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The Concealments of Carbon Markets and the Publicity of Love in a Time of Climate Change

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Abstract

The Kyoto Protocol and the United Nations Framework Convention on Climate Change have failed to engage the nations in a cooperative approach to reducing the greenhouse gas emissions that are destabilizing the earth's climate. Central to this failure is the resort to neo-liberal market techniques—and in particular markets in carbon emissions—for the management of emissions reduction. The resort to Carbon Emissions Trading (CET) reveals the problematic philosophical premises of economic neo-liberalism, which include a preference for anonymous algorithms as managers of human affairs over face-to-face political communities and shared engagement of citizens and corporations in practices that promote the common good of a stable climate. It is proposed in this article that a core task of the church's public responsibility in relation to climate change is to offer a theological critique of neo-liberal approaches to climate change mitigation and against these to advance a spiritual theology of cooperative action for the common good of a stable climate in which love for near and distant neighbours, and creatures, is the key metaphor.

Keywords

emissions, carbon market, climate change, love, power, common good

It was first proposed by John Tyndall in 1859 that greenhouse gases—and especially carbon dioxide—play a role in regulating the diurnal temperature of the earth. In 1938 G. S. Callendar argued that fossil fuel burning was raising atmospheric carbon dioxide and that this had warmed the planet by one degree Fahrenheit. Charles Keeling demonstrated that atmospheric CO₂ from fossil fuels was rising from a data set that he began in the 1950s at the Mauna Loa observatory in Hawaii. Data from thousands of weather stations and satellites indicate that the planet has warmed by an average of 0.8 degrees Centigrade since the industrial revolution, and that the rate of warming has

increased since the 1950s with the rapid growth in CO₂ pollution.¹ Despite a snowy winter on the United States Eastern Seaboard and in Northern Europe, January 2010 was the warmest January since satellite temperature records began, with land areas in the sub-Arctic region showing a warming of up to seven degrees Centigrade on the satellite average for the previous three decades. Hence there are bark beetles in Vancouver and Toronto, hastening the demise of hundred year old trees that were not seen, until recently, north of the 49th parallel, and beech trees are colonizing the edges of the Arctic ocean.

Scientific agreement—widespread if not universal—that carbon dioxide pollution could destabilize the climate system led to the inauguration of the United Nations Framework Convention on Climate Change in 1992, and it is now ratified by 194 member states of the United Nations. The Parties to the Convention acknowledge that ‘change in the Earth’s climate and its adverse effects are a *common* concern of humankind’; that human activities are ‘enhancing the natural greenhouse effect’; that ‘the largest share of greenhouse gases originated in developed countries’; that ‘the global nature of climate change’ requires ‘cooperation by all countries’ in an ‘international response, in accordance with their *common* but differentiated responsibilities’; and that countries have a ‘responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States’.² The Convention expresses a determination ‘to protect the climate system for present and future generations’ and to stabilize ‘greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system’.³ In sum the UNFCCC makes the claim that industrial gases are changing the earth’s climate, and that a stable climate is a universal common good whose preservation requires cooperative international mitigating action.

The first international environmental law designed to stimulate preventative or mitigating action was the Kyoto Protocol which was ratified by 184 parties to the UNFCCC, though not by the United States of America. This is despite the fact that the United States has parked the largest share of greenhouse gases in the atmosphere and remains the largest present emitter after

¹ For an overview of the emergence of the science see S. R. Weart, *The Discovery of Global Warming* (Cambridge, MA: Harvard University Press, 2004).

² Text of the United Nations Framework Convention on Climate Change, *United Nations* (1992), <<http://unfccc.int/resource/docs/convkp/conveng.pdf>> [accessed 17 February 2010] (my italics).

³ *Ibid.*

China. The majority of atmospheric greenhouse gas emissions were emitted from industrialized nations and the Kyoto Protocol committed thirty-seven of them to mitigation actions, mandating a per-country average of five per cent reductions in greenhouse gas emissions in the first commitment period from 2008 through 2012. Despite the low target many will not meet it and hence the Protocol is widely seen as a failed treaty. Reasons for its failure include the low reduction targets, and the fact that they reduce pollution in less than a quarter of nations; that there are no enforcement mechanisms for countries that do not comply with reduction targets; that it inaugurated a neo-liberal regime of market instruments in carbon emission trading that, while making atmospheric pollution—and atmospheric space for pollution—tradable products, do not promote physical reductions in pollution.⁴ The likely net effect of the Kyoto Protocol first commitment period will be at best a twenty or thirty year delay in anthropogenic warming of around 0.2 degrees Centigrade.⁵ Nonetheless the Protocol has many defenders, not least in the developing world, as was evident at the 2009 Copenhagen Climate conference, since it is the only existing legal instrument for greenhouse gas emission reductions. The principle the protocol enshrines of internationally agreed greenhouse gas emission reductions—that could be deepened in their effects over time—is seen as too important to give up given the complexities involved in negotiating a new treaty.

Many resist the Kyoto Protocol not because its targets are ineffective but because the principle of UN-set emissions targets undermines the economic, and hence political, sovereignty of nation-states. This is a criticism most often heard in the Senate of the United States, which voted ninety-nine to one under Clinton-Gore against ratifying the Kyoto Protocol and remains steadfast in opposing any treaty restraining greenhouse gas emissions in the United States. The Senate also opposes the Kyoto Protocol since it does not require developing countries to reduce their greenhouse gas emissions, and therefore it is said to disadvantage American businesses and employers relative to developing countries. Furthermore majority opinion in the US Senate is ‘climate sceptic’ and opposes the scientific argument that climate change is related to human activities.

