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“Governmentality” of climate change and the public sphere *

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Abstract

The paper discusses the politics of climate change from the emergence of the problem as a public issue to the development of a form of ‘governmentality’ that implicates science, economic enterprises and individuals. I aim to understand the role of the media – as the main arena of the contemporary public sphere – in the construction and maintenance of various forms of power-knowledge. The paper starts by analysing the position of science in the management of climate change and points out that while it shaped the media’s framing of the issue in the early years, politicians and other social actors later attempted to appropriate science as a legitimatory tool for options of regulation or deregulation. I then discuss the cultural and political roles of economic growth in democratic societies and its articulation within discourses on environmental protection. This is followed by an analysis of discourses on globalization and how they are embedded in the science and politics of the greenhouse effect. Finally, the paper looks at the paradoxical positioning of citizens in relation to the greenhouse effect and concludes that discourses on techno-science, sustainable development/ecological modernization and globalization have contributed to the privatization and dissemination of responsibility and weakened the political debate in the public sphere.

Key-words: climate change; science; media; governmentality.

1. Introduction

In the last few decades, environmental change has intensified to a degree that severely threatens the security of ecosystems and human societies. This paper focuses on what is possibly the largest environmental risk currently faced by mankind: climate change.

Despite the strengthening of scientific consensus in the last decade regarding the problem and its anthropogenic origins, greenhouse gas emissions have continued to rise in most countries. The roots of the problem are deeply embedded in the corporate-industrial system and in lifestyles. Therefore, the 'prescriptive' force of science is posed against an extremely powerful aspect of life in the modern world: the role of economic growth in democracies.

Responses to climate change have also been shaped by the globalized system of international relations that we have today and by discourses on globalisation. A variety of mechanisms have been constituted to disseminate responsibility to deal with the problem, both across groups in society and across space. However, there are large problems of equity and justice in this mode of regulation.

The paper aims to analyse the system of 'governmentality' that has been progressively constituted around climate change and consider the role of the media and other public arenas in its constitution and reproduction. At the national level, the paper focuses mainly on the cases of the United States, the United Kingdom and Portugal.

Despite the role of journalists in calling attention and raising awareness for the problem, I will argue that the media, the main stage of the contemporary public sphere, is instrumental for a range of social actors to advance or justify specific options in relation to climate change. This happens in a context where the governance of climate change has been largely 'privatized', both in terms of access to decision-making and in terms of the onus of action.

Science itself has been 'domesticated' through its self- and hetero-constitution into a discursive resource which is used very differently by social and political actors to legitimate given courses of action or inaction in relation to greenhouse gas emissions.

2. Science and the battle for discursive control

The scientific community 'created' climate change. Given the 'abstract' and diffuse nature of the problem, the collection and interpretation of the data that first 'showed' it could only be done with the help of techno-scientific knowledge and apparatuses. Techno-science thus rendered visible and comprehensible what would otherwise be unseen and/or not understood. These 'relations of definition' (Beck, 1992) are continually vital.

In the late 1980s, the 'greenhouse effect' started surfacing in various arenas of countries like the USA and the United Kingdom as a matter of interest and concern. In a series of meetings, scientists – including some quite politically motivated ones – signalled the intensification of the naturally-occurring greenhouse effect and pointed out possible implications. Pushed by various extraneous events like the extreme drought of 1988 in the USA, the issue gained public status when the media started dedicating a significant degree of attention to it (e.g. Mazur, 1998).

The creation of the Intergovernmental Panel on Climate Change in 1988 is seen by some as a means for policy-makers to reassert control and supervision over the issue (Bodansky, 1995). Shackley and Wynne (1995) have shown that climate science and the global policy order have co-constructed each other.

In the initial phases, media discourse on the greenhouse effect drew closely on scientific sources. The language and the reasoning were characteristic of the professional science community. However, the greenhouse effect would soon be captured by other social actors that would prove more competitive in shaping media discourse. Longitudinal analysis of media discourse shows how scientists started off from a dominant position in the social definition of the issue in the late 1980s but gave way to political actors (Trumbo, 1996; Carvalho, forthcoming). The 'dominant' frames or forms of discursive (re)construction of climate change in the press changed accordingly.

