



Dangerous Holes in Global Environmental Governance: The Roles of Neoliberal Discourse, Science, and California Agriculture in the Montreal Protocol

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Abstract: This paper explores how a relatively successful global environmental treaty, the Montreal Protocol on Substances that Deplete the Ozone Layer, is currently undermined by US protectionism. At the “global scale” of environmental governance, powerful nation-states like the US prolong their domination of certain economic sectors with the assistance of neoliberal discourse. Using empirical data gathered while attending Montreal Protocol meetings from 2003 to 2006, I show how US policy undermines the Montreal Protocol’s mandate to phase out methyl bromide (MeBr). At the global scale of environmental governance the US uses a discourse of technical and economic infeasibility because, in the current neoliberal milieu, it cannot make a simply protectionist argument. The discourse, in other words, is protectionism by another name. While much of the literature in critical geography on neoliberalism has focused on de-regulation versus re-regulation, this paper illustrates how science, protectionism, and neoliberalism can become articulated uneasily and in sometimes unexpected ways.

Keywords: conditions of production, discourse, global environmental governance, methyl bromide, Montreal Protocol, neoliberalism, protectionism, science

It should be clear from [the Technology and Economic Assessment Panel’s] colossal work how far we still are from fulfilling our common goal of repairing the Earth’s stratospheric ozone layer (Executive Ozone Secretariat Marco Gonzales, 23rd Open-ended Working Group of the Montreal Protocol, 2003).

Our industry simply cannot make a change of this magnitude in this timeframe without serious consequences to an industry with 600 growers (Roger Wasson, California Strawberry Commission, 1st Extraordinary Meeting of the Parties to the Montreal Protocol, 2004).

Introduction

This paper explores how a heretofore successful international environmental treaty, the Montreal Protocol on Substances that Deplete the

Ozone Layer (hereafter, the Montreal Protocol), is currently undermined by US protectionism, driven largely by California's agro-industrial complex. Despite the increasing intensity of global governance and the clear hegemony of neoliberalism at the level of the nation-state, if protectionism can be said to have declined, its decline is frequently exaggerated. Rather, as many critical geographers have pointed out, neoliberalism encompasses both the deregulatory restructuring of liberal/social democratic programs and re-regulatory policies that re-enforce the state's control over production, the "natural" environment, and subjects whilst lessening state responsibility for citizens and the "built" environment (Bondi and Laurie 2005; Harvey 2005; Heynen and Robbins 2005; Jessop 2002; McCarthy and Prudham 2004; Peck and Tickell 2002).

Using interviews with nation-state delegates, ozone scientists, NGO and industry representatives, and direct observation at protocol meetings, the case study will show how neoliberal policies and protectionism of national industries can become articulated uneasily and unexpectedly at the global scale. Since 2003, US government representatives at protocol meetings have argued that the US should have exemptions from the established rules regarding the phase out of methyl bromide (MeBr), an ozone-depleting substance used heavily in strawberry production. They argue that alternatives to MeBr are not viable for US growers (especially California strawberry growers), despite the fact that they appear viable worldwide. In effect, what has emerged is old wine in new bottles: nation-state protectionism under the guise of neoliberalism in global environmental governance.

The following analysis of the Montreal Protocol provides evidence that neoliberal policies at the global scale are specific outcomes of particular struggles over the conditions of production taking place at other scales. However, the high level of nation-state protectionism witnessed at the Montreal Protocol over the phase-out of MeBr is somewhat different from neoliberal outcomes in other global governance settings. Case studies, such as McCarthy's (2004) investigation of the North American Free Trade Agreement (NAFTA), and Goldman's critique of the "green-neoliberal" World Bank, which has "fragmented, stratified, and unevenly transnationalized Southern states, state actors, and state power" (2005:183) present an opening of markets for North-based corporations. With the Montreal Protocol, we find similar North-based industrial powers collaborating with the US state in order to *limit* competition from the South, not promote it. The Montreal Protocol, therefore, displays the protectionist dimensions of neoliberalism via protection of the conditions of agro-industrial production.

Using empirical data gathered while attending Montreal Protocol meetings from 2003 to 2006, the case study illustrates how, even at the "global" scale, neoliberalism is always already embedded in struggles

over conditions of production that often allow powerful nation-states to enact protectionist measures when necessary. In the context of the global environmental governance of ozone depletion, it is clear that neoliberalism has instigated protectionism of geographically situated conditions of production. As a dominant actor, the US state is often capable of prolonging the protection of its conditions of production vis-à-vis other geographically situated conditions of production, in this case competing strawberry growing regions. As a global form of environmental governance, the Montreal Protocol provides evidence that even at the global scale there are spatial dissimilarities among policies and practices, because global policies are outcomes of nation-state geopolitics with specific claims and needs vis-à-vis capitalist competition and opposition to that competition from societal groups. Contrary to Perreault and Martin's (2005) claim that differences become more obvious as one views more "local" scales, the Montreal Protocol seems to show how, even at the global scale, there are extreme differences in policy outcomes.

I argue that the US uses a discourse of infeasibility and the conditions of California agrarian production in global environmental governance in order to protect its agro-industrial complex from rising global competitors, even when such protection exacerbates global environmental degradation. An "exemplary" instance of global environmental governance, the Montreal Protocol, has become embedded with market logic and geared towards perpetuating market growth in a way that trumps both free market competition and global environmental concerns. In other words, the case study provides evidence that actually existing neoliberalism can be highly protectionist, which goes beyond fostering the legal protection of corporations from the environmental harms they produce; it also maintains nation-state power via protectionism of industry and the denunciation of global scientific knowledge.

Powerful nation-states like the US are able to capitalize on the claims made by the agro-industrial sector that certain environmentally sound alternatives to ozone-depleting substances are less feasible in particular geographic (and nation-state-specific) regions despite their proven efficacy in comparable regions around the globe. The US has thwarted efforts to eradicate MeBr by claiming that conditions of production specific to California make the phase-out of MeBr infeasible for its strawberry growers. The paper illustrates how this discourse is not robustly supported scientifically, is contested by some US growers as well as growers, scientists, and governments worldwide, and veils a policy of protectionism of US-based conditions of production within a discourse of "free trade". Consequently, as noted by Marco Gonzales in the introductory quote, the progress made by the Montreal Protocol to eliminate ozone-depleting substances still has a long way to go, posing a significant threat to protection of the ozone layer.

Thus far, civil society groups have had little success in reversing the Montreal Protocol's leniency toward US claims. Civil society's lack of success might be attributable to the fact that its interventions are often incompatible with the neoliberal discourse of global environmental governance. The paper concludes that civil society efforts to contest the US's prolonged use of MeBr would be more successful if they utilized a discourse that unveils US protectionism.

