

A UTOPIAN FAILURE

THE ONE-TONNE CHALLENGE, CLIMATE CHANGE AND CONSUMER CONDUCT

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ABSTRACT

The object of this study is a program of government that has, as its immediate objective, the modification and regulation of consumer conduct deemed pertinent to climate change. Drawing from the analytical grid and conceptual tools of governmentality, this study has organized and analyzed an archive of documents related to the One-Tonne Challenge, a ‘public education’ program implemented by the Government of Canada from 2003 to 2006. There are numerous forms of conduct targeted by this program, involving many of the mundane and routine practices of everyday life. Despite their heterogeneity, the targeted forms of conduct can all be measured and evaluated according to the greenhouse gas (GHG) inventory, an ecological technology of government that has had its application extended to the ‘personal’ level. As consumers increasingly engage in practices that are energy efficient, a ‘low intensity GHG emission lifestyle’ will emerge as a new societal norm, which is declared to be the ‘ultimate strategic objective’ of the program.

The analysis identifies and describes two rationalities of government articulated within the archive of the program. Liberal principles and assumptions regarding the market economy are ascendant in practice; they delimit the range of governmental techniques that can be put into operation by the state. Nevertheless, the objectives and technologies of this program belong to an ecological rationality of government. It problematizes the liberal emphasis on ‘voluntary action’ and advances state planning of the market economy through price formation as a necessary governmental technique with which to manipulate the demand for energy and ensure that consumers become energy-efficient. The conclusion interprets and diagnoses the main dangers that could arise from the radical transformation of the market economy that would be brought about by an ecological political reason.

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On a more personal note, I would like to thank my parents, Ken and Heather, who have greatly contributed to my efforts through their support and encouragement. Lastly, I would like to dedicate this work to Jen: our chance encounter will always be the most memorable experience of my career as a graduate student.

I dream of the intellectual destroyer of evidence and universalities, the one who, in the inertias and constraints of the present, locates and marks the weak points, the openings, the lines of power, who incessantly displaces himself, doesn't know exactly where he is heading nor what he'll think tomorrow because he is too attentive to the present; who, in passing, contributes the raising of the question of knowing whether the revolution is worth it, and what kind (I mean what kind of revolution and what effort), it being understood that they alone who are willing to risk their lives to bring it about can answer the question.

Michel Foucault (1996a[1977]: 225)

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LIST OF ABBREVIATIONS AND ACRONYMS

CCAF	Climate Change Action Fund
DAEC	Departmental Audit and Evaluation Committee
DSF	David Suzuki Foundation
EC	Environment Canada
GHGs	Greenhouse gas emissions
GC	Government of Canada
I & C	Ideology and Consciousness
IPCC	Intergovernmental Panel on Climate Change
Mt	Megatonne (one million tonnes)
NRCan	Natural Resources Canada
OGD	Other Government Departments
OTC	One-tonne Challenge
PCO	Privy Council Office
PEO	Public Education and Outreach
PPP	Purchasing power parity
SSCEENR	Standing Senate Committee on Energy, the Environment and Natural Resources
Tonne	One-thousand kilograms
UNFCCC	United Nations Framework Convention on Climate Change
WCED	World Commission on Environment and Development

PREFACE

- Q. Why should one have access to truth today, to *truth* in the political sense, in other words, in the sense of a political strategy directed against various ‘blockages’ of power in the system of relations?
- M.F. This is indeed a problem. After all, why truth? Why are we concerned with truth, and more so than the care of the self? And why must the care of the self occur only through the concern of the truth? I think we are touching on a fundamental question here, what I would call *the* question for the West: How did it come about that all of Western culture began to revolve around this obligation of truth which has taken a lot of different forms?

[N]othing so far has shown that it is possible to define a strategy outside this concern. It is within the field of obligation to truth that it is possible to move about in one way or another, sometimes with effects of domination which may be linked to structures of truth or institutions entrusted with truth. To greatly simplify matters, there are numerous examples: there has been a whole so-called ecological movement – a very ancient one, by the way, that did not just start in the twentieth century – that was often in opposition, as it were, to a science, or at least, to a technology underwritten by claims to truth. But this same ecology articulated its own discourse of truth: criticism was authorized in the name of a knowledge [*connaissance*] of nature, the balance of life processes, and so on. Thus, one escaped from a domination of truth not by playing a game that was totally different from the game of truth but by playing the same game differently, or playing another game, another hand, with trump cards. I believe that the same holds true in the order of politics; here one can criticize on the basis [...] of the consequences of the state domination caused by an unjustified political situation, but one can only do so by playing a certain game of truth, by showing its consequences, by pointing out that there are other reasonable options, by teaching people what they don’t know about their own situation, their working conditions, their exploitation.

Excerpt from: ‘The Ethics of the Concern of the Self as a Practice of Freedom’, an interview with Michel Foucault, conducted by Becker et al. on Jan. 20, 1984 (cf. Foucault 2003a[1984]).

Foucault’s response to this question is particularly notable in two respects. First, it reflects the main preoccupation of his historical investigations in the final years of his life, consisting of the in-depth study of practico-philosophical guides from the Hellenistic and Greco-Roman period, which provided technical knowledge on the theme of the care of the self (Foucault 2005[1982]: 404, cf. 1988a[1982], 1988b[1984], 1990a[1984], 2001[1983]). Foucault (1983: 231) argued for

the contemporary need to practice ethics without recourse to universals or absolutes; by recognizing in the ancient texts the elaboration of such an ethic, he was not proposing a return to the Sophists or Stoics, but suggesting possible avenues to explore when practicing our freedom. As subtly indicated in the epigraph above, he thought that practicing the care of the self must no longer be subordinated to the concern for the truth, as is customary in modern Western culture.

Second, his response is significant because it is the only known public occasion where Foucault addressed the ecological movement (Darier 1996: 4). He argued that ecology articulates its own truth game. This ecological game of truth is opposed to that of modern science and technology; but, in this respect, ecology is only playing a different truth game: it remains situated and fixed, as all other strategies in the modern West, in the field of obligation to truth. As a result, Foucault certainly did not view the ecological movement as marking a point of rupture, or as a decisive turning point, in the history of the modern West. It would be easy to claim that this is another indication of how this ‘historian of systems of thought’ has become out of date, as Foucault passed away over three decades ago. Or, one might criticize Foucault by claiming that he simply did not attribute enough importance to ecological thought, that he ignored, even in his own time, its growing present-relevance across the modern field of power-knowledge relations.

Ultimately, both claims must be rejected. On the one hand, Foucault did not give in to the temptation, one that is particularly pressing for public intellectuals, to make speculative statements about possible future events. So, even if he believed the ecological movement was going to be a decisive one in the future, he would have probably resisted giving this opinion, such was his intellectual ethic. On the other hand, his studies were always carried out in response to a specific problem that he experienced in his present (cf. Foucault 1991a[1978]: 37). What is arguably *the* contemporary ecological problem, climate change, had yet be widely disseminated

beyond the scientific discourses from which it first arose, so how could Foucault have possibly *experienced* it as a present-relevant problem?

This study will examine how climate change has over the course of the last two decades been rendered into an important and pressing political problem, such that the ecological game of truth is arguably becoming increasingly significant to modern political discourse. According to Barry et al. (1996a), “[e]cological politics seem to be so attractive to many because of the simultaneous demands for action by public authorities and changes in the conduct of private companies and individuals” (1). A central premise of the current work is that there is an emergent ecological rationality of government, one which is becoming increasingly influential in terms of the government of the state, the population, and the individual. It is important to understand how this rationality is articulated, because it is attempting to impose upon *each and all* its statements of truth – i.e. that climate change *is* a problem that requires a transformation in our collective and individual life-conduct. Accordingly, Foucault’s (2005[1982]: 252) analytic grid of governmentality is well suited for present purposes as it is attuned to how government connects the political and ethical domains. This study in governmentality, then, will attempt to diagnose the potential ‘dangers’ that accompany the growing influence of this ecological truth game, as it posits universal problems and solutions according to which we will be governed.¹ One first needs to question how one is governed, in order to be able to critique and modify this relationship of power. By way of this rigorous questioning, this study intends to serve as the empirical basis for a rational critique of ecological government.

¹ The use of the term ‘danger’ could understandably carry with it certain unwanted presuppositions, especially when employed in relation to diagnosis. That is, it gives a sense of an objective threat, when interpretation is an integral part of diagnosis; but at the same time, this interpretative diagnosis is not entirely subjective either. According to Dreyfus and Rabinow (1983), “[t]he resulting interpretation is neither a subjective invention nor an objective description, but it is an act of imagination, analysis, and commitment” (253).

INTRODUCTION: CRIMINOLOGICAL ORIGINS

For the most part, studies in governmentality are considered interdisciplinary. In an attempt to situate them in relation to the conventional boundaries of the academic disciplines, it is perhaps best to consider this type of study and its collected programmatic-theoretical (cf. Dean 1999; Rose 1999) as well as empirical works (cf. Barry et al. 1996b; Burchell et al. 1991; Dean 1991, 2007; Foucault 2007[1978], 2008[1979]; Miller and Rose 2008a; Rabinow 1989; Rutherford 1999; Walters 1994) “as forming a new sub-discipline within the social sciences and humanities” (Dean 1999: 2). Although the present empirical study will hopefully find its place in this interdisciplinary sub-discipline, its origin ultimately belongs with another emergent and eclectic one, that of ‘green criminology’ (cf. Lynch 1990; Lynch and Stretesky 2003, 2006).² In tandem with the discipline of criminology as a whole, green criminology is a fragmented field of inquiry (cf. Ericson and Carriere 1994). Apart from having ‘environmental harm’ as its principal object of study, green criminology cannot be pegged to a single theoretical framework or methodological approach (cf. Beirne and South 2007: xiv; Halsey 2004a; South 1998: 212).

Nevertheless, there are two principal competing theoretical frameworks in green criminology: radical green and liberal ecology. They are diametrically opposed on the issue of the ecological sustainability of the capitalist market economy. Radical green criminologists draw from James O’Connor’s (1998) eco-Marxist notion of the second contradiction of capitalism,

² The very identification of this sub-discipline as ‘green criminology’ could invite criticism, since liberal ecologists considered under this label do not use it and, for those who do, there is a corresponding critical emancipatory political agenda (Halsey 2004: 835; Lynch 1990; Lynch and Stretesky, 2003: 231, 2007: 252). On account of this, I would have preferred to identify the study of environmental harm with ‘environmental criminology’ (cf. Groombridge 1998: 264; White 2002, 2007). The use of this term, however, could generate some confusion as another sub-discipline in criminology already employs it as an identifier. This ‘environmental criminology’ does not address the natural environment. Rather, it is concerned with ‘the relationship between place, crime and offending’ (Bottoms 1994: 586; cf. Brantingham and Brantingham 1991). Groombridge (1998: 251-2) challenges the identification of this object of study with ‘environmental criminology’, noting that this particular field of inquiry would be more properly referred to as ‘topographical criminology’.

which maintains that the logic of infinite growth is irreconcilable with the finite resources of the planet. Since environmental harm is regarded as the outcome of systemic processes inherent to the capitalist mode of production, radical green criminologists articulate an emancipatory agenda, proposing fundamentally transformative political and economic structures that would be better aligned with universal human interests and the principles of social and ecological justice (cf. Benton 1998: 171, 2007; Halsey and White 1998: 347; Lynch 1990: 5; Lynch and Stretesky 2003: 231; White 2002: 99, 2003: 494, 2007: 43). Despite their utopian ideals and emancipatory programs, radical green criminologists do not tend towards philosophical anarchism. Whereas critical criminology is commonly identified with the project of withering the state and its totalizing programs, radical green criminologists consistently argue for greater state regulation and legislation of environmental harm tied to capitalist exploitation and development (Halsey 2004a: 839; cf. South 1998: 216-8; White 2007: 36).

Criminologists working from the theoretical framework of liberal ecology reject the view that the capitalist market economy is inexorably linked with compounding environmental problems. According to liberal ecologists, although market failures often result in unacceptable instances of environmental harm, these are only indications of inefficiencies that can be recuperated through the introduction of corrective market mechanisms and the improved environmental governance of the capitalist enterprise (cf. Grabosky 1994: 420, 1995: 538; Gunningham and Grabosky 1998; Gunningham et al. 1999: 211). So, in contrast with the utopianism of radical green criminology, liberal ecologists advance their project as “self-consciously pragmatic” (Grabosky 1994: 443n). It seeks to give direction and form to the emergent ‘collaborative’ model of governance, wherein capitalist enterprises will regulate themselves autonomously, and the state will provide the necessary administrative and regulatory

structures to ensure continued corporate accountability and transparency to the community (Gunningham et al. 1999: 218, 2007). In this way, liberal ecologists do not subscribe to *neo-liberalism*, which maintains that the mechanisms of competition in the free market economy will provide the solution to excessive environmental harm as a result of the inevitable “entrepreneurial inclination to profit from environmentalism” (Grabosky 1994: 420; cf. Gunningham et al. 1999: 222). Liberal ecologists recognize “the dangers of de-regulation” (Gunningham et al. 1999: 222). In the event of market failure, the state must be capable of the appropriate regulatory intervention (Grabosky 1995: 538; Gunningham et al. 1999: 220). For this intervention to be effective in ensuring compliance, however, the state must always respect the processes of collaborative governance outlined by liberal ecologists, who can then properly think of themselves as “bargaining in the shadow of hierarchy” (Gunningham 2007: 5; cf. South 1998: 221).