Scientific knowledge on climate change has been used by a variety of actors, from policy-makers to activists and business, as well as by particular groups of scientists, to advance particular agendas and worldviews.

British Prime Minister Margaret Thatcher, for instance, appealed to 'sound scientific analysis' and amplified investment in research as a legitimate way of dealing with climate change ('Thatcher stresses global effort', 1989; see Carvalho, 2005). Similarly, Blair's recent announcement that he wanted to 'further explore' the science of climate change and to develop technology to address it (Sparrow, 2005) serves the purpose of justifying delay in the adoption or enforcement of regulations.

In the USA, science has been at the core of several administrations' rhetoric with regard to the problem and has been publicly presented as proxy for political action. George W. Bush's Climate Change Research Initiative, for example, is said to correspond to the following principles: 'adopt a measured approach based on the best science', 'remain flexible, able to adapt to new discoveries and technology'; 'leverage the power of markets and technological innovation'; 'ensure global participation'; and 'ensure continued economic growth' (U.S. Climate Change Science Program, 2003).

Environmental organizations such as Greenpeace, Friends of the Earth or the Portuguese Quercus have also recurrently used scientific knowledge as a tool to put pressure on policy-makers and demand specific measures. Obviously, they also act as knowledge-brokers (Litfin, 1994) in relation to the general public.

In the battle for control of the definition of climate change, the scientific community has lost much of its original power. However, scientists may have tried to hold on to their authority. Zehr (2000) has argued that emphasis on uncertainty in the American media has been instrumental in creating a boundary between scientists, as the only legitimate providers of knowledge, and the public, thereby represented as ignorant or misinformed. Previous studies have highlighted the scientific community's attempt to establish the authority of scientific values over other forms of cognition and advance the authority of scientists over the identification and resolution of social and political problems in what has been termed 'anti-democratic politics' (Fries, 1984).

More pragmatically, scientists' focus on scientific uncertainty can serve as a basis to claim for more research funds. Some have argued that funding has indeed been a reason for making compromises or concessions in relation to the political community. The cycle of postponement of political action implicit in Brunner's analysis (2001: 14) appears counter-

productive: ‘[The IPCC] reports promote predictive research, when they reinforce the expectation that the reduction of scientific uncertainties will pay off for policy purposes, without appraising previous predictive research according to policy purposes.’

Uncertainty has also been used by the so-called climate change ‘sceptics’ to oppose claims for regulation. This small but very loud group of scientists, often subsidized by the fossil fuel industries, has tried to contest the dominant consensus regarding the enhanced greenhouse effect and its anthropogenic origins and has found a significant amount of space in the American and British media (Gelbspan, 1997; Boykoff and Boykoff, 2004; Carvalho, forthcoming).

Several factors may contribute to explain the place the sceptics in the media. The journalistic cannon of ‘balance’ or ‘fairness’ has often led to a 50/50 type of representation of differences of opinion without accounting for the real number of those that hold them. Based on the analysis of the American ‘elite press’, Boykoff and Boykoff (2004) have termed this ‘balance as bias’. The news values of ‘conflict’ and ‘drama’ may also have made these dissonant voices appealing to journalists. Furthermore, the assertiveness of the ‘sceptics’ may have been perceived as potentially more authoritative and persuasive for the general public than the ‘normal’, non-overstating ‘scientific style’.

The discursive (re)construction of science in the media also appears to depend on the ideological viewpoints that are dominant in each news organ. British broadsheet newspapers, for example, have consistently represented science in ways that legitimate and reinforce preferred courses of social, economic and political action. Uncertainty and controversy in scientific knowledge have been used by newspapers like *The Times* and *Sunday Times*, amongst others, to promote mistrust in science, by discrediting the IPCC, for example, and thereby dismissing the risks associated to climate change and opposing political action that might alter the economic and lifestyle status quo that causes the problem (Carvalho, 2002; forthcoming)¹.

Despite these discursive battles, science continues to hold an absolutely central place in the mediation between nature and human action. Modernity is characterized by a near-unchallenged belief in scientific rationality and technological innovation. Pollution and

other environmental bads are viewed as the result of inefficient technical equipment or poor management. The same structures that produce the damage are expected to solve it. Despite being probably the most civilization-dependent and complex environmental harm we are causing, climate change is grossly construed through these same lenses.