Theorizing Neoliberalism/Protectionism in Global Environmental Governance

Castree (2005, 2006) has provocatively asked whether "actually existing neoliberalism" indeed "actually exists", and similar, if less explicit, stances can be found in the case studies of critical geographers concerned with the particulars of neoliberalism's general operation (cf Larner 2003:509–510; Peck 2004:394–395, 403). A major point being made by these scholars is that neoliberalism never exists in some ideal type, but always in specific articulations that make neoliberal policy and/or discourse impossible to realize. For this argument, I will use Castree's (2005:543) ideal typification, one which allows us to see how neoliberalism "in action" is far removed from the "monetarist" rhetoric of its architects (Friedman 1962; Friedman and Schwartz 1963; Hayek 2001). Castree develops six moments in neoliberalism: (1) privatization (ie property rights created from previously state owned, un-owned or communally owned phenomena); (2) marketization (ie opening market exchanges to phenomena previously shielded from such exchanges); (3) deregulation (ie the "rollback" of state involvement in numerous areas of social and environmental life); (4) re-regulation (ie the "rollout" of state policies to facilitate privatization and marketization of social and environmental conditions and remediation); (5) market proxies for public services along private sector lines; and (6) the facilitation of civil society groups to meet social and environmental needs that nation-states once provided.

Critical geographers have shown how neoliberal discourse takes root at the global scale. Here, neoliberal policies are interpreted as the effort taken by industrialized nation-states in the North to generate and enforce global markets and re-regulated national markets. Along these lines, many studies find that neoliberal globalization represents an effort to force market competition on the global South while continuing to protect key industries in the North (cf Goldman 1998, 2005; McCarthy 2004; McCarthy and Prudham 2004). Neoliberalism in this light is perhaps best understood as the continuation of neo-imperialism, where political economic domination by the industrialized North is furthered by the manufacture and disciplining of markets in the South, but via market mechanisms organized and managed by the former (Harvey 2003;

Perreault and Martin 2005; Williams 1969). Thus, neoliberal policies can be seen as the instantiation of the New Right's economic standards for global policies implemented as a response to fiscal crises of the state in the late 1970s and early 1980s (O'Connor 2002), deepened as the Cold War came to a close in the 1980s, and as globalization became widespread in the 1990s (Harvey 2005).¹

While much of the literature in critical geography on neoliberalism has focused on issues of de-regulation versus re-regulation, this paper extends these insights to questions of free trade versus protectionism. As a new, unevenly developing form of capitalism, neoliberalism creates contradictions, the outcomes of which are rooted in the "situatedness" of particular policies in particular conditions of production (Gareau 2005:129–132). Nation-states, corporations, landowners, etc protect their profit-making interests as they always have, and the degree to which they are able to do so is linked to their power vis-à-vis other sectors of capital, civil society, environmental conditions, and other geographically contingent conditions (Harvey 1982; O'Connor 1996, 2002). Such struggles are both historically and geographically situated (Jessop 2000, 2002; McCarthy and Prudham 2004; Peck and Tickell 2002).

Furthermore, critical geography has taught us that, as the market tends to degrade both social and ecological conditions (more aptly socionatural conditions à la Swyngedouw 1999 or conditions of production à la O'Connor 1998), historically the nation-state has acted as a primary mediator of the circuits of capital, its expanded reproduction and impacts on ecological, personal, and communal conditions (eg Mansfield 2004; O'Connor 1998:307; Peck 2001). In a special issue of this journal, Bondi and Laurie illustrated how, in the current neoliberal milieu, the process of freeing the state of its social and environmental responsibilities varies due to social, cultural, economic, and political ecological differences across spaces (Bondi and Laurie 2005:396; see also Brenner and Theodore 2002):

In this context, one of the ways in which critical social scientists have sought to avoid merely reaffirming the global hegemony of neoliberalism is by considering its variability ... A key task for critical geographers, therefore, has been to examine the production of a plurality of neoliberal spaces. In this vein, research has explored the differentiated nature of neoliberalism in a wide variety of contexts. Examples include studies of how the spaces vacated by "roll-back" neoliberalism are colonised in diverse ways that enable different forms of "roll-out" neoliberalism to proceed.

One relatively understudied "colonized space" in critical geography is that of global environmental governance. There are exceptions, of course, but they are few (eg Demeritt 2001; Goldman 2005; Liverman

2004; McCarthy 2004; Peet 2003; Swyngedouw 2005; Watts 2002). Studies of global environmental governance are important because the international mode of both economic *and* environmental regulation is supervised by a set of suprastate, transnational institutions (Held and McGrew 2002:66). Additionally, the predominant motif utilized to study global environmental governance draws heavily from the neoliberal ideological project of free-market economics and rational choice analysis. Such studies serve to influence the self-understanding of actors within global environmental governance who presently have very little against which to gauge game theory, public choice theory, or liberal institutional/regime analyses (Barrett 2003; Sandler 2004; Young 1997, 2003).² Critical geography is well positioned to provide such an engagement. These institutions are the new sites in which national and global actors facilitate trade and attempt to cooperate in order to alleviate large-scale environmental harms, and they deserve our attention.

Global environmental governance, however, is clearly facilitated by powerful nation-states that often promote economic expansion first and environmental protection only secondarily (cf Goldman 2005). Additionally, environmental governance tends to ignore socionatural relations, attempting to treat “the environment” or some aspect thereof as separate from its multiscalar and interdependent components. Here, access to water, for example, is treated as separate from public health, tropical forest conservation as separate from indigenous survival needs, ozone protection as separate from climate change and geopolitics (Bakker 2004; Conca 2006; Gareau 2007a, 2007b; Peluso 2004). The *neoliberalization* of global environmental governance has frequently exacerbated such effects, re-inscribing with market-based solutions the treatment of specific environmental conditions separate from the broader socionatural relations that created the problems being addressed (Liverman 2004).

Many scholars in or influencing critical geography have noted how economic concerns often supersede environmental concerns—even in international agreements with environmental clauses (eg Foster 2002:44; Heynen and Robbins 2005; Liverman 2004; McCarthy 2004; O’Connor 1996; Watts 2002). For critical geographers like James McCarthy (2004), the issue has much to do with the passage of international laws that protect North-based firms from being held accountable for the adverse environmental and (thus) social effects of producing commodities and extracting natural resources in the South. International agreements on trade rely on nation-states that regulate the terms of trade in a way that simultaneously leads to the regulation of the environment by these so-called “hollowed out” states. This means that nation-states have “rolled back” state-led environmental protection in favor of letting the market handle environmental issues, and “rolled out” a broad array of legal reforms and institutional arrangements in order to

facilitate neoliberal environmental governance (McCarthy and Prudham 2004; Peck and Tickell 2002). Consequently, many environmental movements have risen up to defend that which is much less defended by nation-states, what O'Connor (1998) defines as capitalist "conditions of production". Conditions of production perhaps are most easily thought of as the natural, human and social capitals³ necessary to produce goods and services.⁴ The state has historically mediated capital's relation to its conditions of production, as well as the public's relation to its conditions of life. Since the rise of the liberal/social democratic welfare state, successful social movement demands that capital's depletion and degradation of the conditions of production be remediated and can be seen in the state's ever-increasing budgets for wilderness preservation, resource conservation, pollution reduction, scientific research, technological development, medical innovations, educational reforms, cultural programs and infrastructural development (O'Connor 1998:307).