⁴ J. T. Roberts and B. C. Parks, *A Climate of Injustice: Global Inequality, North-South Politics, and Climate Policy* (Cambridge: MIT Press, 2007), pp. 219 and 383; Larry Lohmann, ‘Carbon Trading, Climate Justice and the Production of Ignorance: Ten Examples’, *Development*, 7:3 (2008), 1–7.

⁵ E. A. Page, *Climate Change, Justice and Future Generations* (London: Edward Elgar, 2006), p. 174.

Since Copenhagen such ‘climate scepticism’ has grown in the USA, and in other Anglosaxon domains including the United Kingdom and Australia.⁶ In the UK a BBC poll in February 2010 revealed that only twenty-six per cent of the population believe it is established that ‘climate change is largely man-made’.⁷ In Australia a new climate sceptic political party has been launched and the cap and trade legislation of Kevin Rudd’s government was voted down in the Senate.⁸ Climate Scepticism has been fuelled in the UK and beyond by extensive media discussion of evidence published on the first day of the Copenhagen conference of putative scientific manipulation of Chinese weather station and tree-ring data sets at the University of East Anglia’s Climate Research Unit.⁹ Journalists then identified a small number of significant errors in the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, the body which is commissioned by the UNFCCC to collate scientific data on climate change and to report on its policy implications. The most significant flaw was the erroneous claim that the Himalayan glaciers—the largest body of ice outside the Poles from which more than 1.3 billion people derive fresh water—would melt by 2035.¹⁰ Neither story invalidates scientific observations of rising temperatures, acidifying oceans, melting ice, spreading deserts and drying forests, but these media stories promote the idea in the public mind that the case for anthropogenic global warming and the challenge it represents to the industrial, consumer lifestyle is unproven.

The Copenhagen conference of 2009 was intended to update the Kyoto Protocol, including mandating more robust levels of greenhouse gas reduction in developed countries and drawing developing countries into the process so that growth in emissions would peak before 2020 and then begin to decline. However fundamental disagreements over matters agreed at previous Conferences of the Parties—the legitimacy of the Kyoto Protocol, the definition of dangerous climate change as an average warming above two degrees Centigrade, the science of anthropogenic climate change, the efficacy of

⁶ K. Strassell, ‘The Climate Change: The Number of Sceptics is Swelling Everywhere’, *Wall Street Journal* (29 June 2009).

⁷ ‘Climate Change Scepticism ‘On the Rise’, BBC Poll Shows’, *BBC News* (7 February 2010), <<http://news.bbc.co.uk/1/hi/sci/tech/8500443.stm>> [accessed 16 February 2010].

⁸ A. Barrowclough, ‘Australian Climate Policy Destroyed as Senate Votes Against Carbon Legislation’, *The Times* (2 December 2009).

⁹ R. J. Cicerone, ‘Ensuring Integrity in Science’, *Science*, 327 (5 February 2010), 624.

¹⁰ RealClimate, ‘IPCC Errors: Facts and Spin’ (14 February 2010), <<http://www.realclimate.org/index.php/archives/2010/02/ipcc-errors-facts-and-spin/>> [accessed 17 February 2010].

carbon markets—prevented any comprehensive treaty being agreed in Copenhagen. The final plenary agreed to note the existence of a ‘Copenhagen Accord’—a brief memorandum drawn up by the Premiers, or deputies, of the United States, China, India and Brazil—but the Accord is not a legal instrument or treaty.¹¹

What many regard as the failure of the Copenhagen Conference accompanies the failure of the UNFCCC process, and the Kyoto Protocol, to impact in a detectable way on the geochemical footprint of the global economy on atmospheric greenhouse gases. The Mauna Loa record of the presence of CO₂ in the atmosphere shows an inexorable rise throughout the eighteen years of the existence of the UNFCCC, including the first commitment period of the Kyoto Protocol. Consequently, as the scientific briefing to the Copenhagen Conference states, ‘global carbon dioxide emissions from fossil fuels in 2008 were 40% higher than those in 1990’.¹² The failure of the Kyoto Protocol to restrain global growth in greenhouse gas emissions is in marked contrast to the Montreal Protocol, which was signed into law in 1987 and led to restrictions on the use of, and then a global ban on the production of, the principal ozone depleting chemicals. So effective is the global ban that atmospheric concentrations of chlorine began declining in 1997. The annual atmospheric ozone hole over Antarctica and the Southern Ocean has stabilized and will likely begin shrinking by 2023.¹³

The failure of the UNFCCC, as compared to the treaty process that led to the Montreal Protocol, is in part because of the greater complexity involved in regulating fossil fuel production as compared to chlorofluorocarbons. The latter were only made by a small number of companies and the largest of them—Dupont—had already invented an alternative. But the failure also reflects a shift in underlying philosophical values that corrode belief in the value of cooperative action and shared practices for the achievement of a global common good, such as a stable ozone layer or a stable climate. This

¹¹ The text of the Copenhagen Accord is part of the minutes of the last day of the Copenhagen Conference (7–18 December 2009), United Nations Framework Convention on Climate Change <<http://unfccc.int/resource/docs/2009/cop15/eng/l07.pdf>> [accessed 17 February 2010].

¹² I. Allison, N. L. Bindoff, R. A. Bindshadler et al., *The Copenhagen Diagnosis: Updating the World on the latest Climate Science* (Sydney: UNSW Climate Change Research Centre, 2009).

¹³ P. A. Newman, E. R. Nash, A. R. Douglass, et al., ‘Estimating When the Antarctic Ozone Hole will Recover’, in C. Zerefos, G. Contopoulos and Gregory Skalkas, eds, *Twenty Years of Ozone Decline* (New York: Springer, 2009), pp. 192–200.

shift is evident in the reliance of the Kyoto Protocol on market techniques, and in particular Carbon Emissions Trading, for achieving international mitigation of greenhouse gas pollution.