However, faith in techno-science as the solution for the problem is based on two fatal illusions: human ability to identify the limits of nature (the point where life-supporting systems collapse irreversibly) and the possibility of solving the present ecological crisis with techno-managerial responses. Climate change encompasses a time-scale of hundreds or thousands of years and its potential impacts stretch to every form of life on earth with the possibility of major devastation if a point of no return is attained with subsequent positive feedbacks. There is no prospect of mitigating the problem significantly with the present political, economic and technical arrangements².

Techno-science is based on the pillars of ‘objectivity’ and ‘validity’. But climate sciences face a series of challenges with regard to these precepts. Here, scientific ‘proofs’, for example, are of a very special nature. Since any specific weather event or succession of events can be the result of natural factors, including natural climate variability, it is very difficult to demonstrate cause-effect relationships in relation to the intensification of the greenhouse effect. It is only the accumulation of weather events that can be presented as indicative of human-induced climate change. But waiting until the worse effects take place is obviously counter-productive. The idea of ‘proof’, as irrefutable demonstration of something, is therefore detrimental in relation to the need to address climate change because it can justify an indefinite procrastination of political regulation.

Policy-makers have therefore been urged to adopt a precautionary approach. But even so one needs to choose where to draw the line. What degree of change is acceptable? That is the big question that needs to be answered. Lately, there has been much debate around the operationalization of article 2 of the United Nations Framework Convention on Climate Change, which defines the objective of the convention as avoiding ‘dangerous anthropogenic interference with the climate system’. As scientists have pointed out (Oppenheimer, 2004; see also Moss, 1995), what is dangerous climate change is essentially a value-judgement. It depends on what degree of loss or transformation humanity is

prepared to accept. Given the fundamental undecidability of knowledge for action, social values are called in to evaluate the acceptability of risk and desirability of policies and regulations.

Deciding where to stop climatic change is, essentially, a political decision³. However, politicians are, in democratic societies, dependent on popular approval and support, which in turn is influenced by discourses that circulate in the media and other public arenas. As emissions of greenhouse gases are closely related to important economic and cultural aspects of current societies, social and political representations of consumption and material growth are an important part of the decision-making equation.

3. Democracy and the cult of growth

‘Consumerism (the essence of a materialistic conception of life) became the predominant ideology in the second half of the twentieth century (Ophuls, 1977). Save for a few marginal exceptions, all over the planet economic growth has become a principle means of legitimacy for nation-states. The biological foundations (nature) underpinning that growth was thought to be inexhaustible.’ Leis and Viola (1995: 33)

Modern state authority is very much tied to the ability of governments to promote economic prosperity (Litfin, 2000). Given that the generation of wealth has been quite dependent upon the use of fossil fuels, climate change and the scientific community’s call for strong reductions of greenhouse gas emissions ‘challenge a key source of the state’s political authority: its role as guarantor of wealth production’ (ibid.: 119) Science and politics thus seem to be in an inevitable collision course, with politicians ‘destined’ to accommodate to the imperatives of modern culture.

The global regulatory approach to climate change builds on the assumption that the resolution of the problem is compatible with economic growth. The UNFCCC sets out in article 2 that the objective is to achieve stabilization of greenhouse gas concentrations in the atmosphere in a way that should ‘enable economic development to proceed in a sustainable manner’. Earlier discourses on limits (Meadows et al., 1972) were abandoned in favour of a

win-win approach that is perfectly adjusted to the corporate-industrial order (Torgerson, 1995).

Taking a step beyond the logic of sustainable development, the discourse of ecological modernisation converts environmental problems into economic opportunities. Ecological modernisation 'makes the 'ecological deficiency' of industrial society into the driving force for a new round of industrial innovation. (...) Remedying environmental damage is seen as a 'positive sum game': environmental damage is not an impediment for growth; quite the contrary, it is the new impetus for growth.' (Hajer, 1996: 249) Science and technology are evoked as the source of solutions to 'fix' the environment while providing economic gains.