A Multiscalar Understanding of Global Environmental Governance

Although O'Connor did not disaggregate the conditions of capitalist production from the conditions of production necessary for specific sectors and/or firms, we can take that step here. Capital at the abstract level requires natural resources, labor power, and a social infrastructure in which to work, and "it" treats these conditions as commodities. More specifically, the agro-industrial sector, for example, requires these conditions to produce agricultural commodities, but it is bound strongly to the socionatural conditions of particular spaces. In fact, some agro-industrial complexes, such as those tied to California's strawberry production, are built around particular historico-geographically constituted production conditions that are difficult to change. California strawberry production relies on certain technological innovations (eg strawberry varieties dependent on certain chemicals to combat plant pathogens), the creation of certain ecological conditions (eg climatic, soil and hillside conditions that make water-soluble chemicals difficult to apply), and a consistent labor supply (ie seasonal Mexican and Mexican-American laborers). Without these specific production conditions, the system would likely fail due to foreign competition. Thus, California agro-industrial strawberry production demonstrates how conditions of production are socionaturally determined in a way that provides so-called "natural" conditions with an active role; soil pathogens shape the conditions of production as do labor supplies, hillsides as do technical innovations (Gareau 2005:137–140).

We are reminded here of how local, national and international scales are established in relation to one another. The "socio-spatial and

environmental arrangements” existing in and around California agro-industry extend from the local to the international scale, and the process by which powerful actors shape those arrangements changes as they move across scales (Swyngedouw and Heynen 2003:912–913). Here we can take Swyngedouw and Heynen’s analysis of urban political ecology to the study of global environmental governance, where the dynamic institutionalization of global environmental issues is “embedded within networked or territorial *scalar configurations that extend from the local milieu to global relations*” (Swyngedouw and Heynen 2003:912, my emphasis).

Background: The Montreal Protocol MeBr Phase-out

Stratospheric ozone is, in a word, a global sunscreen that allows life to exist on land (Andersen and Sarma 2002). In 1974, Molina and Rowland published an article predicting that chlorofluorocarbons (CFCs) would deplete the ozone layer. For a decade, industry and the scientific community debated over the legitimacy of the claim; the latter improving scientific models to measure ozone, the former working on profitable alternatives to CFCs. In 1985, under much public pressure and with coordination by the United Nations Environmental Programme (UNEP), several developed countries adopted the Vienna Convention for the Protection of the Ozone Layer. The Vienna Convention, albeit useful in empowering the UNEP as secretariat of ozone negotiations and in establishing intergovernmental cooperation in monitoring ozone depletion, was non-binding and ineffective in slowing CFC growth (Parson 2003). In 1987, the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) was ratified. Here, ratification led to legally binding agreements to phase out most CFCs from production and consumption. After 20 years of ratification, the Montreal Protocol now touts 191 signatories, a large increase from the original 60 participating countries.

Yet problems remain. There are still sizable amounts of CFCs used via “essential use exemptions,” such as in US metered-dose inhalers, a use that the EU and several US-based NGOs argue is not “essential” because feasible alternatives exist.⁵ NGOs such as the Environmental Investigation Agency (EIA) have revealed how CFC and hydrofluorocarbon (HCFC) reduction aims have been weakened by illegal trading (EIA 2007). Additionally, HCFCs, the current replacement for many CFC processes, are also ozone-depleting substances (ODSs), and will be produced under protocol agreement until the year 2040. And MeBr “critical uses” still remain sizable, totaling over 5000 metric tons in the US alone in 2007 (down from almost 10,000 in 2005), and close to 700 metric tones in the EU in 2007 (UNEP 2006; 2007).⁶

Indeed, the Montreal Protocol is experiencing a crisis. Since put into operation, though it has often been touted as the most successful of the global environmental governance regimes (eg Andersen and Sarma 2002; Barrett 2003; Benedick 1998; Parson 2003; UNEP 2002; Young, Levy and Osherenko 1996), the Montreal Protocol has almost completely stalled in its efforts to phase out remaining ODSs. The delay is largely due to political economic issues surrounding MeBr. MeBr is an ODS used primarily as a pre-plant fumigant in the production of strawberries and tomatoes, and for quarantine pre-shipment. A primary consumer of MeBr is the California strawberry industry. It is a significant ODS, with an ozone-depleting potential of 0.6 that of CFC-11 (WMO/UNEP 2002). Due to scientific uncertainty in its ozone-depleting potential and industry lobbying, a phase-out schedule for MeBr could not be agreed upon until the early 1990s.

In 1992, ozone levels over northern Europe and Canada reached their lowest levels in recorded history. Research summarized by the UNEP showed that the quantity and productivity of phytoplankton was diminished in the vicinity of the Antarctic ozone hole (UNEP 1991). Senator Al Gore warned of an ozone hole imminent over the New England region, and the Senate call “for phaseout of all ozone-depleting substances ‘as fast as possible’ passed by 96 votes to none” (Parson 2003:215). It was in this mood that MeBr gained prominence as an ODS on the global stage. At the Copenhagen meeting in 1992, member states to the Montreal Protocol mandated the systematic phase-out of MeBr, in 2005 for industrialized countries, in 2015 for less-developed countries (LDCs). As the largest producer and consumer of MeBr, the US would have the largest amount to phase out in 2005.⁷ Additionally, the Multilateral Fund (MLF) was established permanently in order to help LDCs with the transition to ozone-friendly alternatives, a fund designed to persuade China, India and other LDCs to ratify the treaty (Mitchell and Keilbach 2001). In 2005, the ozone hole over Antarctica reached almost 10,000 square miles, equivalent to the size of North America, and near the record set in 2003. At the same time, the date of ozone layer recovery was extended almost 20 years to 2070 (Environment News Service 2005, 2006).

But 2005 has come and gone, and MeBr is still used today in significant quantities in the US via “critical use exemptions” to the phase-out. As the last of the bromine-containing substances included in the provisions of the Montreal Protocol, it was believed that MeBr had the potential to contribute significantly to the reparation of the ozone layer. Out of all the possible amendments that could have been written into the protocol, the phase-out of MeBr was considered both the most cost-effective and ozone-saving option available. The use of MeBr by the heavily protected US agro-industry, however, would reveal “how science and politics co-evolve dynamically” at multiple scales (Forsyth

2003, 104). Led by the US government, some industrialized nations have refused to give up MeBr in agriculture, asserting that the alternatives do not provide equivalent results as the MeBr scientific community would have us believe.