Having provided a broad outline of the two central theoretical frameworks in green criminology, it is admittedly difficult to situate the present study in relation to either of them. Both offer contrasting criticisms of the capitalist market economy and advance divergent principles, methods, and objectives – in a word, programs – through which to address the problem of environmental harm. Since there are no absolute standards through which to compare and evaluate them, declaring this study to be aligned with either the radical green or the liberal ecological would result in an arbitrary exclusion at the programmatic-theoretico level, one that would probably be unable to mask its original political orientation and sympathies. This difficulty could perhaps be overcome by ascribing to the post-structuralist critique elaborated by Mark Halsey (2004a), who argues for the need to abandon the theoretical knowledge of green criminology altogether, on account of its “modernist conceptions of harm and reparation” (835).

As this is a critique and not simply a criticism,³ the positive contribution made by Halsey's (cf. 2004a: 845-50, 2004b, 2006) more recent work draws from the philosophical vocabulary of Gilles Deleuze and Felix Guattari, which problematizes "ecological damage" in a way that does not succumb to the common fallacies of modernist thought with "its essentializing conception of history, politics, society and the transcendental subject, its teleological search for origins or causes, and its utopian solutions to the problem of modernity" (Carrington 1994: 263 cited in Halsey 2004a: 834fn). When considered overall, Halsey's provocative challenge to green criminology has undoubtedly moved the sub-discipline "in a direction largely unexplored by others" (South and Beirne 2006: xxv). Still, however innovative and noble an intellectual pursuit, it is not one that will be exactly followed in the course of this work.

Such a move would be unique if not entirely inconsistent: studies in governmentality generally do not seek to transform thought by positing an alternative politico-philosophical vocabulary that is radically Other. Indeed, studies in governmentality generally do not place as much emphasis upon the discursive as is the case with the "post-structuralist playfulness" characteristic of Halsey's work, to borrow a phrase (Barry et al. 1996a: 5). Instead, this study is concerned with how 'ecological' problems become implicated in the rational exercise of government, as they occur in both the discursive and non-discursive domains. In this way, it is a complete reversal of the field of inquiry of green criminology, which is a "sensitizing perspective" (South 1998: 212) that encourages criminologists to take into consideration the forms of everyday and exceptional environmental harm that result from human conduct and the macro-sociological processes to which it is reciprocally linked (Beirne and South 2007: xiv).

³ 'Criticism' and 'critique' will be used throughout this study as separate terms. They are made distinct in that criticism is solely negative: it consists of the discursive problematization of an object or practice. When criticism is complemented by proposed solutions, it becomes positive, in the technical sense, and will be referred to as critique.

In reversing this field of inquiry, the present study will sensitize criminologists to the processes through which the government of everyday and exceptional forms of human conduct is the result of the problematization and definition of objects by various theoretical knowledges such as green criminology: environmental harm and degradation, air, water, and soil pollution, and, what is most important for the present work, climate change. For their part, green criminologists have often been quite reflexive when elaborating definitions of environmental harm, accepting that what they construct is inescapably tied to modern social and political thought (cf. Lynch and Stretesky 2003: 228). However, regardless of the theoretical framework assumed, green criminologists generally do not reflect on the possible practical effects of their normative and prescriptive ideas as they address ecological problems, specifically in terms of how these ideas are imbricated with the practice of government, discursive and otherwise.

Contents and organization

The reversal of the field inquiry of green criminology thus serves as the point of departure for the present study in governmentality. Green criminology, as a theoretical knowledge with practical effects, will perhaps stand to benefit in terms of its ability to formulate an influential and cohesive political strategy, from the empirical findings obtained through this type of study, one which attempts to map the complex correlative relations between knowledge and power (cf. Dreyfus and Rabinow 1983: 203; Foucault 1980a, 1988b[1983]: 43, 1997a[1978]: 60-1). Further discussion concerning how this type of study is related to the sub-discipline of green criminology will be briefly taken up again in the conclusion.

Prior to that, it is first necessary to explain how this type of study is structured in order to be able to proceed with the empirical analysis of the archive of the One-Tonne Challenge, the program of government that is the central object of this study (cf. Appendix A). To this end, the

first section of the opening chapter will provide an exposition of Foucault's (1980b[1977]: 199) "analytic of relations of power" and will situate and explain the modality of power known as 'government' in relation to 'strategic games between liberties' and 'states of domination'. Foucault (cf. 1983a[1982]: 221) would define government as the "conduct of conduct" (Gordon 1987: 296, 1991: 2). This formulation of government is meant to be broad as it is supposed to connect the political and ethical domains, without reducing one to the other. The second half of the first chapter elaborates upon a morphology of government, comprised of the analytic grid of governmentality and its conceptual tools.

Despite offering an arsenal of analytical devices through which to render the practices of government intelligible, studies in governmentality have recently been criticized for lacking methodological rigour (cf. Frauley 2007: 621; Kerr 1999: 176). The second chapter of this study will detail the epistemological perspective and methodological approach underpinning studies in governmentality. These are respectively known as irrealist empiricism and interpretative analytics. By making the epistemological assumptions and methodological principles informing analysis clear, this chapter not only attempts to respond to methodological criticism but also aims to make a modest contribution to subsequent studies in governmentality, beyond the empirical findings that will be obtained through analysis.

The remaining chapters of this study will consist of the empirical analysis, beginning in the third chapter, with the genealogy of the problematization of climate change (cf. Appendix B). The discussion in this chapter will demonstrate that climate change was problematized through the articulation of the notion of sustainable development and its subsequent practical application (cf. WCED 1987). Sustainable development is argued to be an important normative principle for an emergent ecological rationality of government. By making future needs a concern in the

present, sustainable development contributed to making climate change into a problem requiring immediate governmental solutions. Indeed, in the late 1980s and early 1990s, scientific knowledge concerning climate change had yet to become paradigmatic, so the fact that nation-states were signing on to international treaties that implied their acceptance of this problem is an important event for this ecological rationality, which was arguably becoming more influential as a game of truth about how to best practice government. Further, this art of government was becoming more coherent and effective as it would be coupled with the technology of the greenhouse gas inventory, where global and national emission levels could be measured, compared, and evaluated (cf. Appendix C).

As evinced in the analysis of the Government of Canada's (2000, 2002, 2005) '*comprehensive*' climate change plans, this technology of government would have its application gradually extended.⁴ Initially, it would be deployed to compile inventories of the greenhouse gas emissions of the different sectors of the Canadian economy (cf. GC 2000: 4). In the fourth chapter, through the archaeological analysis of the key programmatic statements of the One-Tonne Challenge, it will be shown that this ecological technology has been further extended to compile a greenhouse gas inventory of the population, as measurements were to be made concerning the "*sources of personal GHG emissions in Canada*" (GC 2002: 45; cf. Table 4.1). However, this measurement only applies to the "*average*" Canadian, who is "*responsible*" for approximately 5.4 tonnes of greenhouse gas emissions per year (GC 2002: 12). These emissions are viewed to largely result from the consumption of energy – a collective practice, the modification and regulation of which targets a range of everyday, mundane actions to be taken at

⁴ All direct references from the documents of the archive will be italicized; this is a stylistic device intended to draw attention to the archive material. When emphasis has been used in the original document, the referenced material will be put in bold-italics.

home, at work, and on the road (cf. GC 2004; Appendix D). In order to ensure that consumers attain greater energy-efficiency, the specific actions prescribed by the “*energy-diet*” (SSCENR 2004: iv) outlined in the technical guides of the One-Tonne Challenge must become widespread among the population. Once “*the low-intensity GHG lifestyle becomes a societal norm for Canadians*” (DAED 2006: 36; cf. Appendix E), it is expected the program would “*collectively generate 5 Mt in incremental reductions annually over the 2008-2012 period*” (GC 2005: 28).

Given the prevalence of ecological principles, objectives, and technologies, the One-Tonne Challenge would presumably be regarded as an exercise in ecological government. However, the discussion in fifth chapter will indicate a tension in the archive of the program, one which is particularly evident in those formal documents that review (SSCEENR) and evaluate the One-Tonne Challenge (DAEC 2006). The first section of this chapter will describe what can be considered an ecological critique of liberal government. This critique problematizes the liberal premise of governing through “*voluntary action*” (DSF 2004; SSCEENR 2004a: 3, 11). Educating the population about ecological problems is insufficient for the government of consumer conduct; the One-Tonne Challenge needs to be complemented by additional government programs that will more effectively regulate the consumption of energy. Ecological critique maintains that, left on its own, the One-Tonne Challenge will surely continue to be a “*failure*” (SSCEENR 2004b); it will remain a program that does not produce the desired effects and outcomes i.e. modifications in personal conduct and reductions in greenhouse gas emissions. According to this critique, nothing less than state planning of the market economy will ensure that the population becomes more sustainable in its energy consumption and decreases its greenhouse gas emissions. So, when articulated as a political rationality, ecological government would have the state calculate the price of energy, such that the “*true*” environmental and

economic costs can be factored into what would then become the “*real*” price of energy (cf. SSCEENR 2004a: 9-13).

The second section of the fifth chapter will carry out an analysis of the formal audit and evaluation of the One-Tonne Challenge. It is in this document that the tension between the liberal and ecological arts of government becomes most apparent. Ecological critique continues to be articulated: the audit and evaluation repeats the need to complement programs of ecological education with “*incentives and regulations*” (DAEC 2006: 18), though it does not proceed to specify what these government techniques would entail. Nevertheless, the audit and evaluation advances the One-Tonne Challenge as an integral component in the “*market transformation equation*” (DAEC 2006: 2), a notion which could be open to two fundamentally different interpretations, depending on the rationality. The audit and evaluation considered market transformation to be already in effect with the implementation of the One-Tonne Challenge, which would be framed as a public education program instead of a emission mitigation one (DAEC 2006: 16). By considering the One-Tonne Challenge to be a public education program that is an integral part of the market transformation equation, it will be argued that the audit and evaluation treated the program as a liberal exercise in government. The ecological interpretation of this program and market transformation will be discussed in the third section.

The study intends to grasp are the political and ethical stakes for the governed subjects constituted in the program. Thus, the conclusion will be oriented to diagnosing the main political and ethical dangers that arise from the rationalities and technologies of government that are discussed throughout this study, where this critical task is only intended to encourage future dialogue and debate concerning whether resistance is necessary in the face of these dangers, and the potential forms of counter-conduct that such practices of resistance might entail.

CHAPTER ONE: OPENING FOUCAULT'S CONCEPTUAL TOOLBOX

In a conversation between Deleuze and Foucault (1996a[1972]), the two French thinkers expressed complementary views regarding the prevalent bifurcation of theory and practice. Foucault (1996a[1972]) suggested that “theory does not express, translate, or serve to apply practice: it is practice” (75). Deleuze (1996a[1972]: 76) immediately responded by proposing the analogy of theory as tool-box, where the concepts advanced by theory should function according to a specified purpose. In the proceeding discussion concerning the analytic grid of power relations and governmentality, this chapter will suggest that Foucault (cf. 1980c[1977]: 145, 1996c[1975]: 149) and those building from his project are working along the lines indicated by Deleuze's analogy, offering conceptual tools instead of theoretical axioms for their objects of study (cf. Barry et al. 1996a: 4; Rose et al. 2006: 100).⁵ For example, Foucault (1980b[1977]: 199, 1988b[1983]: 38, 1997a[1978]: 66) was quite explicit that he did not intend to construct a theory of power which sought to uncover its fundamental essence or principles (cf. Deleuze 1988: 27). Rather, he proposed an entirely different approach to the study of power, one which is attuned to understanding *how* power is exercised in a relationship with oneself and others i.e. “where it installs itself and produces its real effects” (Foucault 1980d[1976]: 97, cf. 1983b[1982]: 216, 1991a[1978]: 148-9).

The shift from theorizing about power to analyzing it as a practice is a significant one. Indeed, as Barry Hindess (1996a: 142) has argued in *Discourses on Power*, Foucault's approach to power represents a radical departure from prior attempts at theorization, from the mid-

⁵ As explained by Foucault (1996c[1975]): “All my books [...] are, if you like, little tool boxes. If people want to open them, use a particular sentence, idea, or analysis like a screwdriver or wrench in order to short-circuit, disqualify or break up the systems of power, including eventually the very ones from which my books have issued... well, all the better!” (149).

sixteenth century social contract theory of Thomas Hobbes through to the late twentieth century critical theory of Jürgen Habermas. The first section of this chapter will further expand on this argument by initially noting Foucault's criticisms of juridical and Marxist theories of power; in the process, it will clarify his purpose for advancing an analytics of power relations. This section will conclude with a discussion of Foucault's modalities of power relations, through which the conceptualization of government as the "conduct of conduct" will be introduced (cf. Gordon 1987: 296, 1991: 2). The second section will proceed to elaborate on how the analytics of power relations has been made even more precise through the notion of governmentality, which, in the context of this study, can be understood as the analytical grid that renders the practices of government intelligible. The practices explained through this analytic grid are primarily, though not exclusively, discursive: programs are examined in order to understand how they assemble and deploy various rationalities and technologies of government. Programs, rationalities, techniques, and technologies are the corresponding conceptual tools for the study of governmentality. The exposition of these conceptual tools will occupy the remainder of the chapter, which will conclude with a discussion of the purpose for undertaking a study of governmentality, specifically in terms of how these tools are necessary for analysis to become tactically effective.