In essence CET schemes involve the imposition by government of regulatory caps on emissions by greenhouse gas polluters, beyond which they are required to purchase permits to pollute. Companies or agencies that pollute below the cap can sell permits to others that pollute above the cap. Permits—effectively corporate carbon offsets—are traded in carbon markets, some of which operate within and some beyond national boundaries. A number of trading schemes are already in operation but the two largest, and with the longest track records, are the Clean Development Mechanism and the European Union Emissions Trading Scheme. Neither scheme has demonstrably reduced global emissions of CO₂ which have been rising at four per cent per year since 1990.

Billions of dollars have been invested in inventing and managing new carbon markets but this commitment of resource, and of human ingenuity, is misdirected.¹⁴ Instead of physically reducing carbon emissions through investment in energy conservation, and in technologies such as carbon capture and storage and renewable energy, CET establishes accounting procedures that permit polluting corporations to justify their continuing pollution through the gift to them, or purchase by them, of permits to pollute which are tradeable in the growing number of carbon exchanges around the world. So many carbon permits have been issued in the various carbon schemes by public authorities that the price of carbon per tonne is so low as to provide no incentive to reduce pollution or save energy. Consequently emissions trading merely legitimates existing levels of corporate pollution through market instruments and hence many industrialized countries will not meet their Kyoto commitments to physically reduce carbon emissions by 2012, though they will have bought international carbon permits to ‘justify’ their excess emissions.

Investigations of the workings of the principal CET schemes—the Clean Development Mechanism and the European Union Emissions Trading Scheme—reveal significant flaws and widespread fraud in their operation.¹⁵ The biggest element of fraud in the Clean Development Mechanism relates

¹⁴ L. Lohmann, *Carbon Trading: A Critical Conversation on Climate Change, Privatisation and Power* (Uppsala: Dag Hammarskjöld Centre, 2006), p. 118.

¹⁵ H. Bachram, ‘Climate Fraud and Carbon Colonialism: The New Trade in Greenhouse Gases’, *Capitalism, Nature, Socialism*, 15 (2004), 5–20.

to the need to estimate ‘additionality’. The international market in carbon offsets is predicated on the assumption that monies made available through the CDM provide incentives for projects such as renewable energy plants that would not otherwise be built. However research reveals that two thirds of CDM projects were either completed or planned before the CDM was established, which indicates that payments from the CDM are not incentivizing these projects and that therefore no greenhouse gas emissions have been avoided as a consequence of the disbursement of CDM funds.¹⁶

The European Union Emissions Trading Scheme, like the CDM, has a negative record in motivating real emissions reductions but the reasons for its failure are only in part because of the difficulty of ensuring additionality. Under the EUTS, nations are allotted rights to pollute, and the requisite number of permits, on the basis of their emissions in 1990, but trade in such permits has not motivated real reductions in carbon emissions. This is partly because permits were given away for free, or very cheaply, under a practice known as ‘grandfathering’, to companies whose power generation had emissions large enough to require the purchase of permits. It is also because caps on emissions were set unduly liberally in relation to 1990 emissions.¹⁷

The initial theoretical advancement of CET by economists was based on the broader claim, first advanced by Coase and Dales, that markets are typically more efficient at resolving social and environmental costs or ‘market externalities’ than government regulation and/or taxes.¹⁸ The first major trial of emissions trading took the form of an amendment to the Clean Air Act in 1990, which inaugurated a new Acid Rain programme in the United States. The programme created a market in permits to emit sulphur from coal and oil-burning power stations and motivated annual sulphur emissions reductions of four million tons per annum.¹⁹ Emissions trading is said to be more efficient than command and control source-specific approaches to pollution,

¹⁶ B. Haya, *Failed Mechanism: How the CDM is Subsidizing Hydro Developers and Harming the Kyoto Protocol* (London: Rivers International, 2007); M. W. Wara, Michael and D. G. Victor, ‘A Realistic Policy on International Carbon Offsets’, Working Paper (2008) Stanford University, <http://iis-db.stanford.edu/pubs/22157/WP74_final_final.pdf> [accessed 2 February 2010].

¹⁷ S. Clò, ‘Grandfathering, Auctioning and Carbon Leakage: Assessing the Inconsistencies of the New ETS Directive’, *Energy Policy*, 38 (January 2010), 42–51.

¹⁸ R. Coase, ‘The Problem of Social Cost’, *Journal of Law and Economics*, 3 (1960), 1–33; J. H. Dales, *Pollution, Property and Prices* (Toronto: Toronto University Press, 1968).

¹⁹ R. Schmalensee, P. L. Joskow, A. D. Ellerman, J. B. Montero and E. M. Bailey, ‘An Interim Evaluation of Sulfur Dioxide Emissions Trading’, *The Journal of Economic Perspectives*, 12: 3 (1998), 53–68.

because choices on how to cut emissions are left to market actors to achieve for themselves on the lowest cost basis.²⁰ However claims for the success of this approach in the United States do not compare its effects with regulatory approaches to the same problem in other domains but rather with previous command and control abatement schemes within the United States, which achieved lower rates of compliance and higher costs from litigation. Nevertheless, the United States is a uniquely litigious jurisdiction in which corporations regularly behave along ‘rational choice’ lines, estimating the relative costs of compliance with pollution regulation against the payment of fines for non-compliance should government agencies find out and seek to punish them. For it to be proven that market solutions are always cheaper than other approaches, it would have to hold true not just in the USA but in countries such as Germany and Sweden, where corporate compliance with environmental legislation is much greater.