The incorporation of MeBr into the provisions of the Montreal Protocol marks a moment in which neoliberal policies became embedded most directly into global governance of the ozone layer. As I have argued elsewhere (DuPuis and Gareau forthcoming), the conditions in which CFCs were incorporated into the phase-out process are different from that of MeBr. CFCs were banned in 1996, excluding some exemptions, exemptions which reveal a shift in protocol decision-making. Barrett (2003) and others (eg Litfin 1994) point out that the CFC ban was successful largely because substitutes to CFCs owned by major corporations would soon profit from the shift. CFC uses without replacements constituted an exemption from the phase-out via “Critical Use Exemption” criteria. The conditions for the critical use exemption are important for our argument: 1. “It [the CFC use] is necessary for the health, safety or is critical for the functioning of society (encompassing cultural and intellectual aspects); 2. There are no available technical and economically feasible alternatives or substitutes that are acceptable from the standpoint of environment and health; 3. Steps have been taken to minimize emissions; and 4. ODSs of sufficient quantity and quality are not available from existing stocks” (EPA 2006).

Based on these criteria, agreed upon by protocol signatories, three essential uses were exempted from the CFC ban: (1) CFCs for metered doses inhalers; (2) methyl chloroform for cleaning rocket boosters on the US space shuttle; and (3) some laboratory and analytical uses (Parson 2003:226). The criteria for the CFC phase-out implicate that the benefits of these applications to society outweighed the environmental costs.

The criteria for exemptions to the MeBr phase-out, however, reflect the rhetorical concerns of neoliberalism. The “Critical Use Exemption” clause of the protocol (Decision IX/6) drafted during the 1995 Meeting of the Parties to the Montreal Protocol in Vienna reflects the adoption of neoliberal policy decision-making, “moving its processes toward greater participation by non-governmental experts and civil society groups that inform the international community of the consequences of global environmental decisionmaking”, and relying on market mechanisms to determine qualification for exemptions (DuPuis and Gareau forthcoming). In order to qualify for a critical use exemption to the MeBr phase-out, several market-based criteria must apply:

- (a) That a use of MeBr should qualify as “critical” only if the nominating Party determines that: (i) The specific use is critical because the lack of availability of MeBr for that use would result in a significant market disruption; and (ii) There are no technically

and economically feasible alternatives or substitutes available to the user that are acceptable from the standpoint of environment and health and are suitable to the crops and circumstances of the nomination (Decision IX/6, UNEP 2007).

For MeBr phase-out exemptions, the Parties focused on the *economic impact* of the MeBr phase-out on specific interest groups, not on the health or functioning of society. Originally, the protocol provisions limited MeBr exemptions to no more than 30% of a state's 1990 baseline use, "but even that was overturned by the United States, which pressured parties to grant more. As a result, the 2006 critical use exemptions actually allowed the US exemptions that represented 32% of the 1991 baseline of MeBr use" (DuPuis and Gareau forthcoming).

The issue facing the US is that, to relinquish MeBr may mean to relinquish the US's hold on its lucrative strawberry industry, based primarily in California, due to international competition. California produces 89% of the total strawberry volume grown in the US, producing 1.6 billion pounds from 2001 to 2003, \$1.2 billion in cash receipts in 2004, making strawberries California's seventh most lucrative commodity (California Department of Food and Agriculture 2005; Carter, Chalfant and Goodhue 2005). The advent of MeBr as a chemical technology in the 1970s was instrumental to the creation of California's "strawberry production complex"—the interaction of ecology, technology, social and economic relationships that enable the intensive regional production of strawberries—and it remains a crucial ingredient to this day in this particular relation of agro-industrial production conditions.

The production complex emerged as a result of both scientific research by the University of California (and some private companies), the availability of Mexican labor and their communities, and specific ecological conditions (Runsten 1987; Wells 1996). Its share of US strawberry production increased from 53% in 1970 to over 80% in 2000 (NASS 2002). Production takes advantage of the area's unique ecology: a foggy climate, infrequent winter freezes and low rainfall in the summer months that allows a markedly long strawberry growing season. Yet these same socionatural conditions of production also create an ideal environment for the pests, fungi and mold growth that MeBr is designed to eradicate (Sances 2005). Strawberries are highly sensitive to *Verticillium dahliae* populations in soils, which can cause wilt on strawberry plants in very small concentrations (Kabir et al 2002). In the pre-MeBr era, *Verticillium* wilt was a major limiting factor to strawberry production in California (Wilhelm and Paulus 1980). Today it poses the greatest threat for non-chemical strawberry production in California. The fumigation of MeBr allows for dense planting of high production strawberries in large acreages over many seasons without an increase

in disease, with little need for rotations incorporating less profitable crops. Thus, MeBr is the *key* technology in current California production systems.⁸

China: The Rising Competitor to the US Strawberry Production Complex

China has risen rapidly as a competing strawberry producing nation. In less than five years, China has entered full force into the global frozen strawberry market (USDA Foreign Agricultural Service 2002). Frozen production has pushed China into a very important position in global strawberry production, where it presently sells in high volume to European, US and Asian markets (Carter, Chalfant and Goodhue 2005). Using its most powerful economic tools—large acreage (six times that of California), cheap labor, and high levels of foreign direct investment—and a “market-socialism” system of intense market activity via state-centered development (Borrego, Alvarez and Jomo 1996; Weil 1996), China has been able to produce strawberries without relying on MeBr. China’s frozen strawberries are already extremely competitive in both the US and European markets. Rapidly increasing exports make China one of the major frozen strawberry suppliers in the world, which has instigated protectionism from competitors (FAO 2005; USDA Foreign Agricultural Service 2005).⁹ By 2005 over 25 million pounds of fresh strawberries were produced annually (FAO 2005), and California growers are struggling to compete even at current levels. They have been fighting a losing battle to enter both Europe and China’s growing markets while China has boosted its exports into the US and Europe (California Strawberry Commission 2006; Carter, Chalfant and Goodhue 2005; USDA Foreign Agricultural Service 2005). In short, China is an increasingly important producer on the world stage. That Chinese strawberry production is much less dependent on MeBr than the US may turn out to work to its benefit. This “emerging superpower” is seen as a serious economic threat to US strawberry production by US growers, agro-chemical companies and the US government (Ragan 2005; Sideman 2005). The US relies on its MeBr-based production to give it a slight advantage over its foreign competitors, due to its ability to achieve maximum yields and stave off pathogens that thrive in MeBr-free soils (Borrego et al 2007).