The analytic of power relations

At the outset, it is important to note that, regarding his conception of power, Foucault was anything but consistent throughout his work.⁶ These inconsistencies attest to the fecundity of

⁶ As Foucault (1980e[1977]: 114) explains, his earlier works such as *Madness and Civilization* and *The Birth of the Clinic* did not even explicitly address the question of power. When this was no longer the case, Foucault (1980d[1976]: 92, 1980e[1977]: 119, 1980f[1977]: 183-4) admits that his works initially relied upon the

Foucault's (cf. 1980d[1976]: 92, 1991b[1977]: 74) thought and his willingness to experiment with different conceptual frameworks, only to later abandon them. Indeed, in his later works especially, Foucault (1983b[1982]: 216-7) considered relinquishing the concept of power altogether on account of its lack of utility (cf. Hindess 1996a: 100). Despite the difficulties that he would encounter when developing the notion, Foucault would come to offer a conceptualization of power that radically departs from modern political theory and successfully overcomes many of its conceptual slippages (Hindess 1996a: 143). To begin with, this section will further substantiate this argument by briefly noting Foucault's criticisms of juridical and Marxist theories of power. Following this, it will commence its exposition of Foucault's analytical tools by discussing the modalities of power, which attempt to demarcate the indefinite and dynamic field of power relations.

The economisms of power in modern political theory

What would prompt Foucault to so radically depart from conventional notions of power that are found throughout modern political theory? For Foucault (1983b[1982]: 216, 1991a[1979]: 149), existing theories of power have proved inadequate because they treat power as if it always already exists; such reification no longer prompts analysis to develop an explanation regarding *how* power is exercised at the specific points of its application. Instead, power functions according to deterministic 'economisms' in juridical and Marxist theories

conventional repressive and negative model of power that he would eventually distance himself from, in favour of one that primarily considers the productive and positive aspects of power, which he would adopt beginning with *Discipline and Punish* (1995[1975]). Despite having appropriated this latter performative model, Foucault's conceptualization of power underwent several substantial changes and revisions even from *Discipline and Punish* to the first volume of the *History of Sexuality* series (cf. Hindess 1996a: 98). With the subsequent volumes in the *History of Sexuality*, there are several more important shifts in Foucault's understanding of power, as he increasingly focused on how power is exercised in a relationship with oneself through the processes of subjectification in Greek and Roman antiquity (cf. Dreyfus and Rabinow 1983: 253-4; Patton 1989: 274). Given these constant reformulations, one might agree with the astute observation made by Deleuze concerning Foucault's remarkable "speed of thought" (quoted in Gros 2005: 517).

(Foucault 1980d[1976]: 88). Prior to entering a discussion of these theories, it is important to note that Foucault (1983b[1982]) is using ‘economy’ not only in its modern, but also in its “theoretical and practical sense” (210), that is, as a principled method for managing the complex question of power.

Turning first to the juridical conception, power is ambiguously both treated as a commodity to be possessed and exchanged, as well as a right to be exercised by a select few over the consenting masses – power as a capacity that is exerted over (Foucault 1983b[1982]:217). In this way, political sovereignty can be established and legitimated through “cession or contract”, which necessarily involves an exchange (cf. Foucault 1980d[1976]: 103-4). For example, the liberties of the individual are exchanged and, to some extent surrendered, for the security guaranteed by the state (Foucault 1980d[1976]: 88). In turn, the state comes to be the sole possessor of legitimate power; it maintains the “absolute and perpetual power of a commonwealth” (Bodin 1576 quoted in Dean 2007: 139). Social contract theorists, such as Hobbes and Jean-Jacques Rousseau, expounded the founding principles of political sovereignty on the basis of the juridical conception of power (Foucault 1991c[1978]: 98). By viewing power as a commodity to be possessed and exchanged, however, juridical theories could not account for how political power is exercised outside of the state apparatus, a trenchant criticism levelled by governmentality studies (Rose and Miller 2008[1992]: 53-4).

For most Marxist conceptions of power, economy is also implicated, except in a different fashion. That is, power becomes a derivative function of the relations of production and class domination, which are structured according to the prevailing mode of production of *the* economy (Foucault 1980d[1976]: 88, 1997b[1981]: 134). The exercise of power is always in some way related to the broader theoretical questions of economic exploitation and class struggle inherent

to capitalism. This is particularly apparent in Marxist theories of state, which reduce the state to “the reproduction of relations of production” (Foucault 1991c[1978]: 103).⁷ Ultimately, both Marxist and juridical theories of power, instead of attending to practical questions concerning how power is exercised in a relationship, seek to understand the ontological and metaphysical problems surrounding power: what it is, where does it come from, who holds it, what are their intentions, what makes this power legitimate or illegitimate, and so on (cf. Dean 1994: 155; Foucault 1980d[1976]: 97, 1983b[1982]: 217). Because of such “labyrinthine and unanswerable” concerns, to borrow a phrase from Foucault (1980d[1976]: 97), these theories of power have not developed the necessary tools with which to analyze the myriad of power relations – an endeavour that Foucault (1983b[1982]: 209, 1990b[1976]: 82) subsequently undertook, and to which the discussion will now proceed.

Towards a new economy of power relations

In light of the discussion above, it needs to be emphasized that Foucault (cf. 1980f[1977]: 188, 1983b[1982]: 217) was not necessarily supplanting juridical and Marxist theories of power with one of his own invention: these theories might still have some pertinence and utility e.g. technologies of production are such that economic exploitation, as a state of domination, still

⁷ An important exception to this can be found in the Marxist theory of state elaborated by Nicos Poulantzas (1979[1978]), particularly in his last published work, *State, Power, Socialism*. Poulantzas avoided the economic reductionism characteristic of Marxist theorizing by explicitly drawing from Foucauldian themes. That is, proceeding from what he termed “the relational theory of power”, Poulantzas (1979[1978]: 128-9) approached the state as a social relation, where class struggle is inscribed in capitalist state forms within and through the state apparatus. Unfortunately, it does not appear that Foucault explicitly addressed the work of Poulantzas (cf. Jessop 1990: 223, 246n). Indeed, during his initial formulations of governmentality, Foucault (2008[1979]) made his position clear: “I must do without a theory of the state, as one can and must forgo an indigestible meal” (77). The pressing question that arises from all of this is: does Foucault’s elaboration of the analytic grid of governmentality delimit *any* possibility for further dialogue with Poulantzas? Put more generally: are studies in governmentality incompatible with state theory, as Foucault’s remark above seems to suggest? To my knowledge, this question has yet to be given any serious assessment. In his essay comparing the two thinkers, Jessop (1990: 222) only acknowledges Foucault’s development of the analytic grid of governmentality but does not assess whether there were any important points of convergence with the state theory of Poulantzas.

persists in many contemporary capitalist societies, offering important avenues of investigation for Marxist theory and analysis (cf. Foucault 1983b[1982]: 213). In focusing their efforts on ascertaining the essence of power, however, both these theories always fail to account for *how* power is exercised in a relationship (cf. Foucault 1991a[1978]: 149). To put it differently, they entirely neglect the practice of power, as an “action upon an action, on existing actions or on those which may arise in the present or the future” (Foucault 1983b[1982]: 220). As Foucault (1980d[1976]: 99-100, 1983b[1982]: 224, 1997b[1981]: 134, 2008[1979]: 186) would proceed to explain, there is no underlying principle or foundational nature that determines, accounts for, or can be deduced from the heteromorphic field of possible actions upon actions, that is, power relations. So, rather than proposing a theory that attempts to grasp the essence of power, Foucault (1983b[1982]: 210, cf. 1988b[1983]: 38, 1996d[1978]: 259) intends to develop a “new economy of power relations”, one that acknowledges the myriad of power relations as heterogeneous and multiform; and, on the basis of this understanding, he proceeds to offer the conceptual tools through which to analyze them.

At present, there remain a couple of preliminary remarks to be made about Foucault’s broad conceptualization of power, before proceeding to a discussion of his modalities of power, which serve as the typology of the field of power relations. To begin with, there are two necessary conditions required for the emergence of a relationship of power, that is, for an action to take place upon an action (cf. Foucault 1983b[1982]: 220-1). First, there must be an ‘other’, whether it is the subject acting on its own conduct or on the conduct of others.⁸ Second, the

⁸ At first glance, the ability of the subject to exercise power in relation to itself may be called into question. It might be maintained that a subject can only exercise power in a relationship of exteriority. Such a view is unnecessarily restrictive. In an interview, Foucault (2003a[1984]: 33) helps clarify this point, for he understood the subject to be a form instead of a substance. Whereas the latter might be posited as having essential or fixed qualities, the subject-form can assume different relationships to itself: it is malleable and dynamic. Because of this, the subject “is not

freedom of the subject is always already presupposed i.e. its ability to decide upon and ultimately undertake a course of action from an indefinite field of possibilities. This is not a metaphysical, but a positive and practical freedom (cf. Foucault 2003a[1984]: 34; Patton 1989).⁹ When considered together, the two necessary preconditions of power relations provide an insight into Foucault's "thin" conception of the subject: "a being endowed with certain capacities or possibilities for action and subjected to power relations" (Patton 1998: 66; cf. Foucault 1983b[1982]: 130).

Subjects are thus free but are always implicated in power relations, which can then be understood as a "ubiquitous feature of human interaction" (Hindess 1996a: 100; cf. Foucault 1988c[1983]: 168, 2003a[1984]: 34). Indeed, for Foucault (1983b[1982]), "[a] society without power relations can only be an abstraction" (220-1, cf. 2003a[1984]: 40). This radical view would be challenged by his detractors and critics, but I shall not take up their arguments here (cf. Habermas 1987; Rorty 1992: 330; Taylor 1986).¹⁰ Rather, the discussion will now be directed

primarily or always identical to itself" (2003a[1984]: 33). In the activity of thought, the subject can posit itself as an 'other' so that it may then act upon its own actions, thereby exercising power in relation with itself (cf. Deleuze 1988: 100).

⁹ Paul Patton (1989) maintains that the conception of freedom that Foucault's analytic of power relations rests upon is a positive one. While the limits of negative freedom consist in the imposition of external constraints on the actions of the subject, the limits of positive freedom consist in the imposition of internal constraints on the actions of the subject (Patton 1989: 262). Through this understanding, the productivity of power affects the positive freedoms of the subject through the articulation of subject-positions or identities, which will come to be assumed or imposed on the subject (Patton 1989: 265). When the subject freely chooses its identity, Foucault (1983a: 240-1) refers to this process of self-formation as the "*mode d'assujettissement*", which Paul Rabinow (1984) has since termed "subjectification" (11). Subjectification entails a government of individuality, that of the subject and its notion of self. The imposition of an identity on the subject, what is referred to as "*subjectivation*", however, concerns a government through the processes of individualization, which Foucault (1983a[1982]: 216) argues to be increasingly linked to the institutions of the state in modern Western societies (cf. Patton 1989: 265). Foucault's (cf. 1983a[1982]: 214-5) argument concerning the expanded scope and importance of individualization is considerably elaborated upon in his genealogy of pastoral power and the welfare state.

¹⁰ To take a notable example, Jürgen Habermas (1987), a staunch critic of Foucault, maintains a conventional notion of power and, from this conceptual position, proceeds to criticize Foucault's more analytically oriented understanding for its detachment from criticism. To be more precise, whereas Foucault identifies freedom as a necessary condition for *all* modalities of power relations, Habermas holds that the exercise of power precludes

towards giving an explanation of the conceptual tools that Foucault developed for his analytic of power relations. To begin with, it will first address the ‘modalities of power’ offered by Foucault (2003a[1984]: 41): strategic games between liberties, states of domination, and modes of government (cf. Hindess 1996a: 99). As mentioned before, these modalities, when taken together, provide a typology of the field of power relations, so it is helpful to distinguish government from the other two modalities of power, as the former provides the basis for Foucault’s work on governmentality (cf. Dean 2007: 84; Senellart 2007: 388-9).

The modalities of power

Of the three modalities of power that will be discussed, perhaps the most pervasive and mundane is that which Foucault refers to as “strategic games between liberties” (2003a[1984]: 40). The term itself already implies that, in Foucault’s account, “there is an intimate relationship between power and liberty” (Hindess 1996a: 99). When power is exercised among subjects who are at complete liberty, the resulting relationship will be mobile, unstable, and reversible (Foucault 2003a[1984]: 34). Thus, strategic games between liberties can be viewed as relatively spontaneous and ambiguous, as well as involving visceral, existential considerations on the part of the subjects involved concerning their exercise of freedom in a particular situation. In this way, these power relations are multiform, consisting of, to name only a few instances: “[d]ialogue, conversations, friendship, intimate relationships” (Dean 2007: 9). “For example, the fact that I may be older than you, and that you may initially have been intimidated, may be turned around during the course of our conversation, and I may end up being intimidated before someone precisely because he is younger than I am” (Foucault 2003a[1984]: 34). From this, the

freedom, for power is the *capacity* to determine the behaviour of others according to an instrumental rationality working from within its own decipherable logic. Furthermore, when considering that freedom is absent where there is power, Habermas (1987: 276-84) can justify his efforts towards developing universal normative criteria through which to liberate the human subject, oppressed as it is by the prevalence of power in modern society.

exercise of power in strategic games between liberties might be best described as a ‘power between’ or, to use a neologism of Foucault’s (1983b[1982]), an “‘agonism’ – of a relationship which is at the same time reciprocal incitation and struggle; less of a face-to-face confrontation that paralyzes both sides than a permanent provocation” (222). When considered overall, strategic games between liberties preclude the attempt to structure the field of possible actions through prior acts of calculation, thereby marking a key distinction between this modality of power and modes of government, to which the discussion will return to momentarily (cf. Hindess 1996a: 106).