Since their rise to government, Tony Blair and New Labour have drawn on ecological modernisation to frame climate change (e.g. Blair, 1997). Promising a better environment and a better economy, this account has been hard to resist. Nevertheless, its viability is still to be demonstrated and recent downwards revisions of the UK's emission targets certainly raised doubts. Moreover, there are obvious tensions in public policy as the government has allowed enormous increases in the volume of air transport, for instance. Continuing to promote unlimited consumption and mobility cannot help the environment's cause.

Recently, the discourse of ecological modernisation has also been appropriated by the Portuguese government. The country has been deviating immensely from its Kyoto targets, with a sharp rise in greenhouse gas emissions in relation to the 1990 baseline. However, the government has been trying to revamp its image by presenting a plan that 'will' turn Portugal into a 'winner in the carbon economy' (Ministério do Ambiente e do Ordenamento do Território, 2005). Here too, the optimism derives from the faith in the transformation of environmental problems into market benefits.

Around the world, there are not many signs of significant change motivated by environmental protection⁴. Talking about the possibility of negative growth is anathema everywhere. No politician in office or in opposition braves the topic in public. Preventing or lowering growth due to environmental policies would be out of question.

Such a scenario is also taboo in the media. Despite the existence of important differences between news organs, even the most 'progressive' ones avoid making their audience face the possibility of restrictions to material 'wants' and 'needs' (Carvalho, 2005; in press).

They also stay away from the responsibility, wrong-doings, and scope for action by corporations in relation to climate change (Media Lens, 2004).

As commercial institutions themselves, the media have a fundamental dependence on the economic system's vitality. So, side by side with information about climate change, advertising makes a pervasive appeal to consumption and mobility. Cars, cheap flights and the newspaper's own draw for a holiday in the Caribbean paradoxically coexist with news about alarming projections of climate change. On balance, the cultural role of the media in democratic societies is, unquestionably, more of seduction of consumers rather than of mobilization of responsible citizens.

It is the ambiguity of the ideological project of 'sustainable development' that has allowed the paradoxes in the social, economic and political order that we have today (e.g. Luke, 1995). It has made 'sustained economic growth' unproblematic as long as it is tinted with green hues. As a consensual language, there is no surprise that sustainable development has become hegemonic. Together with ecological modernisation (and its trust in techno-scientific solutions), it has a disciplinary role in relation to more radical forms of environmental discourse and mobilization. Integrative and conciliatory, these discourses annihilate any possibility of opposition.

4. Global managerialism

The Earth summit of 1992 was possibly the highest expression of the global approach to environmental matters that grew out of a new sensitivity to problems such as the ozone 'hole' and the 'greenhouse effect'. The event itself and the regulatory mechanisms that were approved therein, such as the United Nations Framework Convention on Climate Change, the Biodiversity Convention and Local Agenda 21, embodied a new awareness of the trans-border and worldwide dimension of environmental harm.

Throughout the 1980s and 1990s the spatial category of the 'global' gained visibility through a variety of voices and media. The discovery of the 'hole' in the ozone in 1985 and denunciations of destruction of the Amazon rainforests are examples of polarizing issues

that stimulated an important degree of media coverage and generated a new perception of the connectedness of problems across the globe. 'Our Common Future', the report of the World Commission on Environment and Development (1987), was also a landmark in this process.

Key political figures, such as Margaret Thatcher, attempted to construe the greenhouse effect as a global problem and therefore call for global action. This would justify abandoning proposals for policies from the industrialized countries only, in favour of global policies (Carvalho, 2005).

Roe (1994) claims that the 'global' is used 'less to complement than to *reject* the appropriateness of analyzing atmospheric warming at the local, regional, and national levels' (p.116). Framing the greenhouse effect as a 'global' problem implies that only 'global intervention' can be effective, and has a prescriptive function. The focus on the global level thus excuses inaction at the local and national levels, where the generation of greenhouse gases occurs.

The global framing has been used by the United States and other countries to justify their lack of action as long as developing countries do not commit to also addressing the problem. Brunner (2001) points out the fact that important 'no regrets' policies that could be adopted at the local and national levels thus get lost.

Lexical choices for labelling the problem also reflect these historical developments as the expression 'global warming', still pervasive in the American media, came to largely replace 'greenhouse effect' at the end of the 1980s and beginning of 1990s.