The global community agrees that MeBr must be phased out to avoid serious global environmental consequences, but tensions between powerful nations are preventing any progress and putting into question the effectiveness of this heretofore exemplary demonstration of global cooperation (Gareau forthcoming). Unlike the CFC phase-out (Parson 2003), the MeBr phase-out involves many actors who are apprehensive about how production and economic investment could shift away

from the US agro-industrial system if MeBr is taken away (Carter, Chalfant and Goodhue 2005; Sideman 2005). Concerns within the US strawberry industry regarding global competition in strawberry production, especially from China, have led to an almost unilateral demand from the US for MeBr use in strawberry production.

The US initial request for “critical use exemptions” from the phase-out schedule in 2005 was by far the largest, totaling close to 10,000 metric tons, over half the exemptions from the industrialized world. Such exemptions will prolong ozone layer recovery well into the future, increasing surface UV-B radiation levels and rates of skin cancer, and threatening agriculture and human health worldwide (Goodhue, Fennimore and Ajwa 2005; Ozone Secretariat 2003; UNEP 1999; van der Leun 2004).

How the US has convinced the global community to allow for the continued use of MeBr, despite the global risks, is tied to discourses of individual rights, competition, and criticism of global scientific knowledge, all of which are associated with neoliberalism, yet when shown in practice are also strongly linked to protection of the US strawberry industry. The case study below will illustrate how the US position in the Montreal Protocol undermines environmental and social concerns and bolsters both agro-industrial and nation-state protectionism. In this case, not only are corporations protected from the harms they cause to the environment by legal provisions in international treaties (McCarthy 2004); they are also protected from emerging competition when that competition threatens the economic conditions of powerful nation-states. The consequence is that even international environmental treaties like the Montreal Protocol often emphasize greater concern for maintaining favorable conditions of production than for environmental protection.

Methodology

I obtained information for the case study as an “Observer” at Montreal Protocol meetings. Protocol meetings are attended by nation-state delegations, scientists, international organizations such as the World Bank, NGO and industry representatives, non-signatory countries (as long as no country objects to their attendance), and observers. From 2003 to 2006, I attended each of the annual “Meetings of the Parties” (MOP), the two “Extraordinary Meetings,” and the annual “Open-ended Working Group” (OEWG) meetings of the Montreal Protocol, designed to prepare for the annual MOPs, as an “Observer”. Nation-states have the opportunity to speak at plenary in the order that they request the floor. Scientific committees give presentations to plenary on ozone science and recommendations for how parties should handle cases of non-compliance, or requested exemptions to the phase-out

of ozone-depleting substances. NGOs may speak as well; however, they are typically allowed to speak only once the floor is clear, and only then if time permits. It was clear that NGOs that had gained favor with their governments were given the floor quite easily, as interventions made by the California Strawberry Commission indicate (see below). At these meetings, I took tape-recorded notes of plenary deliberations, and interviewed key nation-state delegates, NGO and industry representatives, and MeBr scientists. Official documents of the meetings, reports published by the UNEP scientific community, and other supplementary information were also used to support the claims made here.

Case Study: Deliberations at the Montreal Protocol

At the 23rd Open-ended Working Group of the Montreal Protocol (hereafter the 23rd OEWG), the Methyl Bromide Technical Options Committee (MBTOC), one of the scientific sub-groups of the protocol's Technology and Economic Assessment Panel (TEAP), which provides state delegations with scientific expertise on MeBr and the viability of its alternatives, issued a comprehensive report on their assessment of replacement technologies for MeBr. By all accounts the leading global experts on MeBr, MBTOC was to assess the viability of alternatives to MeBr and then use that knowledge to gauge the validity of nation-states' requests for "critical use exemptions" to the MeBr phase-out. These "critical use nominations" were largest from the US. Based on current scientific knowledge, MBTOC gave its assessment of the nominations to the protocol plenary.

At this point, MBTOC did not recommend the approval of the US's request for exemptions to the MeBr phase-out in field use for strawberry or tomato production. MBTOC member Dr Nahum Marban-Mendoza reported to the plenary that there were some hard years ahead with respect to phasing out MeBr entirely. Mendoza mentioned that there exist a wide range of alternatives to MeBr, and the implementation of alternatives is sometimes crop-specific. Yet, in its assessment of alternatives, MBTOC evaluated their utility by taking into consideration the differences across crops. However, even when there are viable alternatives, Mendoza noted, "The users and producers are very resistant to any type of change".¹⁰ The implication: alternatives to MeBr work quite well, and users of MeBr must make the transition in order to abide by the mandates of the Montreal Protocol.

Scientific experts, however, do not make decisions in global environmental governance, only recommendations. Nation-states are the only actors capable of making legal decisions regarding international environmental treaties. As such, resistance to change is often based not on scientific results, but on geopolitical and economic conditions,

fear of global competition, and sometimes skepticism about scientific knowledge (Jasanoff 1990; Mitchell 2002, 2003; Paterson 2000; Paterson, Humphreys and Pettiford 2003).

Indeed, recent pilot projects evaluating the efficacy of alternatives to MeBr in agricultural production in lesser-developed countries [LDCs, which the Montreal Protocol refers to as “Article 5(1)” parties] have shown promising results (FAO/UNEP 2001; UNEP 2000). MBTOC commented on these 232 projects, which were funded by the Montreal Protocol’s Multilateral Fund (MLF):

With two exemptions (control of ginseng root rot and stabilization of high-moisture fresh dates), the complete demonstration projects, for all Article 5(1) locations and all crops or situations tested, identified one or more alternatives comparable to MeBr in their effectiveness in the control of targeted pests and diseases.¹¹

This news was promising. It meant that alternatives to MeBr were viable and applicable. The LDCs, however, continued to voice apprehension with adopting alternatives to MeBr in their own agrarian production, because so many MeBr critical use nominations were on the table from the US. The LDCs remain worried that, while the industrialized countries remained exempt from a MeBr phase-out in certain sectors, their phasing out of MeBr would put them at an economic disadvantage—one based on protectionism, not competitive advantage. Jonathan Banks, at the time a Co-Chair of MBTOC, stated that this concern was essentially unfounded:

Adapting the alternatives to the specific cropping environment and local conditions is essential to success . . . It is quite easy to target an alternative, but it is another matter to take that alternative and make sure it works well in the local environment. The demonstration projects and some investment projects have done that.

Therefore, in light of the results of research projects, and the amount of aid that has gone into ameliorating the transition to ozone-friendly agricultural production, Article 5 countries—under most circumstances—have little reason to avoid the MeBr phase-out. However, the position taken by non-Article 5 countries (ie industrialized countries like the US) makes the situation less an economic question and more a *political* economic question. Some non-Article 5(1) countries, like the US, indicate that the alternatives to MeBr do not work in their national and locally constituted environmental context. However, Banks continued:

The alternatives that were used in the demonstration projects were basically the same ones that would be used in a developed country, but possibly with different preferences to suit the local environment.