At present, it is necessary to turn to the modality of power that largely encompasses conventional understandings of power (Foucault 2003a[1984]: 40). Discussions on sovereign power, for instance, can be linked with states of domination because “subjects are bound to do certain things [...] [through] the use of deductive and coercive powers of taxation, of systems of punishment, detention, expulsion and disqualification” (Dean 2007: 95). For a state of domination, power relations are relatively asymmetrical and fixed. According to Peter Miller (1987), “[i]t is a mode of acting upon individuals or groups of individuals directly counter to their aspirations or demands” (2). Regardless of the particular position that they occupy, those subjected to a state of domination retain their freedom, understood here in the positive sense (Foucault 2003a[1984]: 27). However, the field of possibilities for the free subjects, *over* whom power is exercised, is limited and, at times, rather extreme – Foucault (2003a[1984]: 34-5) gives the examples of murder, deception, and suicide as possible choices that the subject enduring a state of domination might decide to take action upon. So, within this modality of power, the positive liberties of the subject are at an absolute minimum as choice is heavily weighted in

favour of complying with taking those actions that perpetuate the state of domination (Foucault 2003a[1984]: 35; cf. Hindess 1996a: 102-3).

Throughout much of his work, Foucault's discussions on this modality of power are somewhat problematic. Especially when distinguishing states of domination from strategic games between liberties, Foucault's conceptualization of power relations are imbued with a normative dimension, as Hindess (1996a: 153-8) and Mitchell Dean (1999: 35) crucially point out. This occurs despite Foucault's (2003b[1984]: 26) overarching concern to avoid assuming any totalizing normative posture, to the extent of refusing to be committed to any sort of emancipatory ideal (cf. Dreyfus and Rabinow 1986: 114-5; Hindess 1998: 54; Patton 1998: 69; Rabinow 1984: 4-6; Rorty 1992: 332-3; Veyne 1992: 342). However, when posing domination as a condition to be minimized in favour of games between liberties, Foucault (cf. 1991a[1978]: 174; 2003a[1984]: 40), in his later work, is doing just that: conceptualizing domination in such a way that it becomes a condition to be inherently opposed when, as Hindess (1996a: 154-5) observes, "heteronomy" may be necessary to some extent in order to make social existence, and the liberty that this facilitates, possible.¹¹ Thus, in order to sustain a rigorous empiricism when undertaking analysis, it is important to depart from Foucault in this respect by *not* rejecting domination outright, for it is like all other modalities of power: states of domination can be positive and productive as well – the task for analysis is to figure out how (Dean 1999: 35-6).

¹¹ Hindess (1996b) elaborates on the argument concerning the positivity of heteronomy in his discussion on the fundamental ambiguity surrounding the notion of autonomy in liberal discourses on government. While it is often taken to refer to the ensemble of responsible and rational autonomous individuals in the community, one that is to be respected by limiting government to the greatest extent possible, Hindess (1996b: 66) argues that autonomy is also often treated in liberal discourse as an objective to which government must be directed: individual autonomy needs to be *produced* by government through the structuring of social and economic conditions. According to Hindess (1996b), "[o]nce autonomy can be represented in this second way, as the product of particular conditions, then it can also be seen as heteronomy, as a state in which individuals' decisions and actions are subject to determinations that lie beyond their control – that is, as a negation of real autonomy" (75).

Still to be discussed, the remaining modality of power, government, is undoubtedly the most pertinent to the present study. Furthermore, of the three modalities of power covered in this section, Foucault tended to emphasize government the most, up to the point that Hindess (1996a: 99) argued that it is gradually substituted for ‘power’ in Foucault’s (cf. 1983b[1982]: 221) later work. Perhaps, government is given this importance because of its position *between* the other two modalities of power (Foucault 2003a[1984]: 40-1). While it is often taken to be synonymous with the state, as in discussions about *the* government, Foucault (2008[1978]: 120-1, cf. 1983b[1982]: 221, 1991a[1978]: 177, 1991c[1978]: 87) reveals, from his investigations into the aetiology of the term, that its usage was previously much broader than it is now (cf. Hindess 1996a: 111). That is, as opposed to having only its narrow modern political usage, government, prior to seventeenth century, was applied to religious, pedagogical, familial, and other moral contexts (Foucault 2008[1978]: 121; cf. Burchell 1996: 19; Dean 1994: 176). Thus, in order to be properly situated within his analytic of power relations, Foucault (2003b[1982]: 138) would “reactivate” these early modern notions of government (cf. Dean 1994: 176). This served to broaden its range of possible application. While doing so, Foucault also needed to ensure that government was distinct at a conceptual level, such that there was no overlap with the other two modalities of power. He managed to accomplish both of these tasks by designating government as the “conduct of conduct” (Foucault 1983b[1982]: 221).

It is important to note that Foucault is employing both senses of the term ‘conduct’ in this definition of government. In the first sense, understood as a verb, conduct refers to the direction or guidance of others or oneself, what Foucault (cf. 2007[1978]: 193, 2008[1979]: 112) would on occasion refer to as “conduction”. As a noun, the second sense of conduct “could be viewed as roughly equivalent to behaviour, action, comportment, and may give rise to the embodied

repertoire of such that sociologists call *habitus*” (Dean 2007: 82). As Dean (1999) proceeds to note, “[p]utting these senses of ‘conduct’ together, government entails any attempt to shape with some degree of deliberation aspects of our behaviour according to particular sets of norms and for a variety of ends” (10). In this way, government can be distinguished from strategic games between liberties as it involves more or less rational calculations on the part of subjects involved that “structure the field of possible action” (Foucault 1983b[1982]: 221; cf. Hindess 1996a: 109). On the other hand, government can be set apart from states of domination in terms of the degree of positive freedoms possessed by its subjects (Foucault 2003a[1984]: 34). To be more precise, since Foucault refrains from viewing power relations in terms of quantitative capacity, government does not simply entail that subjects possess *more* freedom than those in a state of domination (cf. Hindess 1996a: 141). Rather, these modalities of power are made distinct by how the field of possible actions comes to be structured and regulated. As mentioned above, states of domination attempt to restrict the field of action as much as possible, where the acquiescence of the subject is maintained by making the consequences of resistance appear to be too costly or undesirable; hence, the association with a ‘power exercised over’. The conduct of conduct cannot be conceived of in these terms: it is best understood as a ‘power exercised through’ e.g. the liberal principle of government through ‘freedom’ (Rose 1999; cf. Gordon 1980: 246; Hindess 1996a: 105). When government is exercised *through* the actions of subjects, it seeks to shape, direct, guide, or lead their conduct according to specified means and particular objectives, both of which condition and are conditioned by identifiable systems of thought.

This section has provided an overview of Foucault’s analytics of power relations. Having briefly outlined Foucault’s central criticisms of modern political theory, it then proceeded to introduce the typology of power relations. As government was contrasted with the other two

modalities of power, it has become apparent that this modality of power is at once subtle and complex. Indeed, Foucault (1991c[1978]: 100) suggested that, in some instances, government may operate without the awareness of the subjects that are implicated in its very operation. If this is the case, what is required, then, are even further refined conceptual tools through which to make government intelligible. This is precisely what Foucault intended through his introduction of the analytic grid of governmentality, from which one can study *how* government is thought and practiced (cf. Dean 1999: 28-9).

The morphology of government

Government presents a broad field for possible investigation, as the conduct of conduct can be applied to the self, others, and institutions such as the state (Dean 1994: 176-7). From this understanding of the term, analyzing the practices of government need not be restricted to either the micro or macro levels, as is commonly done in social and political theory. Foucault's (2007[1978]: 358, 2008[1979]: 186) reactivation of the earlier, broader notion of government was intended not only to circumvent what he thought to be an artificial and inhibiting micro-macro dichotomy, but it was also a specific response to his Marxist critics, who maintained that his analytics of power relations completely ignored global exercises of power, particularly in terms of the state-domination of society (Dean 1994: 179; Gordon 1991: 4). These are among the most notable reasons why Foucault (2003a[1984]: 41) gradually became more interested in the modality of power of government, which bridges strategic games between liberties and states of domination.

Foucault's growing emphasis on government became particularly apparent once he introduced the notion of 'governmentality' to assist in his historical-philosophical

investigations.¹² In similar fashion to his discussions on power more generally, Foucault would advance several distinct but not altogether incompatible notions of governmentality, especially as he shifted the principal focus of his investigations from government in the political domain to that in the ethical one (Dean 1994: 177; cf. Burchell 1996: 35n; Senellart 2008: 388-9). Of the different formulations offered by Foucault, the most pertinent for the present study is the analytical one. That is, for Foucault (2008[1979]), governmentality came to eventually be “no more than a proposed analytical grid for these relations of power [of government]” (186). From this understanding, Foucault and others have sought in earnest to develop and refine the conceptual tools needed to carry out a study in governmentality. Once having sketched the historical formulation and analytical grid of governmentality, the remainder of this section will address its attendant conceptual tools. As Dean (1994: 162) has suggested, these conceptual tools can be regarded as a morphology of government, for, when taken together, they can encompass the discourses, practices, and events involved in the government of the self and others.

The history of governmentality

In Foucault’s work, there are two primary usages of the notion of ‘governmentality’ (cf. Dean 1999: 16). When Foucault (cf. 2007[1978]: 87-114) first introduced the notion during his 1978 lecture series *Security, Territory, Population* at the Collège de France, he was developing what he termed “a history of ‘governmentality’” (1991c[1978]: 102). This lecture was recorded and subsequently published as ‘On Governmentality’, which first appeared – significantly abridged, with several editorial modifications and additions – in an Italian journal later that year

¹² While the neologism of ‘governmentality’ is often attributed to Foucault, the term, according to Thomas Lemke (2007: 2), was first advanced by Roland Barthes in a semiological context where it was understood to refer to an ideological mechanism that makes ‘the government’ appear as the foundation of all social relations. However, Foucault’s (1980e[1977]) work can be viewed as “a refusal of analyses couched in terms of the symbolic field or the domain of signifying structures, and a recourse to analyses in terms of the genealogy of relations of force, strategic developments, and tactics” (114). From this, it is clear that Foucault intended to take his conceptualization of governmentality in a much different direction than the one initially proposed by Barthes.

(cf. Burchell in Foucault 2007[1978]: 101fn). From that Italian version, an English translation was produced for the Autumn 1979 issue of the journal *Ideology and Consciousness (I & C)* (Foucault 1991c[1978]: 87fn, 2007[1978]: 87fn). In the late 1980s, several scholars, who had either attended Foucault's lectures or had been exposed to the concept with the article in *I & C*, reoriented the entire focus of their research, such that there now exists a veritable "sub-discipline within the social sciences and humanities" (Dean 1999: 2) comprised of studies in governmentality, with contributors from Australia, Canada, France, the United Kingdom, and the United States (cf. Dean 1999: 4, 2007: 82; Miller and Rose 2008b: 13-4; Rose et al. 2006: 88). Fortunately, all of Foucault's 1978 and 1979 lectures have just recently been translated into English by Graham Burchell (cf. Foucault 2007[1978], 2008[1979]). Their publication has further clarified Foucault's initial usage of the notion as he analyzed the genealogy of political government (cf. Gordon 1991: 3).

That is, the historical formulation of governmentality is primarily concerned with how the activities of the state came to be viewed in terms of the modality of power referred to here as government. Indeed, the state is now often taken to be synonymous with *the* government, thereby narrowing the term to its modern political usage (cf. Dean 1999: 19; Rose 1999: 6). The history of governmentality is intimately related to Foucault's (1991c[1978]: 103, cf. 1983b[1982]: 224) thesis concerning the "governmentalization of the state", where the competencies of the state were determined through the increasing proliferation of quite explicit and formal government programs. On account of this historical process, Foucault (2008[1979]) would argue that "[t]he state is nothing else but the mobile effect of a regime of multiple governmentalities" (77). When delivering his lectures series on the history of governmentality and in his discussions on liberalism and neo-liberalism in particular, Foucault (cf. 2007[1978]: 348, 2008[1979]: 313) used

‘governmentality’ interchangeably with ‘governmental rationality’ and ‘art of government’ (Gordon 1991: 1-2). These terms are important conceptual tools and will be elaborated on below but, in the course of the analysis, they will not be taken to be equivalent with ‘governmentality’.

Governmentality as analytical grid

Instead, governmentality will be strictly understood as the analytical grid for the ensuing study. In line with his general substitution of ‘government’ for ‘power’, Foucault’s analytical formulation of governmentality represents an attempt to improve the intelligibility of his analytics of power relations, such that the expansive field of investigation corresponding to ‘the conduct of conduct’ can now be described with considerable precision. Although Foucault (cf. 1997c[1980]: 154, 2003a[1984]: 41) would offer several variations, the most lucid analytical formulation of governmentality was advanced in what is a currently unpublished (English) 1981 lecture as “the surface of contact on which the way of conducting individuals and the way they conduct themselves are intertwined” (quoted in Gros 2005: 548n).¹³ Regardless of the particular variant chosen, every analytical formulation refers to the idea of ‘contact’, where it might be taken to mean that the government of self and others occurs “without real penetration” (Foucault 2008[1979]: 201).

As the government of the self concerns the ethical domain and the government of others addresses the political, the analytic grid of governmentality highlights Foucault’s (2005[1982]) attempt “to connect together the question of politics and the question of ethics” (252). Placing an emphasis upon the connection between these two domains through an analysis of the exercises of government will “weave them together without a reduction of one to the other” (Dean 1994:

¹³ During a 1982 lecture at the University of Vermont, Foucault (1988a[1982]) gave a similar analytical formulation: “This contact between the technologies of domination of other and those of the self I call governmentality” (19).