The economic preference for emissions trading over other approaches to carbon regulation and reduction indicates a number of problematic philosophical premises that are not discussed in the economic literature on emissions trading. The first is that any value in the earth system is only fully estimable and realizable when it becomes part of the human economy of production and is given a money value. Thus, if there is a value to the avoided harms that a proportionate reduction in greenhouse gas emissions represents, this value is said to have more productive power when it is translated into monetary terms and becomes tradable against other values. This premise goes back to the political theology of John Locke for whom values in the earth are not intrinsic but arise from human activities in making the earth fertile and productive.²¹ Locke enunciates the first theological justification for the dominance of money values in modern political economy, when he proposes that money is the means by which work is preserved from the decay that afflicts the fallen natural order, since it is ‘some lasting thing that men might keep without spoiling’.²²

The Lockean theology of money is of especial significance in the context of an increasingly monetized global order. It was Aristotle who first enunciated

²⁰ A. D. Ellerman, P. L. Joskow, R. Schmalensee, J. B. Montero and E. M. Bailey, *Markets for Clean Air: The U.S. Acid Rain Program* (Cambridge: Cambridge University Press, 2000), p. 253.

²¹ See the fuller exposition of Locke’s theology of money in M. S. Northcott, *A Moral Climate: The Ethics of Global Warming* (London: Darton, Longman and Todd, 2007).

²² J. Locke, *Second Treatise of Civil Government* (Indianapolis: Hackett, 1980 [1690]), section 47 p. 28.

the view that money is sterile and that therefore money should not be given ‘life’ by being lent at interest.²³ This position is central to Patristic and scholastic prohibitions against usury and endures until the Reformation. Thus for Martin Luther, when money has power it endangers the fecundity and fertility of human life, and even of the earth. He argues—and here his argument is troublingly anti-semitic—that the Jews in the Hebrew Bible experienced the loss of the fertility of the land of Palestine, about which the prophets complain, because they had begun to lend money at interest, and taken up other kinds of prohibited behaviours, including idolatry. In so doing they had rendered their culture ‘inorganic’ and hence, Luther argues, the soil of ancient Israel was depleted and could no longer sustain life.²⁴

The biblical description of idolatry is indicative of the root problem with neo-liberal models of political economy. Idols are things made with human hands. When things are given undue power over people this is no idle matter; it is not only that power given to idols is power not given to God but that power given to idols becomes malevolent and harms those who ascribe such power to idols. Money which is given power through usury becomes an idol and misshapes human society and the earth. Furthermore, idolatry in the Hebrew Bible is linked with such proscribed practices as child sacrifice, debt slavery and abuse of the earth.²⁵ By analogy the cultural power conferred on mathematically-described markets over human affairs, including environmental pollution, becomes instrumental to the sovereignty of markets which malignantly misshape or ‘pollute’ (to use the language of the Hebrew prophets) both society and nature. To put this in onto-theological terms markets are signifiers that acquire an independent, idolatrous existence from what they signify. Over time the signifiers acquire mystifying power so that they become conventions.²⁶ Markets in money, debt, carbon and consumer goods all fuel the growth in greenhouse gas emissions that are threatening climate stability. These markets signify material sufficiency and sustenance, but they acquire

²³ B. N. Nelson, *The Idea of Usury: From Tribal Brotherhood to Universal Otherhood* (Chicago: University of Chicago Press, 1969), pp. 73–82.

²⁴ M. Luther, *On the Jews and Their Lies* in *Luther's Works*, vol. 47, ed. Franklin Sherman (Augsburg: Fortress Press, 1971), p. 211. See also B. Stephenson and S. Power Bratton, ‘Martin Luther’s Understanding of Sin’s Impact on Nature and the Unlending of the Jew’, *Ecotology*, 9 (2000), 84–102.

²⁵ S. C. Barton, ed., *Idolatry: False Worship in the Bible, Early Judaism, and Christianity* (London: T&T Clark, 2007).

²⁶ J. Milbank, *The Word Made Strange: Theology, Language, Culture* (Oxford: Blackwell, 1997), p. 58.

such cultural power that money and consumption become independent activities that bear no relation to the physical needs of people or the physical state of ecosystems. Markets in carbon are idols that legitimate the continuation of a consumptive industrial economy and the continuing sacrifice of the common goods of a stable climate and a liveable earth for future generations. In this perspective naming and resisting the spiritual disease of idolatry becomes the crucial public work of the church, and of theologians, in relation to climate change.²⁷

The second philosophical premise involved in the advocacy of Carbon Emissions Trading as the principal instrument for mitigating climate change is a preference for a utilitarian ethic in which good and bad actions are set in a calculus of consequences that are collectively aggregated. The focus in such calculi is entirely on theoretical end states, since those who perform such sums as a means of judging between different courses of action cannot know in advance the actual end state. Alternatives to utilitarian and consequentialist approaches to the good include agent-centred or virtue theory, and act-centred, command-ethics approaches (also known as deontological approaches). In the former an action and its consequences may only be judged good or bad by reference to the character of the agent who performs it. In the latter an action may be judged good or bad on the basis of the action itself. The recognition of the rightness or wrongness of kinds of agency and kinds of acts in relation to the environment, as preceding human aggregation of environmental goods into useable products and services, reflects a different moral frame to the utilitarian calculus. In perhaps the most famous enunciation of this position, Aldo Leopold argues that ‘a thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise’.²⁸

This approach recalls the classical and medieval natural law tradition in which the extent of human interference in the natural order was understood to be limited by the creaturely dependence of human beings on the natural order.²⁹ That there is relative stability in the natural order is seen by Aristotle and Aquinas as evidential of certain natural laws that are set into the structure of being by a divine and provident creator. This gives to natural order

²⁷ A. McIntosh, ‘What Price the Earth?’, *World Mission*, 33 (February 2010) <<http://www.alastairmcintosh.com/articles/2010-CofS-WM-Climate.pdf>> [accessed 21 February 2010].