There is substantial proof that the many technical, climatic, and socioeconomic barriers to MeBr alternatives can and are being overcome in diverse regions. Indeed, as the European Union (EU) delegate, Peter Horrocks, reminded the plenary, out of the 15,500 metric tons of MeBr that will exist in Article 5(1) countries in 2005, the MLF projects will reduce that amount by about half by 2007. This is significant because China, a primary consumer (if substantially less than the US) of MeBr in the developing world and growing competitor in strawberry production to the US (Carter, Chalfant and Goodhue 2005; Sideman 2005), now qualifies for MLF projects. By itself, China will consume about 65% of all the MeBr used in Article 5(1) countries in the year 2007. Mexico, also a major consumer of MeBr and competitor with the US (about 1400 metric tons at present), and South Africa (about 1000 metric tons consumed) will likewise qualify for MLF funded projects.

As stated, there is a strong push towards the stoppage of the MeBr phase-out by some developed countries. In 2003, for example, the US strawberry industry requested almost 2500 metric tons for critical use exemptions in field-use strawberry production alone—none of which were approved by MBTOC (at the time)—and 55 metric tons for strawberry runner growth (which were approved for nomination by MBTOC as there is no alternative to assist in this disease-prone method of growing strawberry plants). For strawberry production, Banks noted:

MBTOC noticed there was considerable scope for reduction in MeBr through adoption of MeBr-chloropicrin combinations containing high concentrations of chloropicrin. These are transitional strategies in the sense that they allow time for adoption of non-MeBr containing alternatives, but nevertheless they do appear to be technically suitable in many instances. And, in some cases, nominations didn't—had not used—these combinations.

Based on scientific data, MBTOC stressed that these combinations of chemicals would allow time for the development of MeBr-free technologies in the future. The US had simply not attempted to use a fumigation method that took into account this scientific information.

The MBTOC presentation led to a tirade of comments and retorts from the developed world. The US delegation stated that it would only acknowledge the outcomes of the MBTOC report on the critical use nominations as a “learning process”. He stated the official position of the US:

Climatic and soil conditions vary greatly between countries and between regions within countries . . . MeBr substitutes . . . that are technically and economically feasible to one user might not be technically or economically feasible to another user. . . Regulatory restraints on alternative pesticides can limit their use . . . In California, there are township caps on the emissions of alternatives. So there are

significant special circumstances in the United States in addition to the variation of climate and soil that must be addressed by MBTOC.

The US had effectively situated the California strawberry producers and California growing conditions in a unique position vis-à-vis both competing growing regions and the scientific data used by the global experts on MeBr, the MBTOC. The US claimed that the scientific achievements made worldwide were not transferable to the US agro-industrial system. The US's usage of particular subjects in a particular region was not, nor is, readily understood as legitimate by other nation-states. In response to the US statement, Chile noted the apparent contradiction of the US position—a sentiment shared by several LDCs—where alternatives that work effectively in Chile do not appear to work in the US:

Our concern lies in the fact that, from a political point of view, this is not sustainable at all . . . You have certain crops in Article (5) countries which are being used in the developed countries, and yet in one there are not critical uses and in the other [ie industrialized countries] there are critical uses, so we could say that these exemptions should be applied across the board . . . We cannot imagine that such an important aspect as the phase-out of MeBr— and as it is applied in our country without the proper alternatives—in other countries could be treated completely differently . . . and that they be allowed to continue to use MeBr.

The basic idea presented by Chile is that, if the US is able to request exemptions to the phase-out of MeBr, then Chile will also demand exemptions when its time comes. Indeed, the US position threatens the virtual halt in steps toward a phase-out of MeBr worldwide. LDCs are not willing to discuss any plan that accelerates the phase-out process, but rather concentrate on preparing for critical use exemptions of their own. This is a serious issue. The EU delegation has made several convincing reports over the years that LDCs will not be prepared for the scheduled phase-out of MeBr in 2015 without some sort of a regimented guideline. The EU has put forth detailed draft proposals to help coordinate a phase-out schedule, but due to the US request for exemptions, the LDCs are unwilling to discuss the matter.

The Power of US Agro-industrial Subjects/Conditions

Why does the US argue that it is having such difficulty phasing out MeBr where other countries have not? The California Strawberry Commission and the US delegation have stated that it has much to do with the high volume of production in California: what is left to phase out is a relatively small amount of MeBr, given how much strawberry production (33%) has already become MeBr free.¹² But the scientific data from MBTOC indicate that this should not be an issue for the US. The cost differences

for eliminating MeBr have since been estimated in some studies to be quite negligible (Norman 2005; Sydorovych et al 2006). The answers are found in an examination of what groups are behind the US position, primarily in California.

At the 2004 1st Extraordinary Meeting of the Parties to the Montreal Protocol (1st ExMOP), a meeting designed solely to discuss the critical use nominations of the US and several other core countries, the California Strawberry Commission—the spokesperson for roughly 600 strawberry growers—noted several aspects that allegedly separate California from other regions/circumstances. Roger Wasson, then the president of the Strawberry Commission stated:

We have made significant progress in adopting alternatives, but they do not work in every circumstances [sic]. For example, technical issues associated with extreme slopes, certain soil types, and local regulations have all limited our ability to be able to transition any more quickly. . . . Our industry simply cannot make a change of this magnitude in this timeframe without serious consequences to an industry with 600 growers . . . Unless we have time to develop the infrastructure necessary to safely and effectively phase in the alternatives on a large scale, long term progress in adopting alternatives will likely be jeopardized.

The US delegation asked MBTOC to respond to the Commission's request for more MeBr. Jonathan Banks explained MBTOC's new recommendation:

The MBTOC has looked at a number of nominations which suffer, shall we say, from the same technical problem as the one mentioned by the Strawberry Commission, and that is that while there may be on occasions technical alternatives available, the speed of transition to those alternatives is a barrier and it is a very real technical barrier where you cannot turn round a single industry in a single day, or a single season, and therefore MBTOC has been very sympathetic and recommends that parties adopt a flexible approach to this particular issue . . . We would certainly wish to support the suggestion of the California Strawberry Commission and the US delegation . . . We would recommend to parties to grant the [critical use nominations].

This response came as quite a shock to the global community. Not only did it appear that the US was receiving exemptions that were ostensibly specific to particular regions in California, but they were doing so by the intervention of a representative of the region with its own scientific expertise. The California Strawberry Commission was claiming that its own science was more applicable to its case than was the science of the global community. The EU delegation responded with bewilderment:

Some five minutes ago we heard Mr. Wasson from the California Strawberry Commission make a case for additional tonnage [of MeBr].

We also heard the MBTOC co-Chair come on and tell the parties that there should be a more flexible approach, that this application should be examined, and that it [ie the tons requested] would go up again. This is a most unfair process that we are going through here! This is unfair on our member states who do not have people present to argue the case for increases in MeBr. We understood that we had a process in place when MBTOC was making the recommendations . . . It is a most unusual process that we are going through, where we hear the MBTOC co-Chair recommending as though it were some kind of auction system.