174). For analysis, then, it is important to draw connections between politics and ethics but, at the same time, it is important to maintain the distinction between these two broad governmental domains. Politics is concerned with the government of others, where this ‘other’ has assumed a wide variety of contingent historical forms. In his later work, Foucault’s (cf. 1997c[1980]: 155) primary interest was with government in the ethical domain, because he thought it to be more readily amenable to transformation. Indeed, he would understand the government of the self, ethics, as the practice of freedom where one chooses and fashions a mode of existence (Foucault 1988d[1984]: 50). Hence, for Foucault (1983a), life itself became an art object:

What strikes me is the fact that in our society, art has become something which is related only to objects and not to individuals, or to life. That art is something which is specialized or which is done by experts who are artists. But couldn’t everyone’s life become a work of art? Why should the lamp or the house be an art object, but not our life? (236)

Determining how one should best govern one’s own freedom and life can be an incredibly difficult and complex task – one that spurred the Greeks of antiquity in their philosophical reflections to devise, rapidly modify, and implement technologies to govern the self e.g. to routinely and rigorously practice the care of the self so as to ultimately know the self – knowledge as spiritual truth as opposed to the objective truth sought after by modern Western philosophy, beginning with ‘the cogito’ of Descartes in the seventeenth century (Foucault 2005[1982]: 486-7). As shown by the long epigraph in the preface, Foucault maintained that, in modern Western societies, the gradual erosion of universalizing and moralizing thought systems have made practical knowledges concerning the government of the self, even those of the ancient Greeks, increasingly present-relevant.

Rationalities (arts) of government

According to Hindess (1996a), “what particularly distinguishes government from other forms of power is the element of rational calculation” (109).¹⁴ It is important to note here that ‘rational’ is not intended in the normative sense, that is, where government is taken to be an inherently rational practice as opposed to an irrational one. Rather, Foucault (1991b[1977]) is using rationality according to its “instrumental and relative meaning” (79). Thus, the activity of rational calculation involved in government assumes different historical forms – it is the task of analysis to discern the specific rationalities that are implicated in the practices of government under study (Foucault 1982[1979]: 226; 1988b[1983]: 28-9). To be more specific, analysis must not only account for governmental rationalities on their own terms, as relatively systematic ways of thinking about government in the broadest sense, but analysis must also attempt to account for their relations with particular programs and technologies of government (Foucault 1988b[1983]: 37; cf. Gordon 1991: 3). From the discussion so far, it is clear that there is not a single, universal rationality underpinning government, as Max Weber and the Frankfurt School might have it (cf. Dean 1994: 116; Foucault 1988b[1983]: 27; Miller 1987: 214). Foucault’s discussion of the arts of government is clearly a pluralist one, attuned to the fact that there may be multiple in operation, even within a single government program (Foucault 1988b[1983]: 37; Gordon 1980: 252).

It is important not to completely absorb rationality of government with political rationality, as the latter is focused exclusively on how the government of the state is historically

¹⁴ It should be noted that the term ‘rationalities of government’ elaborated upon in this section can also be regarded as *closely* parallel to an earlier term that Foucault relied upon when discussing power relations more generally; that is, he once spoke broadly of ‘the strategies of power’ (cf. Dean 1994: 158; Hindess 1996a: 109; Foucault 1988e[1978]: 104; Gordon 1980: 246).

thought about, as evinced in Foucault's (1982[1979]; 2007[1978]) genealogy of the welfare state, *raison d'état*, and pastoral power – all of which could be thought of as a relatively continuous political rationality concerned with the collective care of each and all, but with different concepts, objects, and, of course, subjects. Indeed, throughout his lectures at the Collège de France on the uneasy and rivalrous relations between the city-citizen game of the polis and the shepherd-flock game of the pastor, “Foucault's problem is the one suggested by his earlier deliberations on power, that of how particular types of power relations enable the state to act as a centralised, unified locale, and the implications of this for the conduct of life of the governed” (Dean 1994: 179). On account of this more limited focus on the state, political rationality might be positioned, at a conceptual level, as a subset of governmental rationality; the arts of government are to be accorded a much broader understanding throughout analysis, one that is more in line with Foucault's project of reactivating earlier notions of government (cf. Dean 1999: 198; Hindess 1997: 258, 1998: 64). Again, a rationality of government is understood to refer to a system of thought that deliberates on how to best practice government.

One of the most notable aspects of Foucault's history of governmentality concerns the genealogy of the arts of government of liberalism and neo-liberalism. Foucault (2008[1979]: 149) argued that the neo-liberal rationality of government had become ascendant in most capitalist societies as early as the 1930s. Even though the state has multiple governmentalities effecting its institutions and functions, some are more influential than others. If an art of government becomes so coherent and systematic that it can be applied to every social and economic problem, then it might be regarded as hegemonic, one that structures the field of possible actions of the governed more so than others. But what if there is an altogether different set of problems, which are no longer properly considered to be reducible to the social or

economic, although they could very well have implications for both of these domains? Could an already existing hegemonic rationality of government anticipate an emergent ecological domain of political and ethical problems, so as to automatically offer programmatic solutions? If this were the case, there would surely only be *a* rationality of government: neo-liberalism would signal the ‘end of history’ for the arts of government. This study will attempt to interpret and elaborate upon an ecological rationality of government, one which problematizes the ecological domain of being. The interpretation will attempt to demonstrate the extent to which this rationality is autonomous within the program, but, when liberal or presumably neo-liberal elements appear, this will be duly noted in the course of analysis. Even though this study analyzes a single instance of a broader program of government, it will show that the emergence of climate change as a political and ethical problem has resulted in the articulation of a number of, often contradictory, yet rationally calculated ecological *and* liberal solutions. From this, there are going to be subsequent “transferences, transmissions, [and] interferences” (Foucault 1988b[1983]: 37) since the ecological rationality of government is not operating autonomously in the One-Tonne Challenge.

Programs of government

From the discussion so far, the rationalities of government – relatively systematic and organized ways of thinking about the conduct of conduct – form an integral part of, yet are distinct from, programs of government (Dean 1994: 158).¹⁵ By structuring the field of possible

¹⁵ Prior to having substituted power for government, Foucault (1990[1976]: 94-5) relies on the term ‘tactics’ instead of program. This is exemplified in the following passage from the *Introduction* to the *History of Sexuality* series: “the rationality of power is characterized by tactics that are often quite explicit at the restricted level where they are inscribed (the local cynicism of power), tactics which, becoming connected to one another, attracting and propagating one another, but finding their base of support elsewhere, end by forming comprehensive systems: the logic is perfectly clear, the aims decipherable, and yet it is often the case that no one is there to have invented them, and few who can be said to have formulated them” (1990[1976]: 95). I would argue that this is exactly the case with the One-Tonne Challenge, which is, to be sure, a formal and coherent program elaborated by the ‘Government of

actions, rationalities of government have a direct bearing on the articulation of government programs. Still, there is no necessarily deterministic relationship between them (Dean 1994: 158). Programs of government are the prescriptive attempts to devise specific solutions in response to different problematic fields or domains, which might have arisen, at least in part, through the application of governmental rationalities (cf. Foucault 1988b[1983]: 29, 1991b[1977]: 80). Thus, as Rose (1999: 5) perceptively argues, it is not a matter of simply enacting the ‘will to govern’ through the program, as if *a* governmental rationality inevitably becomes imprinted upon it. Rather, the complex interplay and exchanges occurring amongst the technologies and rationalities of government only becomes intelligible through the discourse of the program (Gordon 1980: 252).

This assemblage of rationalities and technologies is not the only insight that can be derived from the analysis of the program. With the agglomeration of the arts of government into the rationality specific to the program under study, certain objectives and ends might come to be advanced at the expense of others (Foucault 1991b[1977]: 80). Since the conduct of conduct is always an inherently practical activity, these objectives and ends are invariably concerned with altering, shaping, or regulating specific practices i.e. educating, punishing, curing, producing, consuming, living, etc. However, as Dean (1999) crucially indicates, “programs do not exhaust the intelligibility of these regimes of practices” (23). So, while rational calculations are made in an attempt to grasp the reality of the practices that they seek to modify, programs, as discursive practices, can never completely structure these practices in their entirety, even though they will

Canada’ i.e. the state, but it belongs to a much broader program of government, where changes in our practices of consumption are sought because of the problem of global climate change. Thus, the One-Tonne Challenge is a relatively formal and cogent articulation of this program, but it, by no means, exhausts it.

still attempt to (Gordon 1980: 248).¹⁶ That is, human practices – simultaneously comprising the objects and subjects of government – obey an autonomous *intentionality*, one which can never be exhaustively taken into account by the rational calculations evinced in government programs (Dean 1999: 23). This non-subjective intentionality refers to the human component of these practices: there exists a heterogeneous multitude of subjects acting upon the free actions of one another but no overarching programmer (Gordon 1980: 251; cf. Foucault 1990b[1976]: 95). In other words, there is no master-subject programming reality involved in the practice of government, even though the analysis of government programs might seem to suggest that there is (Dean 1994: 158). Thus, it is the task of analysis to reveal any disjunction between the intentionality of the practices and the rationality of the program, since the former cannot ultimately be known through the analysis of the program alone (Dean 1999: 23).

The final aspect of the government program that needs to be addressed here concerns its relationship with technology. Programs assemble the techniques and technologies of government to be deployed, where discourse is the positive practice that establishes their contingent, correlative linkages (cf. Gordon 1980: 245). Programs propose and prescribe the technical means and the forms of action that will be exercised upon the actions of the governed. Through the technologies of government, programs “seek to configure specific locales and relations in ways

¹⁶ This insight is remarkably similar to that offered by the *économistes* of the eighteenth century, albeit from a quite different angle. To be more precise, the *économistes* century argued that we can never have a complete knowledge of the natural processes of the economy and, even if we could, they cannot be *fully* known in advance. On account of this inherently limited knowledge, the practices of government and, perhaps more crucially, state intervention, might produce completely unanticipated or undesirable results when applied to the economic domain, with the resulting conclusion that they must be restricted to the greatest extent possible (Foucault 2008[1979]: 17; cf. Hindess 1996b: 70). Here, posited in its modern sense – i.e. as an autonomous reality composed of a multitude of free individuals making choices in accordance with the natural laws of the market – the economy can be understood as an effect and technique of the program, specifically as a strategic way of evading the impossible questions pertaining to the myriad of individual interests and decisions that cannot possibly be taken into account in advance by theoretical knowledges (Gordon 1980: 249).

thought desirable” (Rose and Miller 2008[1992]: 61). Of course, there is no guarantee that the techniques or technologies deployed will be adequate and, even if they are, they might not produce the intended effects (Foucault 1991b[1977]: 80; Miller and Rose 2008c[1990]: 38-9). Regardless of the absence of guarantees, there is an “eternal optimism” (Miller and Rose 2008c[1990]: 29) or “utopian element” (Dean 1999: 33) that pervades formal attempts at programming and governing the real, namely, that the problematized regimes of practices and forms of life-conduct that they target are malleable and can be changed for the better.

This utopian thinking has a marked effect on the exercise of government, in that it comes to be viewed, paradoxically, as “a congenitally failing operation” (Miller and Rose 2008b: 17; cf. Foucault 1979 quoted in Senellart 2007: 387; Gordon 1980: 250). This attests to the effects that these programs incite in the real, for as Foucault (1991b[1977]) points out,

if prisons were seen to have failed, if criminals were perceived as incorrigible, and a whole new ‘race’ emerged into the field of vision of public opinion and ‘justice’, if the resistance of the prisoners and the pattern of recidivism took the forms we know they did, it is precisely because this type of programming did not just remain a utopia in the heads of a few projectors (81).

The continual failure of government programs ultimately serves to highlight this utopian element. As the subsequent analysis will reveal, the One-Tonne Challenge, as a formal state program of government, sought to extend the ecological technology of greenhouse gas inventory in order to modify and regulate the energy efficiency of the individual consumer. Although this technology had been devised in thought, it could not be adequately deployed in practice: the program of government could not determine whether or not it was succeeding or failing in terms of achieving reductions in the greenhouse gas emissions at the level of the individual and population, precisely because this technology had yet to be adequately developed to routinely and accurately measure the emissions of each and all. Despite this obvious technological

weakness, the One-Tonne Challenge was criticized and declared to be a failure, such that an emergent ecological critique could propose even more interventionist government programs so as to ensure the necessary modifications in the life-conduct of each and all. Thus, the ‘*failure*’ of the One-Tonne Challenge produced even more elaborate and intrusive government programs, with the eternally optimistic view that more government will yield the necessary changes to the *habitus* of the governed.

Techniques of government

Where programs have problematized a regime of practices, constituted the objects-subjects to be acted upon, and set the objectives of government, rational calculations are also made at the programmatic level regarding the governmental techniques needed to regulate, modify, direct, or shape conduct. Techniques of government – the institutions, mechanisms, instruments, vocabularies, knowledges – articulated in the program can be pre-existing or invented. With the former, many techniques that have been put into effect according to one program are often transplanted into another for an entirely different purpose (Gordon 1980: 250; cf. Miller and Rose 2008c[1990]: 35; Rose 1999: 53). In either case, the assemblage of government techniques in the program is unlimited in principle (cf. Rose and Miller 2008[1992]: 63). For government to be exercised, techniques of government must be deployed, otherwise the rationalities and programs of government remain in abeyance (Foucault 1991b[1977]: 80; Miller and Rose 2008c[1990]: 33; Rose 1999: 51).