By developing a particular epistemology of climate change, scientists and the IPCC have also reinforced this 'globalism'. Global Circulation Models, which attempt to reconstruct the world's climate system, are some of the most celebrated tools of analysis and have shaped many influential reports. Yet, at the basis of the GCMs are crucial political reductions. By treating all emissions as equal, they neutralize the highly different social contexts in which they are generated (Demeritt, 2001). Rich man's 'luxury' emissions become equivalent to poor man's 'survival' emissions (Agarwal and Narain, 1991)⁵.

Climate change is also inexorably intertwined with wider discourses on 'globalisation'. Policy-makers, international organisations and – most obviously – corporations have been

representing the 'mobility' of capital and production as 'natural' and 'inevitable' processes (Fairclough, 2000). In a borderless world, the flow of goods, technologies and skills is, we are told, unstoppable. We can only join in or perish.

There are many problems with this kind of social construction of globalisation. Firstly, it deletes agency insofar as it does not point out the actors and the decisions that advance globalisation. Secondly, the implication of this is that the discourse of globalisation omits responsibility for particular choices. Ultimately, such a globalisation makes democratic politics impossible. There is no scope for citizen participation and informed deliberation in this account of the how the world works.

'Global' discourses on climate change were progressively institutionalised in bodies and arrangements such as the Intergovernmental Negotiating Committee, the UNFCCC, Conferences of the Parties, and the Kyoto Protocol⁶. Associated to these institutions and legal sources, the regime that administrates climate change involves a number of instruments of regulation such as tradable permits, Joint Implementation and the Clean Development Mechanism. These are 'flexible' mechanisms that allow states to reach targets by buying emissions rights from others or subsidising adjustments elsewhere to claim emission credits.

In the United States, the main legitimacy tools of the state in relation to the problem of climate change have been voluntary commitments promoted amongst the corporate sector. The United Kingdom has also strongly relied on voluntary measures and the market to achieve official targets⁷. There is a diffusion of responsibility to address environmental degradation, whose management becomes largely dependent on the private sector's self-control.

Sairinen (w/d: 1-2) has noted that in the European Union there has been a significant 'regulatory reform' that 'has experimented with an impressive range of new public policy tools, which can be classified as 'economic', 'co-regulation' and 'planning' instruments. In addition, the private sector has itself developed so-called 'self-regulation' instruments (...). The economic instruments include several types of environmental taxes and charges, tradeable pollution permit systems and government subsidies for environmental improvement. (...) Co-regulation (joint policy-making) is a category that covers cases

where the interactive relationships between public authorities and firms are especially pervasive and close. It consists of voluntary agreements, ecolabels and conflict resolution models. Self-regulation corresponds to the increasing number of so-called self-initiatives and responsible care programs.’⁸

As Sairinen argues, this corresponds to a form of governmentality of environmental problems where ‘[g]overning is not considered an activity restricted to governments and ministries, but as more or less continuous process of interaction between social actors, groups and forces and public or semi public organizations, institutions and authorities.’ (p. 1).

5. Paradoxical subjectivities

Despite the scale of the risk associated with climate change, there is no significant social mobilization, no large-scale form of contestation, no major unrest. How do we come to accept such a risk? How do we reconcile awareness of the problem with consent to the system of social, political and economic practices and relations that generate that problem? In this section we will look at citizens’ positions in relation to the greenhouse effect and discuss the kinds of political subjectivities stimulated by present forms of governance of the issue and by their discursive representation in the media and other public arenas.

Survey data point to a moderate to high degree of awareness of the risks involved in climate change. In the USA, for example, polls have shown relatively high levels of concern with the issue (PIPA, 2003). Still, Americans rank climate change as a low national priority (Dunlap and Saad, 2001, cit. by Leiserowitz, 2004). In public opinion polls in Portugal, most people have said that they were quite worried about climate change (Dunlap, 1998). However, there have been no corresponding behavioural changes in either of these countries.