²⁸ A. Leopold, *A Sand County Almanac and Sketches Here and There* (Oxford: Oxford University Press, 1968).

²⁹ M. Northcott, *The Environment and Christian Ethics* (Cambridge: Cambridge University Press, 1996).

both a physical and a moral force in human affairs, and in the understanding of the nature of the human good, and constrains human interference in natural systems.³⁰ The utilitarian perspective is part of a distinctively modern turn in the conception of the moral frame, which is understood as constructed by humans in contradistinction to the natural order. This turns moral reasoning inwards upon the specifically human construction of values that Charles Taylor characterizes as the ‘turn to the self’.³¹ For many environmental philosophers it is this anthropocentric turn in modern ethics that is the root of the larger ecological crisis. For environmental philosophers Arne Naess and Holmes Rolston III, the recovery of respect for nature requires ways of estimating interest and value that do not treat of other creatures as merely finding value in human cognition but as having intrinsic interests and values that frame human agency and actions.³² In this approach human agency in the world is shaped by biology as well as culture.

The third and related premise on which neo-liberalism requires critique and resistance concerns the neo-liberal description of human agency. In rational choice theory individual consumers and producers act rationally when they behave autonomously and seek to maximize their own preferences or interests. This account of human action is not just a description. As an idolatrous signifier it acquires cultural power through its adoption in what Bruno Latour and Michel Callon call actor-networks.³³ The extension of markets into new areas of social life, including environmental protection, trains people and organizations in the pursuit of private property rights and private goods, instead of cooperative practices and the shared pursuit of common goods. As Stanley Hauerwas argues, recognition of the common good by individual moral agents requires training in cooperative practices, such as those involved in playing orchestral music or running a youth club. The key in such practices is a politics in which individuals recognize ‘how their own

³⁰ C. Wilson, ‘From Limits to Laws: The Construction of the Nomological Image of Nature in Early Modern Philosophy’, in L. Daston and M. Stolleis, eds, *Natural Law and Laws of Nature in Early Modern Europe* (Farnham: Ashgate, 2008), pp. 13–28.

³¹ C. Taylor, *The Sources of the Self* (Cambridge: Cambridge University Press, 2009).

³² A. Naess, ‘The Shallow and the Deep, Long-Range Ecology Movements: A Summary’, *Inquiry*, 16 (1973), 95–100; H. Rolston III, *Environmental Ethics: Duties to and Values in the Natural World* (Philadelphia: Temple University Press, 1988).

³³ M. Callon and B. Latour, ‘Unscrewing the Big Leviathan: How Actors Macro-Structure Reality and How Sociologists Help Them to Do So’, in K. Knorr-Cetina and A. V. Cicourel, eds, *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies* (London: Routledge and Kegan Paul, 1981), pp. 277–303.

particular goods contribute to the common good', for actors in such practices experience a sense of connection 'between their own ends and purposes and the flourishing of their political society'.³⁴ Such practices of necessity are local in character and will need some measure of protection from impersonal and global market forces, if they are to be sustained. This is because, as Alasdair MacIntyre argues, cooperative action for the common good requires that it is conducted on 'a scale in which questions put to those who hold political office make possible a deliberative debate from which no one from whom something might be learned is excluded'.³⁵

Carbon markets operate on a global scale and involve the creation of several levels of concealment between market actors, such that the 'black box' of the carbon market trade reveals no real information about efforts to conserve energy or reduce reliance on fossil fuels.³⁶ Added to the concealing black box in which burned and saved carbon are made equivalent, is the suppression of local knowledge of, and hence power over, energy, forest and land resources, where these markets are operative.³⁷ Tribal peoples who manage their forest habitats through common property practices lose knowledge and power over their forests when they are drawn into carbon emissions trading schemes, such as Reduced Emissions from Deforestation and forest degradation in Developing countries or 'REDD', in which corporately owned plantations are considered tradeable and attract carbon credits while old growth forests lived in sustainably by indigenous peoples do not.³⁸

Against the utilitarian and rational choice preference for market aggregates and algorithms, such as the black box of the carbon market, Elinor Ostrom in her extensive work on the governance of the commons describes an impressive array of practices and institutions that traditional communities have evolved for the sharing of common resources such as forests, fishing

³⁴ S. Hauerwas, 'A Worldly Church: Politics, Theology and the Common Good', in P. M. Candler and C. Cunningham, eds, *The Grandeur of Reason: Religion, Tradition and Universalism* (London: SCM Press, 2010), pp. 9–28.

³⁵ A. MacIntyre, 'Politics, Philosophy and the Common Good', in Kelvin Knight, ed., *The MacIntyre Reader* (Notre Dame: Notre Dame University Press, 1998), pp. 234–52.

³⁶ D. MacKenzie, 'Making Things the Same: Gases, Emission Rights and the Politics of Carbon Markets', *Accounting, Organisations and Society*, 34 (April 2009), 440–55.

³⁷ L. Lohmann, 'Carbon Trading, Climate Justice and the Production of Ignorance: Ten Examples', *Development*, 51 (September 2008), 359–65.