As touched upon above, the technical components of the program might not yield the practical outcomes intended in the conduct of the governed. Indeed, the conduct of conduct does

not function automatically, no matter how prevalent the view that it can.¹⁷ This accounts to a considerable extent, for the lack of direct correspondence between discourse, practices, and effects (Gordon 1980: 247). It also speaks to the forms of counter-conduct that government invariably encounters with the intentionality of its always already acting subjects.¹⁸ In the attempt to realize programmatic thought within power relations, that is, to act upon the actions of governed subjects, techniques of government do not *override* the freedom of the subject but operate *through* it. Techniques of government further structure the field of possibilities, so that the subject, through its exercise of freedom, comes to choose and practice the prescribed form(s) of conduct (Foucault 2007[1978]: 119fn; cf. Burchell 1991: 119). In this way, the ultimate end of government resides in embedding the capacities for self-regulation directly in the conduct of the subject (Hindess 1996a: 106). However, the governed subject might refuse this conduct, or take it up only to later abandon it, or practice forms of conduct that are entirely opposed to those prescribed by the program. So, even though techniques of government operate according to their own deterministic technical rationality, their effects cannot be entirely determined in advance (Gordon 1980:253). *Pace* the Frankfurt School, this insight precludes totalizing, epochal theses

¹⁷ This explains Foucault's (1995[1975]: 201), often misunderstood, interest in the utilitarian philosopher Jeremy Bentham and his surveillance machine of the panopticon, where the invisible gaze is supposed to instil in its subjects self-regulation by placing them under conditions of permanent visibility (cf. Gordon 1980: 251). According to Foucault (2008[1979]), panopticism became a "general political formula" (67) where this invisible hierarchal supervision was intended to be the primary mechanism to regulate conduct. Bentham sought to align this formula with the governmental rationality of liberalism, for it is essentially a knowledge concerned with how to govern less or, to put it in Bentham's term, it is a form of frugal government (Foucault 2008[1979]: 28).

¹⁸ In a 1978 lecture at the Collège de France, Foucault (2007[1978]: 200-2) carefully considered his terminology in describing the actions of subjects that refuse, resist, and revolt in the face of governmental interventions. While 'dissidence' could be used, Foucault (2007[1978]) perceived possible dangers, for its usage opens the possibility of the subjectification of the 'dissident', which often leads to "a process of sanctification or hero worship" (202). He proceeded to settle upon 'counter-conduct', which effectively avoids this danger of subjectification. Even more importantly, 'counter-conduct' opens a space through which to "analyze the components in the way in which someone actually acts in the very general field of politics or in the very general field of power relations" (2007[1978]: 202).

about ‘modernity’ and the inevitable unfolding of *the* technological according to global processes of instrumental rationalisation (cf. Dean 1994a: 121-7, 1996a: 52; Foucault 1988a[1983]: 28, 2008[1979]: 35).

Technologies of government

Assembled in and deployed by the program, technologies of government are tied to the techniques of government, but the former are far more rare and significant (cf. Dean 1996a: 57, 1999: 31; Gordon 1980: 250; Rose 1999: 52-3). As Dean (1996a) suggests, “the term suffers from a certain indeterminacy” (54) in most studies in governmentality. I would suggest that it is the most difficult and, perhaps for this reason, least theorized of the conceptual tools. Perhaps this difficulty arises, at least in part, from the Heideggerian roots of ‘technology’. In his seminal paper, Dean (1996a: 59-61) acknowledges and discusses the influence of Martin Heidegger’s philosophical thought on the notion of technology of government. The German philosopher and his essay, ‘The Question Concerning Technology’, were studied in-depth by Foucault, who regarded Heidegger as “the essential philosopher” (Foucault 1988f[1984]: 250; cf. Burchell in Foucault 2005[1982]: 489fn). It would be quite difficult to attempt to briefly summarize Heidegger’s understanding of technology, apart from noting that he rejected reducing the question concerning technology to the instrumental level, suggesting that it is far more complex than the application of this or that technique to master nature. Foucault accepts Heidegger’s overall philosophical approach to technology but reverses its application:

For Heidegger, it was through an understanding of objects, that the West lost touch with Being. Let’s turn the question around and ask which techniques and practices constitute the Western concept of the subject, giving it its characteristic split of truth and error, freedom and constraint. I think that it is here that we will find the real possibility of constructing a history of what we have done, and, at the same time, a diagnosis of what we are. (Foucault 1997c[1980]: 152)

Foucault was not interested in how technologies structure and order objects per se, but how technologies govern objects that are also subjects i.e. human beings. This alludes to the rhetorical effects associated with the ‘technologies of government’, as the term was introduced to eclipse, but not altogether overthrow, the neo-Kantian divide between the natural and human sciences, a division which equates the notion of technology to the former i.e. technology as the attempted mastery of nature (Dean 1996a: 52-3; Gordon 1980: 238). Technologies of government also involve the attempted mastery of a domain of objects, but the objects of such technologies are always going to be subjects. From this perspective, subjectivity can no longer be accorded moral autonomy, for it is often the object – the target – of government technologies (Gordon 1980: 239; cf. Rose 1999: 54-5). Far from repression or falsification, the subject is produced and constituted through technologies of government (Dean 1996a: 53; Gordon 1980: 239; cf. Foucault 1983a[1982]: 208; 1997c[1980]: 152). Although Dean (1996a: 53) questions the continued pertinence of such rhetorical effects given the present theoretical conjuncture, I generally remain cautious when considering the influence of ‘the Foucault effect’, especially outside of academia.¹⁹ The rhetorical effects associated with ‘technologies of government’ can be easily lost without further explanation.

Setting this tactical issue aside, Dean (1996a) manages to overcome the indeterminacy characteristic of the usage of term so as to “to match its rhetorical effects with greater analytic precision” (48). This is accomplished through his understanding of the “thresholds of technological government” (Dean 1996a: 63). Rejecting the instrumentalist reductionism that

¹⁹ This is the title given to what is arguably the most significant collection of papers for the emergence and proliferation of ‘studies in governmentality’, which the book had as its subtitle. However, it is interesting to note that, apart from the contributions of Foucault and the editors, the notion of ‘governmentality’ was not employed in any of the other papers (cf. Donzelot and Gordon 2008: 50fn).

posits technology solely a means to an end, government becomes technological when it is coupled with performance criteria (Dean 1996a: 61). In this way, technologies of government are oriented not only towards the specific objectives articulated in the program but also the technical requisites of performance (Dean 1996a: 63). This entails the regular application of technical and practical knowledges addressing conduct (Dean 1996a: 59). As Dean (1996a: 62) proceeds to note, “[g]overnment crosses the technological threshold when the formation of knowledge of a particular domain and the optimization of power and capacities regularly reinforce one another in a circular fashion” (63; cf. Foucault 1995[1975]: 224).

To give an example, this study will be concerned with the technology of government known as greenhouse gas inventory. At the purely technical level, it is a complex scientific technique that quantitatively measures greenhouse gas emissions; for instance, it is regularly deployed to measure the emissions of entire nation-states. However, the greenhouse gas inventory crosses the technological threshold of government when it is regularly applied in order to compare and evaluate the performance of nation-states over time and with respect to one another, in terms of their emissions. This technology is typically coupled with the ecological rationality of government because the former can generate statements as to the relative sustainability of the different nation-states, where one nation-state might be performing better than its counterparts. As this study will show, this ecological technology has gradually seen its application extended as it can now be adapted, with varying degrees of success, to measure and evaluate the performance of the sectors of the domestic economy, the population, and the individual. From this, the technology obeys a technical rationality: to be able to systematically measure, compare, and evaluate each and every producer of greenhouse gas emissions, from the nation-state as a whole to each and every one of its citizens.

Chapter summary

This chapter provided an exposition of Foucault's radical conceptualization of power. The analytic of power relations advanced here does not directly correspond with Foucault's work. His work on power relations underwent several important theoretical shifts, so any attempt at systematization will inevitably introduce some variance. Nevertheless, the modality of power that encompasses the conduct of conduct and its attendant morphology were addressed in considerable detail as they impart to this study the analytic grid and conceptual tools needed to carry out the subsequent analysis. Indeed, the morphology of government has been advanced in order to make the analysis of the practices of government more intelligible, as this is one of the central criteria according to which this type of 'perspectival' study can be evaluated (Dean 1999: 23). However, analytical precision is not the sole purpose of this type of study. To put it in Foucault's (2007[1978]) terms, while the morphology of government provides intelligibility to analysis, the addition of the theme of governmentality yields a "tactically effective analysis" (3). Such a tactical analysis is aimed at encouraging political inventiveness by revealing the contingencies and possibilities that make up the present (Rose 1999: 3). Indeed, this is what prompts Foucault (1988g[1981]) in an interview to declare that he seemed optimistic because "so many things can be changed, fragile as they are, bound up more with circumstances than necessities, more arbitrary than self-evident, more a matter of complex but temporary, historical circumstances than with inevitable anthropological constants" (156).

CHAPTER TWO: TOWARDS A TACTICALLY EFFECTIVE ANALYSIS

The preceding chapter provided an overview of Foucault's analytics of power relations, where particular attention was given to the modality of power known as government. Defined as 'the conduct of conduct', it quickly became apparent that government "marks out a massive domain between the minutiae of individual self-examination, self-care and self-reflection, and the technologies and rationalities concerned with the government of the state" (Dean 1994: 176). While there are instances of government in virtually every society, the practice of government is not ahistorical (cf. Hindess 1996a: 107). In order to help make the historical variations of this practice intelligible, the analytic grid of governmentality was advanced along with the morphology of government, consisting of the rationalities, programs, techniques and technologies of government.

What still remains is a detailed discussion concerning the method of application for this analytic grid and its conceptual tools. Studies in governmentality have tended not to provide methodological expositions, preferring instead to detail an "ethos of investigation" (Rose et al. 2006: 101; cf. Rose 1999: 9).²⁰ On account of this marked tendency, they have not responded to criticisms concerning their methodological rigour and transparency (cf. Frauley 2007: 621; Kerr 1999: 176). This chapter will attempt to address this criticism by making clear and explicit not only the epistemological assumptions and methodological principles maintained throughout the present study, but also by specifying its method and dimensions of analysis. The first section will

²⁰ A notable exception of this tendency can be found in Dean's (1999: 27-38) theoretico-programmatic text, *Governmentality*, where he elaborates an 'analytics of government'. Many of the insights that he provides are discussed and referenced throughout this chapter, particularly the analytical dimensions that he develops, which were derived from Deleuze's (1992) essay, 'What is a *dispositif*?' Despite this, I have not adopted the term 'analytics of government', preferring instead 'interpretative analytics'. In my view, the latter better conveys the presence of genealogical diagnosis alongside the archaeological analysis of the statements in the discourse of the program. In this way, interpretative analytics is, at least ostensibly, closer to Foucault's original terminology, thereby providing greater proximity to the work of the principal interlocutor of this study.

develop an account of the epistemological assumptions that are going to be maintained throughout analysis. Taken together, I have described these assumptions as belonging to an ‘irrealist empiricism’, where the existence of an external material social reality is accepted but the ability of truth and knowledge to perfectly correspond to this reality is rejected. In the second section, the methodological approach that Dreyfus and Rabinow (1983) refer to as ‘interpretive analytics’ will be introduced and explained. Following Foucault (cf. 1980d[1976]: 85), interpretive analytics is the outcome of subsuming archaeological analysis to genealogical diagnosis (Dreyfus and Rabinow 1983: 103). The third section will describe the method and dimensions of analysis, which consists of organizing and ordering an archive of documents pertinent to the object of study, the One-Tonne Challenge.

Irrealist Empiricism

Addressing important questions that transverse philosophy as well as the natural and human sciences, epistemology is conventionally understood as the theory of knowledge. Epistemological theories concern the status of knowledge and truth, as well as their correspondence with reality: can the truth about reality be known, what does truth and knowledge consist of; how are they obtained; how are they recognized and verified; what are their limitations, and so on (cf. Dean 1998: 183; Machado 1992: 15). Studies in governmentality are not generally associated with any particular epistemological theory, a move that is argued to be consistent with the work of Foucault (Dean 1998: 183). His earlier archaeological studies, especially, can be viewed as the analysis of epistemological transformation, but he did not proceed to posit one of his own making on the basis of these analyses (Machado 1992: 4). As discussed in the next section on methodology, studies in governmentality can also be distanced

from conventional epistemological concerns through the application of the ‘double bracketing’ approach, where the truth and meaning contents of serious statements are not evaluated according to any epistemological criteria. Further, the study of governmentality is distanced from epistemological theory because of its foregrounding of practice instead of theory, where the government program can be ultimately understood as a discursive practice (Foucault 1991b[1977]: 75). From this, studies in governmentality are principally concerned with describing how thought becomes practical and technical through the program (Dean 1999: 18). They specifically address knowledges concerned with ‘know-how’ as opposed to the conventional focus of epistemology, which pertains to knowledges concerned with ‘knowing-that’ (Dean 2007: 83).

Despite the initial distance from considerations of epistemology, this section will argue that studies in governmentality – the present one included – continue to hold a number of important epistemological assumptions concerning their objects of study i.e. programs of government. Taken together, I will refer to these epistemological assumptions as ‘irrealist empiricism’. To be sure, this term is intended only as a heuristic device that will clarify the position common to studies in governmentality when discussing notions such as knowledge, truth, and the real. Irrealist empiricism cannot be taken to be an epistemological theory. Again, this is consistent with the work of Foucault, whose comments on epistemology were “purely negative maxims” (Rorty 1986: 47). Thus, at most, irrealist empiricism could be regarded as a perspective on epistemological questions.