This feeling was also expressed by some MBTOC members, members who wish to remain anonymous: “It is so unfair to the Article (5) parties. They put so much effort into the alternatives”.¹³ The California strawberry production complex was in effect claiming that the ozone-friendly alternatives were not applicable in California, and that this would negatively affect its roughly 600 strawberry growers. Fitting snugly into the discourse of neoliberalism, the issue raised by the California Strawberry Commission was framed within notions of global competition, which would be made “unnatural” without MeBr in the US. Here, private interests were able to provide a market-based argument that obviated the scientific claims of MBTOC. Here, the “stakeholders” themselves were providing a voice to groups in California that required representation in the neoliberal context (Rose 2004; DuPuis and Gareau forthcoming). Yet, further interventions from other California actors attempted to shed doubt on the claims made by this nation-state/agro-industry alliance. The further interventions, however, did not fit the agenda of the US and were thus ignored.

Vanessa Bogenholm, a prominent California strawberry grower and recent Chairperson of the California Certified Organic Farmers association (CCOF) responded with a statement that depicts the sentiment of most civil society groups working at the Montreal Protocol, if from the perspective of a strawberry grower who has worked to eliminate MeBr from her own production:

True farmers are stewards of the land, and I did not feel that using MeBr was a responsible method of farming . . . I am not necessarily advocating that all farmers switch to organic farming, but I do not feel that farmers need to use materials that are destructive to the environment, harmful to the employees, or dangerous to anyone who may come into contact with the farm operation. Farmers need to move in a direction that eliminates their dependency on MeBr. I urge you to look at the critical use exemptions asked for by the US . . . They have known that this phase-out was coming for many years, and should have been doing major field-size research trials, not just small, 100–200 feet experimental trials . . . Financial concerns of individual farmers

cannot be considered more important than environmental concerns, or the health of human beings.¹⁴

Unlike the California Strawberry Commission's intervention, Bogenholm raised no response from the plenary. Civil society groups proposing that the US's requests for MeBr exemptions are baseless do not hold much water in plenary due, in part, to the fact that they presented their findings/protests in a non-neoliberal way. The result is that their comments did not compute at the Montreal Protocol. Bogenholm experienced this at the 1st ExMOP first hand. Displayed above, Bogenholm's claims centered on the lack of foresight that the California strawberry industry gave to the MeBr phase-out process. Putting more efforts in finding alternatives to MeBr, the US could have led the way to ozone-friendly alternatives. Bogenholm makes clear that the CCOF opposition to MeBr is not a complete shift to organic strawberry production. Bogenholm also made clear that the CCOF's position is that the global environment must be considered first, that the US was capable of doing this, but did not: "Financial concerns of individual farmers cannot be considered more important than environmental concerns, or the health of human beings".

The US request for critical use exemptions, Bogenholm asserts, undermines the efforts made by organic farmers in the US and farmers worldwide who have transitioned to alternatives. Recent organic research in California shows that some alternatives work quite well (Bogenholm et al 2003; Kabir et al 2002; Martin and Bull 2002; Millner, Ringer and Maas 2004; Muramoto 2006; Muramoto et al 2005; Sances 2005; Sances and Ingham 1997), but the California Strawberry Commission claims that they do not, and there are legal barriers to the broad usage of conventional alternatives. Yet, Bogenholm's claims about considering the "general welfare" of the global community versus that of some 600 California growers is not a viable counterargument when local knowledge regarding the fairness of competition is a priority. Bogenholm's discourse simply does not fit with the mandates of the Montreal Protocol, and is thus widely ignored in protocol deliberations.

Here we see how "neoliberalisation incorporates, co-opts, constrains and depletes activism" to the point that any discourse that does not fit the neoliberal agenda is ignored (Bondi and Laurie 2005:395). The Montreal Protocol, after all, is built upon "good faith" principles of trusting that nation-states and their industrial counterparts are providing the scientific assessment panels with the best information available, and that they are making the best efforts possible to phase out ozone-depleting substances. In fact, with ozone science, the global community has begun to grow more and more dependent on the science of particular sites (DeCanio and Norman 2005), and the sites with the highest "scientific capital" are the most influential. As Jonathan Banks explained in 2004:

MBTOC supplemented the technical information that was provided by the parties in the nomination with its own expertise and with the expertise that came from other nominations. It also gave benefit of the doubt to the nominators, and that is it deferred to the expertise of the nominating parties . . . There was very much a recognition of the good faith efforts of the nominating parties (Jonathan Banks, 1st ExMOP 2004).

However, this simultaneously takes us back to the primacy of protectionism of the conditions of production in global environmental governance. With the US and the California agro-industrial complex in particular situated as the dominant site of scientific knowledge in strawberry production, it is no wonder that “good faith efforts” have allowed for a virtual status quo in strawberry production standards, with alternatives to MeBr difficult to defend. Additionally, the huge exemption for the US strawberry industry at the ExMOP was very much related to threats by the US to withdraw from the treaty entirely—potentially catastrophic for the treaty as a whole. Arguments made by Bogenholm or anyone else were destined to fall on deaf ears in such a political situation.

Civil society groups that plead for global environmental concerns to be considered primary are not taken into account in Montreal Protocol law or discourse, because it does not fit with the mandates of the treaty, specifically the neoliberalized MeBr phase-out exemption criteria. Therefore, the US is able to act protectionist with neoliberal language because it claims to have a situation in which alternatives do not work. In order for civil society groups to be heard at the global scale, they are forced to develop a neoliberal discourse, or go unnoticed.

Interestingly the only civil society group that has been able to generate *any* reaction from the Montreal Protocol plenary has been the Natural Resources Defense Council (NRDC). David Doniger of the NRDC noted that the US has incredible stockpiles of MeBr, more than enough to supply US critical use exemption needs. At both the 24th and 25th OEWGs, Doniger stated the importance of these stockpiles in undermining US claims for producing more MeBr. At the 24th OEWG the US was forced to respond to Doniger’s intervention. Later, at the 25th OEWG, Doniger would make use of data gathered by the EIA—photos and video that provide evidence of these stockpiles of MeBr stored in 50 railroad cars and many small canisters totaling at least 5700 metric tons. These stockpiles are not considered by the protocol when exemptions are granted. The reason why is partly a problem with corporate capitalism: US firms own the stockpiles of MeBr and are under no obligation to reveal the quantity to anyone, including the US government, because they are privately owned. However, the information was enough to generate feedback from the US. The US felt obliged to explain the

situation from their perspective to the plenary:

Methyl Bromide stockpile numbers are considered confidential business information by our Environmental Protection Agency, it is a legal judgment that they make . . . The companies who hold the stockpiles are in the US, but the stockpiles are available to others in the world, it is not a guarantee that our farmers will be able to obtain those supplies . . .¹⁵

There may be other ways that civil society groups can help expose the invalidity of the US's claims. For example, using a discourse of competition, the US portrays that California strawberry growers are in a real predicament due to their particular growing conditions. Yet, how aware, for example, are hillside strawberry growers of these particularities? Will hillside strawberry growers benefit from the extended use of MeBr (Brown 2003)? Investigating the conditions of production of the groups utilized by the US delegation might provide a step toward unveiling its protectionist claims.