³⁸ L. Lebel, A. Contreras, S. Pasong and P. Garden, 'Nobody Knows Best: Alternative Perspectives on Forest Management in Southeast Asia', *International Environmental Agreements: Politics, Law and Economics*, 4 (June 2004), 111–27.

grounds, grazing lands and water catchments.³⁹ Ostrom's Nobel prize-winning work on the commons reveals that individual moral agency is enhanced, not diminished, when people negotiate and work together in face-to-face communities to manage use rights for the common good. That an agential approach to valuing ecological goods is superior to the black box approach is also indicated by a cross-national study of compliance with international environmental treaties. It reveals that in those domains which have the most active civil societies, the largest number of NGOs and the most politically engaged citizenry, governments both ratify more international environmental treaties and achieve a higher level of compliance.⁴⁰ Hence, we may infer that compliance with and respect for environmental goods as internationally defined is not just procedural, as economists propose, but agential, and the economic argument that CET is more effective because it has a lower procedural cost is invalid. CET is a set of mechanistic procedures that promise to deliver pollution reduction without requiring that corporations, cities, local communities and householders actively cooperate together to care for the climate by reducing their use of energy and commissioning renewable sources of power.

The preference for mathematical models and market mechanisms over participatory forms of personal deliberation and engagement in actions towards a common good, such as a stable climate, may be traced to the influence of Newtonian physics on neoclassical economists, who modelled their mechanistic accounts of human exchange relations, and the valuing procedures of the 'laws' of supply and demand, on nineteenth century physics.⁴¹ Neo-liberal economists, like their nineteenth century forbears, adopt descriptive metaphors, and construct models of human and monetary behaviours that rely more on mathematics than on historical studies of empirical human behaviour. Inveigled by the claims for such models to provide reliable measurements of, and hence tools for managing, human affairs governments extend the realm of market technique into more areas of public service provision, including electricity supply, while shrinking participative mediation by the governed or by non-profit non-governmental agencies. The result is that government and local agencies in service provision—from transportation and

³⁹ E. Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge: Cambridge University Press, 1990).

⁴⁰ Roberts and Parks, *A Climate of Injustice*, pp. 188–9.

⁴¹ P. Merowski, *More Heat than Light: Economics as Social Physics, Physics as Nature's Economics* (Cambridge: Cambridge University Press, 1989).

telecommunications to education and health care—are increasingly marketized and privatized. At the same time government regulation of the banking sector, money markets and private corporations is reduced and economists and bankers have invented an array of extremely complex forms of trade in money, derivatives, futures, debt, spread-bets on stocks and exchange rates, and carbon emissions credits. These complex mathematical techniques conceal the levels of debt and leverage that companies and consumers rely on to pay for goods and services in an increasingly monetized environment. Hence they reduce the transparency of the physical and monetary assets and contractual relationships of which these markets are mathematical abstractions. The effect is to produce what Walter Wriston calls the ‘twilight of sovereignty’, in which the power of human communities and nation-states to order their affairs according to shared deliberation on moral ends, and the common good, is given up to autonomous market instruments based on the movement of bits of mathematical information between computers.⁴²

The novel markets economists invent in ‘securitized debt’ or carbon emissions credits generate huge amounts of human activity, and monetary wealth, and the descriptors grow to have more cultural power than the actual reality of the supply of housing relative to demand and the ability to pay for it, or the supply of emissions credits relative to greenhouse gas reduction targets. This gap between description and reality is evident in the aetiology of the banking failures and the financial collapse of 2008. However, the cultural power of economic actor-networks remains, even though the algorithms failed to predict the financial collapse and the banks and mortgage lending were shored up with government funds. In a similar way the failure of markets in carbon emissions to motivate real reductions in greenhouse gas emissions was not acknowledged at the Copenhagen climate conference, and the Copenhagen Accord still describes market instruments as the primary device for international cooperation on climate change mitigation.

Market instruments are not autonomous, but humanly made. They exalt exchange values, and mathematical algorithms, over intrinsic worth and personal and political participation and deliberation on such exchanges. These mathematical models are not just descriptions of social reality; through the actor-networks in which their performative power is symbolically affirmed

⁴² W. B. Wriston, *The Twilight of Sovereignty: How the Information Revolution is Transforming Our World* (New York: Charles Scribner and Sons, 1992).

they remake society, government, citizen behaviours and beliefs.⁴³ The net effect is to transfer economic and political power from citizens, local communities and national parliaments to economic corporations, banks and money managers.

Recovering Moral Agency in a Global Neighbourhood

Contemporary globalization links people and places thousands of miles apart in myriad daily exchanges of goods, including food, drink, clothing and energy resources. The governance of these spatially distant exchange relationships by market technique and money managers conceals the character of these global exchanges. This concealment eviscerates the capacity of individuals and communities in one place to deliberate morally and politically on the social and ecological impacts in other places of the material exchanges on which they rely for sustenance and comfort. Climate change is already affecting people on other continents, and in particular in Africa and Asia, where droughts and floods are reducing the capacity of vulnerable communities to grow food and to find secure shelter. Distant global trades in energy intensive goods and in fossil fuels, as well as in carbon credits, are part of a global industrial nexus that is polluting the atmosphere and forcing the climate into a warmer phase. This nexus makes of distant peoples neighbours not by proximity but by the journeys goods and people and pollutants make.