People’s sense of agency vis-à-vis climate change (and other global environmental problems) may offer part of the explanation for that kind of ‘value-action gap’. Several studies have shown that people feel that they cannot make a difference: any individual

move to avoid greenhouse gas emissions is dwarfed by the scale of the problem. Citizens also feel politically unable to control the risks posed by climate change. People realize that effective action requires coordinated policies and regulations at societal level but feel disempowered in relation to important political spaces and processes. Phillips (2000) offers an important contribution to understanding the role of public representations: '[p]eople's sense of responsibility is limited in its strength by being constituted within a discourse which constructs political action beyond a limited amount of political consumption as belonging to a separate realm to which they have access only via the mass media' (p.171).

As pointed out above, discourses of globalisation also have crucial implications for perceptions of agency insofar as they conceal individual participation in the production of environmental change and responsibility for replacing existing power structures. Engaging citizens in processes of decision-making and implementation of climate protection programmes, through extended citizen juries or panels, is required for successful collective action. Mediated discourses could be reworked to promote a more active environmental citizenship.

So far, the identification and regulation of the problem of climate change has been vastly absorbed into a technocratic project framed by discourses of sustainable development and ecological modernisation. 'The emergence of ecological modernisation was to be seen in the context of the increasing domination of humanity by technology, where technology refers not merely to technical 'artefacts' or machines but to social techniques as well'. (Hajer, 1999: 255) The critique of the culture of industrial progress is missing in the discourse of sustainable development. 'Basic to this culture is an insistent reliance on the idea that problems once recognized and publicly acknowledged, can be handled by the institutions of science, technology and management.' (Hajer and Fischer, 1999: 3)

Governance of climate change has also involved making people feel the 'burden of responsibility' for the problem. In the last few years, environmental regulators and advocacy groups have been campaigning for individual behavioural change with regard to greenhouse gas emissions. By showing the 'little things' that can be done to 'make a difference', these actors try to constitute 'a subject position [for the public] that promises social significance and affirms the importance of a role that anyone can play; you too can

become a person of consequence by simply doing what is designated as desirable.' (Linder, 2003: 6). Promoting alternative forms of consumption or lifestyle, these campaigns appeal to individual freedom and choice, core values of market capitalism, to deal with a collective problem.

There is a paradox in the social construction of technoscience as the solution for environmental degradation and what Phillips (2000) has called the 'democratization of responsibility' (or 'privatization of public problems') whereby individuals are led to feel personal responsibility for solving public problems, such as environmental risks.

Despite having an important role in the dissemination of information regarding environmental problems, the media do not play a clear-cut role in terms of citizen mobilization and/or provide unequivocal clues for action. In a study of Nottingham and Eindhoven, Burgess, Harrison and Filius (1998) concluded that 'there was high environmental awareness but considerable public resistance to adopting pro-environmental behaviours' in both cities. They also found that 'some of the most prominent reasons advanced by residents in failing to act in a responsible manner related to uncertainty and confusion about environmental problems. Much of this confusion stemmed from media framing of the arguments of environmental scientists, conflicting advice being promoted by environmental 'experts', business, and politicians; and the lack of trustworthy sources' (p. 1450).

In a more general way, the role of the media in relation to the environment is also highlighted by Leis and Viola (1995: 33) who note that because of the spread of global media, a large part of the impoverished population who add up to three-fifths of the earth's total 'aspires to adopt the same predatory types of consumptive behaviour as the privileged minority' (one-fifth of the population).

Divided between the belief in forecasts of devastating impacts of climate change and the faith in reassuring reports on the ability of politicians and scientists to solve the problem, the common citizen feels confused and powerless. But set against short-term needs and wants and embedded in a deeply material and mobile civilization, that same citizen prefers a strategy of denial.

6. Conclusions

The management of climate change is by no means restricted to the state apparatuses of control but results from various modes of self- and co-regulation of corporations and individuals.

Foucault's notion of governmentality, introduced in a series of lectures at the Collège de France in 1978, highlights 'the totality of practices, by which one can constitute, define, organize, instrumentalize the strategies which individuals in their liberty can have in regard to each other' (Foucault, 1988: 20). The governance of environmental problems in general, and of climate change in particular, clearly appears to fit this logic.