The eschewal of realism

Jon Frauley (2007) has initiated a much needed debate regarding the epistemological position assumed by studies in governmentality. He asserts that their eschewal of realism

effectively results in an abandonment of Foucault's methodological approach of archaeology (Frauley 2007: 618). I am not going to take a stance vis-à-vis this specific claim, nor Frauley's broader project of incorporating critical-realism into the analytics of government; if it results in a greater capacity for understanding the exercise of government in the real, then so much the better. However, until this critical realist project is further elucidated, as in Frauley's (2007: 621) forthcoming exposition on "the logic of discovery", it remains important to provide an account of the characteristic position that has so far been assumed by studies in governmentality: their eschewal of realism (cf. Dean 1996b: 192, 1999: 31; Foucault 2008[1979]: 2; Rose 1999: 19; Rose and Miller 2008[1992]: 57).

This eschewal of realism cannot be equated with having "a very impoverished notion of the real" (Foucault 1991b[1977]: 81). In fact, it is exactly the opposite. Studies in governmentality do not attempt to study the *exercise* of government as it occurs in "the real [which] remains too indecipherable ever to be able to be summed up into a formula" (Dean 1998: 195). Here, there is the simultaneous acceptance of an external social reality, but there is also a clear refrain from making claims that the essence of the real can ever be completely grasped through discursive practices such as government programs. However, the latter claim must not be overemphasized; otherwise, it might descend into epistemological nihilism where *all* knowledge and truth are denied. Rather, studies in governmentality assume a more moderate epistemological position. It is best expressed as an agnosticism about the real – to put it in a word, *irrealism* – where it is acknowledged that there are no absolute standards against which knowledge and truth about the real can be evaluated, but the existence of the real cannot be dismissed either, or relegated to the status of a mere construction (cf. Dean 1998: 195; Rose 1999: 32). While there is a certain relativism evinced here towards knowledge and truth, this

does not mean that they might not be linked to diverse effects in the real, where the empirical description of these possible effects are exactly what is within the purview of studies in governmentality (cf. Foucault 1991b[1977]: 81; 2008[1979]: 2).

Addressing effectivity

On account of this irrealism, as Nikolas Rose et al. (2006: 99) note, studies in governmentality are often criticized for ignoring the ‘messy actualities’ that invariably accompany the real exercise of government. That is, they are criticized for investing too much attention on the ideal-type of the government program. There are two responses to this criticism. First, programs of government are not constructed ideal-types, that is, second-order representations derived from analysis (Foucault 1991b[1977]: 81; Rose et al. 2006: 99). Programs of government are empirically observable, for they are discursively codified in numerous material documents. Further, studies in governmentality are particularly interested in the second-order statements articulated in these documents, where thought conceptualizes the real, thereby structuring a field of possible action (Dean 2007: 89). As Rose explains, “thought constructs its irreal worlds through very material procedures. Thought, that is to say, becomes real by harnessing itself to a practice of inscription, calculation and action” (Rose 1999: 32). So, the empirical study of the rational calculations that, taken together, compose the program will yield insights into how the exercise of government is systematically thought about and practiced; that is, analysis will attempt to detail how the field of possible action is structured for the ‘real’ practice of government. This is the extent of the insight that can be provided from the analysis of the discourse of the program.

In this way, studies in governmentality remain modest about the scope of their analysis (cf. Rose 1999: 13). It must always be recognized that the analysis of the rationalities and

technologies assembled and deployed in the program does not immediately reveal anything concerning its actualization or realization. Thus, criticisms that studies in governmentality overlook the messy actualities of governmental practices are correct, but ultimately misplaced. The second response to this criticism, then, is that ‘effectivity’ and ‘realization’ must remain two distinct notions (cf. Gordon 1980: 246). In order to study the realization of government, different analytical grids and conceptual tools would be needed. The study of governmentality is oriented towards understanding the effects that can be linked to government programs. As Dean (1998) notes:

[programs of government] promote forms of visibility and grids of evaluation, they guide the way we understand ourselves and others, they allow us to conceive objects of government in specific ways, they make possible various forms of expertise and solidify into particular institutions, they allow certain forms of persuasive argument, and so on. They have a diverse effectivity. (193)

So, the subsequent analysis will be concerned with making intelligible the diverse effectivity of the program, since understanding its realization at the point of exercise of government is an avenue necessitating realist sociological study (Rose et al. 2006: 100).

Grouped together as irrealist empiricism, the two epistemological assumptions advanced here are common to the study of governmentality. First, there is a social reality external to the actors situated within it; however, this reality cannot be objectively or comprehensively known by these actors through discursive practices, despite any claims to the contrary. As a result, studies in governmentality are primarily concerned with technical knowledges, where the aim is to understand the effects that they might have on the regimes of practices to which they are directed. Secondly, studies in governmentality consist of the empirical analysis of the real programs of government, discursively articulated through the true and meaningful serious statements of the archive. Of course, these epistemological assumptions, in turn, influence how

the study of governmentality will be carried out. So, the next section will address the methodological principles that follow from the epistemological perspective of irrealist empiricism.

Interpretative Analytics

An important caveat should be noted prior to entering a discussion concerning Foucault's methodologies, an endeavour which is "as paradoxical as speaking of ascending stairs or cascading waterfalls in the graphic work of M.C. Escher" (Dean 1994: 2). As Dean (1994a) proceeds to explain,

Foucault never sought to apply a particular system or to allow his own heuristics to congeal into a fixed, formal method. Every statement of method, ostensibly committed to the same overall framework, reveals subtle, and sometimes gross, shifts and reconfigurations. Indeed, Foucault engaged in the task of methodological formalisation in the *Archaeology* only after he had completed his 'empirical' studies, and almost immediately set off on a new path in which this approach was subsumed under another, quite different one, that of genealogy. (2)

From this, it would surely be misleading to maintain that the proceeding account is going to be representative of Foucault's methodological approaches. Further, this caveat helps explain why adhering to any one of Foucault's proposed methodologies at the expense of the other involves certain oversights and often provokes criticism. Indeed, for their part, studies in governmentality have been primarily oriented towards genealogy (O'Malley et al. 1997: 502). This is understandable given that Foucault (2007[1978]: 36, 117), when initially working on the 'history of governmentality' was exclusively referencing that methodological approach. Nonetheless, Frauley (2007) has recently criticized the genealogical underpinnings of extant studies in governmentality, proposing instead "[a]n archaeological-realist ontology of government" (630).

In this section, I will argue that it is not a question of opposing archaeology to genealogy, or vice-versa. Archaeology is an indispensable methodological approach required for the analysis of the discursive practices of government: it should not be neglected as Frauley (2007) rightly points out. However, as will be shown in the passages below, studies in governmentality would no longer be tactically effective without the genealogical capacity for problematization and diagnosis. In light of these arguments, the methodological approach that will be employed in this study recognizes the reciprocity between Foucault's methodological approaches. Following Hubert Dreyfus and Paul Rabinow (1983, 1986: 115-7), it can be understood as an "interpretative analytics", a term that will be further elaborated upon in the proceeding discussion.

Archaeological analysis

Despite its methodological formalization, Foucault's archaeological approach underwent several modifications; thus, there can be no single comprehensive or authoritative account of archaeology (cf. Machado 1992: 17). From this, any attempt at replicating it will undeniably tends towards an expedient representation. For present purposes, I will draw from the critical account provided by Dreyfus and Rabinow (1983), one which Foucault deemed to be an accurate overall representation of his work; he also personally contributed an essay and an interview for the 'Afterword'.²¹ As will be explained in the passages that follow, the central object of analysis for Foucault's archaeology is the serious statement produced by the rules of discourse (Deleuze 1988: 15; Dreyfus and Rabinow 1983: 45).

²¹ These contributions were, respectively, 'The Subject and Power' (1983b[1982]) and 'On the Genealogy of Ethics: An Overview of Work in Progress' (1983a). On the back cover of the book, Foucault is quoted as saying that it 'presents a very clear and intelligent analysis of the work that I have attempted to do. Resolving many misunderstandings, it offers an accurate, synthetic view' (Dreyfus and Rabinow 1983). As mentioned above, any *re*-presentation of Foucault's analytical and methodological approaches is invariably going to be synthetic, given his propensity to constantly reformulate and realign the trajectory of his work.

The production of *serious statements* is rare but regular (Deleuze 1988: 4-5; Dreyfus and Rabinow 1983: 48). To begin with, statements cannot be reduced to specific words, phrases, utterances, or propositions (Deleuze 1988: 18). The latter are only the grammatical components of a statement; the meaning of a statement will remain the same even if these grammatical components change.²² Foucault offers the following example to clarify this distinction: “[t]he keyboard of a typewriter is not a statement; but the same series of letters, A, Z, E, R, T, listed in a typewriting manual, is the statement of the alphabetical order adopted by French typewriters” (quoted in Deleuze 1988: 2). Further, to continue with the negative definition offered above, the statement is not to be understood as a mental construct, historical event, or ideal-type (Dreyfus and Rabinow 1983: 45). The statement is a speech act which is intended to articulate meaning or truth about an object or domain of objects (Dreyfus and Rabinow 1983: 45).²³ While a statement might be made regarding everyday local and personal circumstances, Foucault’s concern is only with serious statements. To help illustrate this, Dreyfus and Rabinow (1983) note how “[it] is going to rain’ is normally an everyday speech act with only local significance, but it can also be a serious speech act if uttered by a spokesman for the National Weather Service as a consequence of a general meteorological theory” (48). So, serious statements involve authoritative truths, which are intended to have a much broader significance than the everyday personal circumstances immediately surrounding the speaker (Dreyfus and Rabinow 1983: 48). When considered overall, archaeology seeks to understand, through the analysis of these serious

²² Dreyfus and Rabinow (1983) provide a good simple example of how a statement can remain the same even though its grammatical components change, such as “when a stewardess explains an airline’s safety procedures in several languages” (45).

²³ Speech acts can be understood as referring to writing, painting, drawing, and verbal communications (Dreyfus and Rabinow 1983: 48).

statements, how there are rules in operation that regulate the production of statements and the discursive formations of which they are a part.

In order to develop an account of this rather complex problem, Foucault borrowed from phenomenology the methodological principle of bracketing (cf. Dreyfus and Rabinow 1983: 49). To be more precise, Foucault would perform what is known as a phenomenological reduction: he would bracket the truth and meaning contents of serious statements in order to analyze the rules that produce them (Dreyfus and Rabinow 1983: 49). This ‘double bracketing’ of the truth and meaning of serious statements involves assuming a position of complete detachment, such that analysis cannot be concerned with whether or not what the statement conveys is, in fact, true or meaningful; indeed, if analysis were concerned with this, it would have to rely on criteria derived from epistemological theory. Through the principle of double bracketing, Foucault sought to identify broader historico-epistemological transformations in the rules governing discursive formations, where this was accomplished through the detached analysis of serious statements, particularly with those that might appear strange and nonsensical if used in the present (Dreyfus and Rabinow 1983: 15). As Dreyfus and Rabinow (1983: 53) point out, the rules governing discursive formations are not ahistorical, otherwise archaeological analysis might be properly situated with the contemporaneous structuralist project, which Foucault (1991a[1978]: 88) explicitly distanced himself from. Further, this double bracketing serves to distinguish archaeology from hermeneutics, whereby the background meaning of a statement is the object of endless interpretation (Dreyfus and Rabinow 1983: 52; cf. Dean 1994: 15-6). In this way, the methodological principles of archaeology had already indicated that Foucault is neither a structuralist nor a practitioner of hermeneutics.

Indeed, archaeology is an entirely different approach from its methodological predecessors, for it offers “a new way to systematize discourse” (Dreyfus and Rabinow 1983: 59). Foucault asserts that archaeology has only one task: “a pure description of the facts of discourse” (quoted in Dreyfus and Rabinow 1983: 83). Again, this pure description involves the double-bracketing of truth and meaning in serious statements but, as Dreyfus and Rabinow (1983) critically point out: “Is a pure description possible? Is there no interpretation involved in the choice of descriptive categories? Must we not be able to ask: Are these descriptions accurate or distorted? But doesn’t this reintroduce truth?” (85). These questions serve as a prelude to the discussion of the two methodological shortcomings of archaeology, for which the introduction of genealogy would eventually provide an answer.

The shortcomings of archaeology

Any suggestion of prioritizing archaeology over genealogy would first have to address its two central shortcomings. There is no doubt about the significance of analyzing the production of the serious statement, where the specific intentions of speakers are no longer at issue (Deleuze 1988: 8). From this, Foucault would make the “unassailable discovery [...] of the positive and irreducible existence of discourse” (Dean 1994: 17). Even when his works exclusively relied on archaeology, the positive analysis of serious statements yielded many insights concerning the epistemic transformations in the “complex and regular relations between discursive practices and what counts as objects, subjects, and so forth” (Dreyfus and Rabinow 2003: 84). However, Dreyfus and Rabinow (1983: 94-5) question the importance that Foucault assigns in his archaeological methodology to the rules regulating the production of statements and governing discursive formations more generally. They maintain that Foucault’s initial assertion that these rules operate autonomously meant that he tended to neglect their systematic relation to non-

discursive practices (cf. Dreyfus and Rabinow 1983: 60). Although Foucault demonstrated an awareness of the role of non-discursive practices in the formation of discourse, he continually prioritizes discursive practices, for they are seen to organize all other non-discursive practices (Dreyfus and Rabinow 1983: 62-3). While Dreyfus and Rabinow (1983: 66, 78) find this strong claim to be highly original and provide examples of Foucault explaining how discursive practices organize non-discursive ones, they find it implausible that discourse can exist completely autonomously, such that it is not in any way dependent upon the non-discursive.²⁴ Indeed, this shortcoming was clearly one that Foucault recognized, for it would be effectively overcome through the genealogical approach.