If algorithmic governance prevents moral deliberation on these journeys how might Christians and others recover moral agency in relation to the material exchanges with global neighbours that sustain and so promote the common good of a stable climate? A journey plays a pivotal role in the Parable of the Good Samaritan in the telling of which Christ is responding to the question from the scribe: ‘And who is my neighbour?’ (RSV, Luke 10:29). The question is a reasonable one and concerns how to judge which moral responsibilities the command to love the neighbour imposes on the individual at any particular moment. Christ’s answer suggests that the Samaritan becomes neighbour to the man who is robbed, because he meets him on the road in the course of a journey from Jerusalem to Jericho. The Samaritan and the robbed man do not live in the same street and they are not friends or relatives, but they become proximate; they are put into a relationship of obliga-

⁴³ Callon and Latour, ‘Unscrewing the Big Leviathan’, in Knorr-Cetina and Cicourel, eds, *Advances in Social Theory and Methodology*.

tion one to the other, because they are connected by a journey. The parable indicates that human beings cannot equally love every human being. Only by favouring some above others with moral concern is it possible to rank moral responsibilities and act accordingly, and the conventional principles that inform this ranking are place and proximity. Yet the mobile material flows, the journeys of goods and services, that characterize a modern cosmopolitan life create what Karl Barth called ‘near and distant neighbours’.⁴⁴ Moreover, they require new forms of moral discernment that honour the life of the neighbour who is not proximate to us, whom we may never meet even on a road, but who may suffer the ecological or social impacts of these journeys.

If neighbour relations are created by global trade then the Christians in Holland and England, who inaugurated a new form of moral deliberation over international trade, known as ‘fair-trade’, found a new way to love their global neighbours.⁴⁵ Fair-trade involves a range of practices designed to ensure that contracts to supply distantly traded tropical goods, such as bananas, tea, coffee and chocolate, between developed country purchasers and developing country producers are morally just and not coercive. To assure that a particular contract to supply a commodity is just in the terms required by ‘fair-trade’ involves careful scrutiny of the social and ecological conditions of each specific product line that carries the fair-trade logo, from field to market. This scrutiny involves face-to-face contact between the purchasing company and the producer, in the course of which the purchaser and the producer put in place working and environmental conditions and profit sharing arrangements that ensure that the product is sustainably and justly produced, and that the fruits of the contract are equitably shared in the community where the product is made.⁴⁶

Fair-trade has raised living standards significantly in the developing country communities that have entered into fair-trade contracts, by ensuring that distant trades are fair and just and do not involve coercive working conditions or ecological destruction. Yet market economists, and state officials, resist the spread of such supply-chain scrutiny into the mainstream of market

⁴⁴ K. Barth, ‘Near and Distant Neighbours’, in K. Barth, *Church Dogmatics III.4: The Doctrine of Creation*, trans. A. T. Mackay, T. H. L. Parker, H. Knight, H. A. Kennedy and J. Marks (Edinburgh: T. & T. Clark, 1961), pp. 285–323.

⁴⁵ On the Christian origins of fair-trade see M. S. Northcott, ‘Fair-trade and Human Wellbeing’ in J. Atherton and E. Graham, eds, *Political Economy, Religion and Wellbeing: The Practices of Happiness* (London: Routledge, forthcoming).

⁴⁶ G. Moore, ‘The Fair-trade Movement: Parameters, Issues and Future Research’, *Journal of Business Ethics*, 53 (August, 2004), 73–86.

exchanges, because the degree of discernment and face-to-face meeting involved in such exchanges is more costly, and less efficient, than anonymous price allocation mechanisms. Instead they promote an increasingly borderless and deregulated international trading regime, governed by the World Trade Organization, which disallows member states from discriminating against goods whose production is characterized by coercive exploitation of workers or by ecological destruction.⁴⁷ Similarly energy and trucking companies initiated a law suit to resist efforts by the State of California to ban the sale of oil derived from tar sands in Alberta Canada, or from corn-derived ethanol, because of their very high environmental and global warming impacts.⁴⁸

Fair-trade is a work of love in which charity is added to economic relations, transforming potentially coercive or ecologically destructive relationships into relationships where humanity and the earth are loved as neighbourhood. The publicity of this work of love, which has extended far beyond its ecclesial roots, can inform cooperative international efforts to mitigate climate change and aid those worst affected by the natural disasters it brings in its train. The internationally connected cooperatives of producers and consumers who began the fair-trade movement are an important exemplar of the kind of ethical and participative network that is needed for the complex international project of reducing greenhouse gas emissions, and so protecting the climate. Climate change mitigation requires the same detailed attention by active citizens, as producers and consumers, to the ethics of fossil fuel extraction and use, and to the other sources of greenhouse gas emissions—such as deforestation, agricultural animals, cement factories—that must be addressed by any comprehensive effort to mitigate climate change. Further, climate change mitigation requires the same effort to practice justice in the relations between developed and developing world, since the ‘moral storm’ of climate change is that while the developed world’s historic and ongoing emissions remain the principal drivers of climate forcing, it is the developing world that is, and will, suffer the worst effects of climate change over the next fifty years and beyond.

Despite the failure of the UNFCCC to date to achieve it, an effective environmental treaty mandating the reduced extraction and use of fossil fuels

⁴⁷) For a fuller account see M. S. Northcott, ‘The World Trade Organisation, Fair-trade and the Body Politics of Saint Paul’, in John Atherton, ed., *Through the Eye of a Needle: Theology, Ethics and Economy* (London: Epworth Press, 2007), pp. 169–88.

⁴⁸) M. Roosevelt, ‘Industries Sue to Void California’s Low-Carbon Fuel Regulations’, *Los Angeles Times* (3 February 2010).

remains the desirable outcome of the international negotiating process it has set in train. Yet it is doubtful that local communities, corporations and agencies, and the nations they constitute, will accede to the behaviours and practices of climate care that an effective climate treaty will require, without the shared recognition by significant numbers of individuals and communities within each nation that, though distant in time and space, the victims of greenhouse gas pollution have a moral claim on them and they have a duty to love them as neighbours.