'As du Gay (2000a: 168) suggests, governmentality 'create[s] a distance between the decisions of formal political institutions and other social actors, conceive[s] of these actors as subjects of responsibility, autonomy and choice, and seek[s] to act upon them through shaping and utilising their freedom'. What is novel about liberal forms of governance is that the personal projects and ambitions of individual actors become enmeshed with, and form alliances with, those of organization authorities and dominant organizations.' (Clegg, 2002)

Governmentality is also a good description of how neo-liberalism works. Exploring individuals' sense of choice, it rules by consensus and not coercion. 'Green governmentality' (Luke, 1995; 1996) operates through techniques of domination and technologies of subjectification. These techniques and technologies penetrate the whole social body and have a global reach.

At a more fundamental level, environmental governmentality relates to the modes of governance of the forces of nature. Modern bio-power is deployed by the means of complex technologies and rational knowledge (Luke, 1997) that harness nature into economic competitiveness.

Crucially, science is an important dimension of this kind of management of global environmental change. The governments of the United States and of the United Kingdom,

amongst many others, have repeatedly presented investment in scientific research as an appropriate policy option to deal with climate change. Although it cannot be a substitute for substantive political measures, science continues to appear as a form of ‘green laundering’ of the state. Also, science and technology are presented as the source of solutions to ‘fix’ the environment while providing economic gains and therefore play an important role in the process of ‘pacification’ of the social body in relation to environmental damage.

These processes of transfer, privatization and/or dissemination of responsibility, across social groups and across space, together with successful semiotic management, led to the political layer being removed from the meaning of climate change. Politics – as ideological discussion and as collective debate and choice – has been successfully erased.

Lipschutz (2002) states that ‘[i]n contrast to my earlier work on global civil society, I have begun to think that most of global civil society—and here I include most NGOs and corporate actors—is deeply imbricated with the private sphere and is political only in a rather impoverished sense.’ Notably, he also points out that this is an expression of ‘how particular forms of society and governmentality are constituted and reconstituted, sometimes through the very agency that, at first glance, appears to be a means of opposition and resistance, if not liberation.’ The extended governmentality of climate change and other environmental problems appears to be a successful power-knowledge project, which has been constructed and reinforced largely away from the public sphere.

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¹ Still, in the last few years there has been a decrease in the space awarded to the sceptics in British newspapers.

² Even in its original form, the Kyoto protocol, the principal regulatory instrument of climate change, would do very little to address the problem. The 5.2% of reduction of emissions it decreed seemed ludicrous next to the 60% abatement the IPCC considers necessary. After almost a decade of political wrangling, the protocol entered into force but is profoundly weakened by the withdrawal of the United States and by the multiple 'flexibility' mechanisms that it allows. Still, very few nations are on course to meet the protocol's targets and most will certainly miss them by a large margin. Moreover, the developing world, so far exempt of any limits, is due to increase emissions of greenhouse gases exponentially in the next few decades.

³ It must be noted, however, that there has been an increasing frequency of pronouncements from scientists and scientific organizations, including the US National Academy of Sciences as well as the academies from Brazil, China and India, urging politicians to act on the reduction of greenhouse gases. Although not providing politicians with a clear limit for greenhouse gas emissions, science clearly indicates the urgent need to reduce them. Still, the capacity of the now widely consensual scientific knowledge on climate change to shape policy-making processes remains limited.

⁴ Most policies continue to be 'supply driven', like the US's National Energy Policy, 'drawn up in the first hundred days of the Bush administration (and directed by Dick Cheney and Colin Powell) (...) responding to a government-projected 32% increase in energy needs over the next 20 years'. (Watts, 2002) American policies are driven by an energy- and resource-intensive model of development that continues to be promoted around the world, including developing countries (see Donan, 2000).

⁵ Indeed, there are crucial ethical matters involved in the science and especially in the politics of the greenhouse effect. The distribution of responsibility in the causation of the problem is profoundly unequal and there will be important inequities in the geography of climate change impacts. Although the main emitters of greenhouse gases are industrialized countries, predictive models indicate that the regions where poorer countries are located will bear the worst effects.

⁶ The governance of climate change is also inexorably dependent on the norms of other 'global' institutions. Green (2005) has shown how WTO's rules, for instance, constrain action on climate change.

⁷ Nevertheless, the UK has been playing a positive role in the international politics of climate change as demonstrated by its recent attempt to engage the G8 with the problem.

⁸ Emphasis in the original.