Conclusion

This paper has aimed to show how neoliberalism produces protectionism in global environmental governance. Powerful states have the greatest ability to protect conditions of production while enforcing the de/regulation of international markets. In fact, one might think about neoliberalism as a continuation of neo-imperialism, where North-based political economic domination is furthered by the manufacture and disciplining of markets in the South while protecting their own industries. In the Montreal Protocol, neoliberalism presents a context in which actors must function, but the components which “characterize the specificity” of the phase-out of MeBr are likewise strongly linked to protectionism of the conditions of California strawberry production.

US protectionism of its strawberry production complex appears to be undermining the environmental objectives of the Montreal Protocol. Whereas the CFC phase-out—the phase-out that made the Montreal Protocol appear so successful—involved a single industry shifting to alternative chemicals that could be inserted into an established industrial process, the MeBr issue reveals the uneven conditions of production and global competition. Countries with geopolitical power and political economic influence that fear that neoliberalism will undermine their competitive advantage can point to ecological complexities that change sometimes from site to site. This has placed great stress on the process of protecting the global environment and revealed most markedly the coproduction of science and politics in global environmental governance.

As an anonymous US-based pro-MeBr MBTOC member told me, “You can’t just substitute [MeBr] for another [chemical] when the other

has a different effect on the whole system".¹⁶ Changing from MeBr to an alternative chemical changes the integrated pest management strategy; it changes the ecology of the approach to limit pests and pathogens. The phase-out process is different for MeBr because the chemical is part of a larger, dynamic system. The MeBr issue, however, also consists of socionatural dynamics not considered by global environmental governance. Critical geographers have noted how global environmental governance often treats "social" and "natural" dynamics as separate phenomena, thus remaining blind to embedded conditions of socionatural inequality, or uneven global competition (Bakker and Bridge 2006; Goldman 2005).

The complexity of the relation between land, labor, growers, and state institutions is great with MeBr, involving negotiations at both nation-state and regional scales, involving a great deal of influence from the "bottom" at the global scale via agro-industrial and grower representation. The US draws on what are ostensibly unique conditions within the California region of strawberry production in order to contest the scientific knowledge of the global community. In effect, the US has frustrated the global community by influencing the global experts on ozone-depletion (and nation-states) to accept US-based conditions and science over their own scientific knowledge. This stance has to date been effective in prolonging the protection of the US agro-industry from foreign competitors.

Counterclaims from civil society groups and competing regions have been less successful at the protocol because they do not fit US interests, nor the neoliberal discourse of global environmental policymaking. Claims from California groups that stress the importance of the global environment fall on deaf ears, as do claims from regions working to develop competitive ozone-friendly scientific knowledge of their own. Such claims are unable to penetrate the dominant intersection of science and politics established around US claims.

The coproduction of science and politics is very likely consequential to broader political economic concerns extending beyond the confines of "regime" analysis. The local conditions of production might have much more to do with land rents than with chemical feasibility, with labor costs, with US strawberry growing systems being completely dependent on strawberry varieties that require MeBr to thrive, and with economic pressure from competing regions like China than with hillside compatibility. Global competition is also an outcome of state rollback, where local governments are literally wiping out agriculture in favor of housing developments, and national governments are opening markets to foreign competitors.

Civil society would be more successful in thwarting US protectionism by utilizing neoliberal strategies of their own, such as the NRDC and

EIA's exposition of hidden MeBr stockpiles to the global community. A strong neoliberal discourse of a level competitive playing field and antipathy towards any sort of protectionism would likely be civil society groups' best strategy in this instance. In other words, they are ignored here not because their positions are inconsistent with neoliberalism, but because they run counter to the interests of powerful capitalists with strong connections into the relevant portions of the US state apparatus.

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Endnotes

¹ I am grateful to Alan Rudy for his help with this thread of argument.

² There are many other examples of the intellectual program of neoliberal environmental governance. Those mentioned here engage directly with ozone politics.

³ In line with his earlier work in *The Fiscal Crisis of the State*, O'Connor (2002) means by social capital the materialization of social investments by the state in social institutions and infrastructures. He does not mean the kind of "networking-for-success" more recently associated with the term (cf Coleman 1988).

⁴ "O'Connor includes many kinds of infrastructure, a labor force with certain characteristics and abilities, and given levels of environmental quality and ecosystem services among the conditions of production" (McCarthy 2004:335).

⁵ For example, the US Stakeholders Group on MDI Transition, a consortium of leading patient and physician associations representing more than 25 million Americans, supports the use of ozone-friendly alternatives for MDIs (2004 16th MOP tape-recorded notes).

⁶ As a major strawberry producer for the EU, Spain was granted 300 metric tons. Additionally, Israel, the home of Dead Sea Bromine, a major producer of MeBr, was awarded almost 1000 metric tons in 2007.

⁷ The phase-out of MeBr was incremental, based on 1992 production and consumption levels. In 1999, developed countries cut 25% in production and consumption; in 2001, 50%; in 2003, 70%; and in 2005, 100%. For LDCs, the phase-out began in 2002 with production and consumption frozen based on their 1995–1998 averages. In 2005, 20% was cut; and in 2015, 100% will be phased out (UNEP 2007). The EU, however, is trying to pass legislation to make the phase-out more incremental for LDCs, with cuts between the 2005 and 2015 period (personal observation at protocol meetings 2003–2006).

⁸ This explanation of California's strawberry production complex is the product of a research team investigating global competition in strawberry production (Borrego et al 2007).

⁹ For example, on 6 July 2005, the EU published a notice of initiation of a safeguard investigation concerning imports of frozen strawberries from the Chinese mainland. Poland complained that China imports could endanger its domestic production (USDA Foreign Agriculture Service 2005).

¹⁰ MBTOC presentation to the plenary, UNEP 23rd OEWS, 6–11 July 2003.

- ¹¹ Jonathan Banks, Co-Chair of MBTOC, Synthesis Report Presentation at the 23rd OEWG, 2003.
- ¹² <http://www.calstrawberry.com/research/mbromide.asp>.
- ¹³ Interview with MBTOC member, 1st ExMOP 2004.
- ¹⁴ Bogenholm speaking at the 1st ExMOP March 2004.
- ¹⁵ US delegation, 24th OEWG 2004.
- ¹⁶ Interview with MBTOC member, 25th OEWG 2005.

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