that we form them, once formed we are reluctant to revisit them, which we may be forced to do if we admit contrary facts into our cognitive field. But tendencies latent in human nature cannot be self-justifying (Estlund 2011, 220–21), and we need further reasons than the desire to simultaneously avoid cognitive discomfort and the costs associated with being a good cosmopolitan citizen.

CONCLUSION: INCREASING THE IMPACT OF INFORMATION

In contrast to disclosure programs like TRI that offer stakeholders information without allowing them the agency to grant their informed consent to the exposure risks that its data might reveal or empowering them to make choices that signal their approval or disapproval of high or low levels of environmental performance, the disclosure contained within an eco-label can potentially harness the agency of concerned stakeholders to make choices that support good environmental performance. All else being equal, eco-labelling has more transformative potential than TRI.

However, meaningful opportunities for agency are clearly not a sufficient condition for eco-labels to have the transformative potential described above, and so it might not be the case that all else is, in fact, equal. Most notably, eco-labels rely upon a different and less powerful set of motives for change, since their concern is not with disclosing information regarding local exposure risks, which residents may seek to avoid when evaluating their residen-

tial options or in deciding whether to move away from riskier locations, but is rather with the often distant effects of everyday choices that have little or no discernible impact upon those empowered to choose on the basis of the information they convey. Here, agency trades off against urgency, where persons are more empowered to take the kinds of actions that matter less to them. Concern for others, including the kinds of environmental and social impacts that could be conveyed through eco-labels, and perhaps inescapably less salient to most preference orderings than is self-interest, but this need not deter inquiry into the potential for harnessing the former in the service of defensible ends as well as the latter.

Whatever else they include, one way to increase the incentive effect of eco-labels is to take a lesson from the logic of online inventories. We might ask: why do we require polluters to publicly disclose their emission records, or manufacturers the environmental impacts of their production processes? As Gupta notes, the logic is the same in both cases, even though the former is a common and widely-accepted mandate while the latter is not. Disclosure programs, she writes, have three primary purposes:

> First, a normative right to know of recipients as an end in and of itself; second, it may seek to further various procedural ends, such as enhanced participation or choice of recipients, or enhanced accountability of disclosers; and finally, disclosure may seek to further substantive ends such as environmental improvements, sustainable resource use or risk reduction. (2010, 33–34)

Information about local environmental hazards and pollution sources, as is provided through programs like the TRI, can be seen as accomplishing all three of these: satisfying the 'right to know' demands of an affected public whose health is putatively being protected by pollution control agencies that through this protective responsibility must keep residents informed about any known risks; holding polluters accountable by disclosure combined with the empowered resistance to excessive risks that such disclosure enables; and creating incentives for improved performance by publicly shaming bad environmental actors and implicitly commending good ones. As Gupta suggests, the logic of transparency is the same for voluntary programs like eco-labels as it is for regulatory ones like online pollutant inventories of the TRI. Reliance upon purely voluntary eco-labels or certification programs only captures half of the reputational benefits noted above, since the voluntary nature of such systems entails that only potential beneficiaries of their reputational effects will opt in. Insofar as the public has the right to know about bad as well as good products and firms, and bad actors deserve to be held accountable or suffer reputational sanctions for their poor performance along with good actors benefitting by their better performance, labels or certification systems ought to be required of all products and firms, not merely the good

ones. Eco-labels could wield the stick of bad publicity for bad performance along with the carrot of good publicity for its opposite, furthering the objectives of pollution reporting systems by allowing for pressure to be placed on polluters at the point of sale in addition to the end of pipe. By including linear rather than binary information and by doing this for a greater range of goods as services, as PCF and other carbon measurement and disclosure schemes promise, the utility of informational approaches in tracking conformity with either internally or externally imposed standards increases, as do opportunities for greater reflexivity and preference transformation in the way that persons interact with their environment. Information gathered and disseminated through such self-governing systems could also be of potential use to effective carbon accounting or pricing systems, which are able to supplement the educational and mobilizing value of voluntary programs with the binding force of law and policy, using much of the same information for different purposes. Together, the imperatives of climate justice that depend upon the recognition of and aspiration toward quantitative targets based in principles of distributive equity might more effectively be realized.

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NOTE

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