Some will question the realism of the suggestion that love and not law can be the motive behind an international response to climate change. Archbishop Rowan Williams, in his sermon during the Copenhagen conference to a congregation that included the Queen of Denmark, ambassadors and international delegates to the conference, argued that love could be the motive when he preached on 1 John 4:18 ‘perfect love casts out fear’. He stated that: ‘The deepest religious basis for our commitment to the environment in which God has placed us is this recognition that we are called to be, and are enabled to be, the place where God’s love for the world comes through’.⁴⁹

The basis of Christian confidence in loving action towards creation is that it mirrors the love of God revealed in the original goodness of creation. Whereas the negative emotion of fear—such as that provoked by apocalyptic accounts of ecological disaster—is unlikely to motivate the lifestyle changes that the ecological crisis requires. As Williams argues, ‘the truth is that what is most likely to get us to take the right decisions for our global future is love’, and not only love of neighbour but love of God’s creation, of the ‘world we inhabit’.⁵⁰

This account of love as the spiritual root of moral transformation echoes the Orthodox ethics of Christos Yannaras for whom good work and acts of virtue find their meaning and purpose when they ‘manifest God’ and reveal the divine image in the actor.⁵¹ As the fourth century desert father St Makarios put it: ‘It is in the renewal of the intellect, in the peace of our reasonings, and in love and heavenly eros for the Lord that the *new creation* of Christians is distinguished from all other men of the world. This was why the Lord’s

⁴⁹ Rowan Williams, ‘Act for the sake of love’: Archbishop of Canterbury Preaches in Copenhagen Cathedral’, <<http://www.archbishopofcanterbury.org/2673>> [accessed 16 February 2010].

⁵⁰ Ibid.

⁵¹ C. Yannaras, *The Freedom of Morality* (Crestwood: St Vladimir Seminary Press, 1984), pp. 76–9.

coming took place'.⁵² In Orthodox theology the human heart is a microcosm of the whole cosmos, and of the transforming presence of the church within it, and works of charity and mercy are the form of the restoration of creation which begins in the lives of the saints. As Isaac the Syrian puts it: 'What is a merciful heart? A heart which burns for all creation, for men and birds and animals and demons, for every creature'.⁵³

The moral force of acts of religious charity is understood by political scientists as a form of 'social capital' that represents a 'resource' for generating social trust and the 'production' of the common good in society. The collective form of this social capital according to Corwin Smidt is the 'network of social friendships and reciprocity'⁵⁴ through which churches, and parachurch organizations, build forms of diakonic outreach in society. Yet this instrumentalist description misses the spiritual character of ecclesial community, and the spiritual origin of works of love in the love of God and in the love of God's creatures. Many churches and Christian environmental organizations around the world are demonstrating their love for God and creation in shared and networked actions to mitigate their own climate impacts by commissioning renewable electricity generation, and sharing alms with those, particularly in the south, who are already suffering from climate change. Lutheran churches in Germany and Switzerland have put solar panels on south-facing church roofs and used the money saved from their energy bill to sponsor renewable power in churches in Africa. The Christian environmental organization Interfaith Power and Light in the United States has contracted to supply renewable supply to churches, and to the power grid, in more than thirty states across the nation, while at the same time educating church members in energy conservation, home insulation and in lower carbon living, including transportation and diet.⁵⁵ In the UK the Ecocongregation network is encouraging local churches to connect creation care, and climate care more especially with Christian worship, as well as with the ecological footprint of the local church and the homes and lives of their members.⁵⁶ In addition, the Church of England has commenced a 'Shrinking the Footprint' project in

⁵² *The Fifty Spiritual Homilies of Makarios* 5.5, as cited by Yannaras, *The Freedom of Morality*, p. 78.

⁵³ Isaac the Syrian, *Mystic Treatises*, 81, as cited by Yannaras, *Freedom of Morality*, p. 80.

⁵⁴ C. Smidt, 'Introduction', in Corwin Smidt, ed., *Religion as Social Capital: Producing the Common Good* (Waco: Baylor University Press, 2003), pp. 1–18 at p. 9.

⁵⁵ 'Interfaith Power and Light: A Religious Response to Global Warming', <<http://interfaith-powerandlight.org/about/>> [accessed 16 February 2010].

⁵⁶ 'Ecocongregation', <<http://www.ecocongregation.org/>> [accessed 1 March 2010].

which every church and diocese seeks not only to reduce its energy consumption and to educate churchgoers in climate care, but also to use funds so saved to support renewable energy projects and climate adaptation projects in the developing world.⁵⁷ These works of love do have cultural power but more than ‘social capital’ this power emanates from the spiritual challenge they present as signifiers of true worship that resists the idolatry of market techniques, as manifest in endless consumption and in the neo-liberal subversion of international cooperation for the common good of a safe climate.

Kierkegaard, Copenhagen’s most famous philosopher, argues in his *Works of Love* that Christianity is the world’s greatest philosophy because it makes of love the supreme duty, the ‘royal law’ of the philosopher king Jesus Christ. No other philosophy—pagan or rationalist—marries love and law, and so turns desire into duty, in this way. By so doing Christianity secures love as humanity’s end, for ‘only when it is a duty to love, only then is love eternally secure’.⁵⁸ To secure a stable climate is a common good that requires acts of love and sacrifice beyond those envisaged by corporate and political leaders in Copenhagen in 2009. The church remains a place in which such acts of love are both ascetic disciplines and the Christ-inspired embodiment of true human flourishing. Hence solar panels on church roofs, bicycles outside Sunday services, Christians who refuse to fly and drive and wind farms commissioned by Christian climate activists are not just examples of ecclesiastical footprint shrinking but the publicity of love in a time of climate change.

⁵⁷ ‘Shrinking the Footprint’, *The Church of England*, <<http://www.shrinkingthefootprint.cofe.anglican.org/>> [accessed 16 February 2010].

⁵⁸ S. Kierkegaard, *Works of Love*, trans. H & E. Hong (New York: Harper, 1962 [1847]), pp. 11–17.