The second shortcoming of archaeology would also eventually be addressed through Foucault's introduction of this new methodology. This shortcoming concerns how the double phenomenological reduction involved in archaeological analysis raises the problem of the significance of the analysis itself. That is, in line with this methodological approach, the analysis "should not claim serious meaning and explanatory power for itself" (Dreyfus and Rabinow 1983: 83). This precludes Foucault from giving any explanation as to why his archaeological analyses are meaningful and significant, let alone their relation to 'truth', a "puzzle" that he would admit to having great difficulty with throughout his work (cf. Foucault 1990b[1976]: 36-7).²⁵ As Foucault explained, "[f]or the moment, and as far ahead as I can see, my discourse, far

²⁴ The assertion that archaeology fails to adequately account for the relation between the discursive and non-discursive has since been challenged. Dean (1994) maintains that Foucault did not treat discourse as an ideal unity, such that he "found himself enclosed in a structuralist account of discourse as fundamentally self-referential, and thus felt the need for a more adequate theorisation of what had remained the non-discursive background of discourse" (17). Dean maintains that Foucault's archaeological studies were materialist and context-specific, such that he could describe discourse historically, specifically "its location in time and place, and seek to account for it in terms of its conditions of existence" (Dean 1994a: 17).

²⁵ According to Dean (1994), "[t]his, quite simply, is Foucault's puzzle. An insoluble one, perhaps, but also one that, if we learn to live with it, leads us to the most productive of enterprises: in the domain of historical knowledge, how

from determining the locus in which it speaks, is avoiding the ground on which it could find support” (quoted in Dreyfus and Rabinow 1983: 85). But can archaeology claim complete detachment from contemporary discursive formations; and, even if it could, would this position be desirable?

Dreyfus and Rabinow (1983: 90) recognize this conflict in Foucault’s methodological expositions on archaeology, as he oscillates between descriptions of discursive rules and prescriptions concerning how these rules operate to govern discourse. As a pure description of the rules of discourse, archaeology manages to maintain its detachment; but, when it explains that these rules also regulate the production of statements, archaeology seems to suggest that serious truth and meaning is only an illusion, the result of transcendental discursive rules (Dreyfus and Rabinow 1983: 95). Archaeological analysis becomes prescriptive as it maintains that serious statements only *appear* as such because of the rules of discourse, which are the conditions of existence for the production of statements. Thus, the prescriptive stance assumed throughout the archaeological analysis of such rule-governed statements consists of accepting the illusory appearance of serious truth and meaning, but advancing archaeological discourse as its counterpoint. However, as Dreyfus and Rabinow (1983) crucially point out, if everyone were to assume the discourse of archaeology, then to speak at all

would make no sense. The dawning of freedom from the illusion of serious truth and meaning must be constantly promised but constantly postponed. If archaeology is to avoid self-elimination, it must either study only the past, or else, like therapy and phenomenology, it must see to it that its task is interminable. (95)

we can know without guarantees of truth; in the domain of politics, how we can govern and use power without the guarantee of emancipation and political universalism; in the domain of ethics, how we can live without the assurances of universal moral codes and commandments. This is perhaps why [...] he spoke of a new way of founding our practices of power, knowledge, and self, of the will to discover a new way of governing oneself, a ‘political *spiritualité*’” (215).

Foucault (1995[1975]) would attempt to solve this problem by refashioning his intellectual project as “a history of the present” (31; cf. Dean 1994a: 17). This ‘genealogical’ approach begins by diagnosing serious problems that structure and govern our experiences in the present, and it then proceeds to trace the historical trajectories of their contingent elements and events – those that transpire in both the discursive and non-discursive realms. These historical elements and events have rendered practices and experiences of the present into serious problems requiring governmental solutions. When considered overall, the introduction of the ‘history of the present’ signalled Foucault’s intention to reduce his previous emphasis on explaining the rules governing discourse. Of course, he would continue to rely on archaeological analysis in order to show how serious statements are systematically related to practices of government (Foucault 1980d[1976]: 85; 1984a: 46). Still, the methodological approach of genealogy would provide the basis for Foucault’s subsequent analyses. As he would explain in a 1978 lecture: “I think we could reconstruct the function of the text, not according to the rules of formation of its concepts, but according to its objectives, the strategies that govern it, and the program of political action it proposes” (Foucault 2007[1978]: 36). This methodological shift was the result of Foucault subsuming archaeology to genealogy.

Genealogical diagnosis

As mentioned above, studies in governmentality have, for the most part, been regarded as adopting Foucault’s genealogical approach, hence the chosen vocation of its practitioners as “historians of the present” (O’Malley et al. 1997: 505). I would argue that one of the reasons why studies in governmentality are so open to methodological criticism is because Foucault would never systematize and formalize genealogy in the same manner as he had done with archaeology (Dean 1994: 14). As a result, any straight-forward identification with Foucault’s

genealogy, without an accompanying exegesis on what methodological principles such an approach entails, will be open to the criticism that it is methodologically inchoate. The closing passages of this section will detail *a* possible genealogical approach derived from the work of Foucault. For their part, Dreyfus and Rabinow (cf. 1983: 106), in their attempt to piece together Foucault's genealogical approach, rely extensively on his essay, 'Nietzsche, Genealogy, History' (Foucault 1984b[1977]); but Dean (1994a 14, 16) cautions against this, arguing that this essay represents more of a commentary on Nietzschean genealogy rather than a statement of Foucault's own methodological approach. Indeed, there seems to be a considerable difference between the genealogical styles of Nietzsche and Foucault (Bouchindhomme 1992: 323).²⁶ So, even though the account provided by Dreyfus and Rabinow (1983) has been extensively drawn from when elaborating the methodological principles of archaeology, the discussion on genealogy will be broadened to include the works of those who have been among the most notable contributors to the study of governmentality.

In the discussion on the methodological shortcomings of archaeology, it was noted that Foucault could not explain why his analyses should be taken seriously. Genealogy overcomes this by first interpreting local domains in the present so as to problematize and then attempt a critical diagnosis. 'Problematization' and 'diagnosis' are two important but closely related notions that accompany Foucault's genealogical studies. The notion of problematization first appeared in *Discipline and Punish* and then with increasing frequency in Foucault's subsequent works (Rabinow and Rose 2003: xvii). Problematizing an experience or practice encountered in

²⁶ When considering that it is descended from Nietzsche, the genealogical style of Foucault has been argued to be "a retreat to a weak form" (Bouchindhomme 1992: 323). Instead of resorting to an extremist denunciation of the philosophical institution of reason for its historical role in legitimating government through the codification of rules that claim to obey rational principles but are, in actuality, embedded moral prejudices, Foucault's (cf. 1982[1979]: 226; 1988b[1983]: 35-7) primary concern was an analytical one, namely understanding how different rationalities and technologies have been historically implicated in governing social practices (Bouchindhomme 1992: 321).

the present can serve as the point of departure for analysis, but it is also one of the main historical objects for analysis – it would be entirely misleading to claim that it is only the practitioners of studies in governmentality who problematize present experiences or practices (Rajchman 1992: 223). So, in order to avoid any conceptual slippage, the notion of problematization, when serving as the point of departure for analysis, will be referred to as the diagnosis, for it attempts to erase the self-evidence of an experience, thereby making it difficult again for thought (Dean 1999: 28; Foucault 1988g[1981]: 155, 1991b[1977]: 83). In this way, Foucault's (1988g[1981]: 156, 1988h[1982]: 11) studies are always in some way tied to an experience that directly relates to his present, one that he intends to make difficult so as to not only think differently about it, but also in order to attempt to transform his relation to it.²⁷

Diagnosing an experience or practice involves a significant degree of interpretation concerning what should be taken seriously in the present. This relates to the “critical ethos of genealogy” (Dean 1999: 42). When studies in governmentality embrace this critical ethos, they do so in order to distance themselves from the fashionable tendency in political and social theory to make grandiose, epochal proclamations about the status of the present, often in terms of an impending or already realized catastrophe (Barry et al. 1996a: 4; Dean 1999: 41; Foucault 1984a: 39; Rose 1999: 13; Rose et al. 2006: 98). Instead, studies in governmentality are concerned with problems in local domains, where, in the present study, it is government in the ecological domain of being which will be diagnosed. The critical orientation of this diagnostic interpretation does not involve rendering normatively based judgements or prescriptions regarding its object of study (Foucault 1988g[1981]: 154-5, cf. 1988e[1978]: 107). When examining programs of

²⁷ The problematization of an experience in the present is an element of Foucault's (1984c[1983]) argument that, for intellectuals especially, “‘an experimental’ attitude is necessary; at every moment, step by step, one must confront what one is thinking and saying with what one is doing, with what one is” (374).

government, then, analysis should avoid arbitrating amongst the diverse, often competing, solutions that are invariably encountered. Furthermore, the task of analysis does not reside in positing alternatives that have yet to be considered (Foucault 1983a: 231; cf. Dreyfus and Rabinow 1983: 257). Rather, this diagnosis attempts to render visible the multitude of contingent processes, “the pluralisation of causes”, that constitute the unifying singularity of the event, in this case, the program of government (Foucault 1991b[1977]: 76, cf. 1984b[1977]: 82).

As the complexity and fragility of these processes become apparent, diagnosis intends to show that governmental programs are not only rationally calculated attempts to structure present domains of being, regimes of practices, fields of experience, and so on, but they also reflect an array of possibilities and constraints confronting *our* experience of the present (Burchell 1996: 33; Dean 1996b: 210, 1999: 44; Rabinow and Rose 2003: xiii). In this way, the diagnosis of the present attempts to introduce an untimely attitude, such that previously self-evident practices and habitual thoughts are made uncertain and difficult (Barry et al. 1996a: 5; Foucault 1988g[1981]: 155, 1991b[1977]: 83-4; Rose 1999: 20). This untimely attitude is not intended to be demobilizing. By raising questions that pose problems for our government in the present, necessitating, in turn, the future construction and elaboration of solutions, this untimely attitude encourages the inventiveness or *spiritualité* that Foucault (1980e[1977]: 133, 1991b[1977]: 82, 2008[1979]: 94) sought in earnest to cultivate in the contemporary political domain (cf. Gordon 1991: 6-7; Rose 1999: 3).²⁸ Put differently, the diagnosis of the present attempts to forge an

²⁸ Indeed, no political program follows immediately from the work of Foucault (1984c[1983]: 375; 1988g[1981]: 155; 1988h[1982]: 10). For Foucault (1990b[1977]), the main aim of analysis is not to legislate “what is to be done” (84). This is a point that is repeatedly emphasized by several scholars whose analyses proceed from and considerably builds upon Foucault’s work – studies in governmentality do not offer prescriptions about how to practice one’s freedom; they are not ethical guides (Dean 1999: 38; Rose 1999: 10). As Foucault (1980b[1977]) further clarifies in regards to his *Introduction* to the *History of Sexuality* series, ‘it is not up to me to lay down how the book should be used’ (192). However, in 1979, Foucault is known to have proposed and offered his assistance to French Socialists with the development of a distinctly socialist governmentality, a project which never came to

opening for critical thought, “understood as a space of concrete freedom i.e. of possible transformation” (Foucault 1988b[1983]: 36, cf. 1988h[1982]: 11). Deleuze (1988) discusses the transformative potential of this genealogical diagnosis:

We will then think the past against the present and resist the latter, not in favour of a return but ‘in favour, I hope, of a time to come’ (Nietzsche), that is, by making the past active and present to the outside so that something new will totally come about, so that thinking, always, may reach thought. Thought thinks its own history (the past), but in order to free itself from what it thinks (the present) and be able finally to ‘think otherwise’ (the future). (119)

Despite constantly reformulating the central themes and historical objects of his investigations, Foucault’s application of archaeological analysis alongside genealogical diagnosis would remain consistent throughout his later works (Dean 1994: 34). Genealogy would give analysis its present-relevance, by diagnosing an experience in the present so as to investigate how and if it is necessary to transform one’s relation to it. As indicated above, this diagnosis necessarily requires some interpretation as to which problem is significant and in need of further investigation. Through the double bracketing approach, archaeology provides some degree of detachment from this problem, so that analysis can discern how one is governed in relation to it, through the production of true and meaningful statements. The combination of the critical ethos of genealogy and the discourse analysis of archaeology has been referred to as ‘interpretative analytics’ (cf. Dreyfus and Rabinow 1982, 1986). The interpretation diagnoses government in a particular domain and asks how it was historically rendered as problematic. Archaeological analysis of true and meaningful serious statements will provide the necessary

fruition (Donzelot and Gordon 2008: 57; cf. Foucault 2008[1979]: 94). Thus, the potential for inventing a rationality of government cannot be entirely dismissed i.e., a ‘post-social’ governmentality. Since Foucault’s death, however, scholars working from the governmentality approach have yet to actively pursue this project as they have arguably been limited by a staunch reluctance to move beyond analytics and directly into the realm of political criticism, contestation, and invention (O’Malley et al. 1997: 506-7).

detachment with which to examine how this problem was posed and the particular governmental rationalities and technologies that were applied to solve it. Finally, interpretative analytics is not intended to produce normative statements about its objects of study. According to Dreyfus and Rabinow (1986), “it has to do with articulating common concerns and finding a language which becomes accepted as a way of talking about social situations, while leaving open the possibility of ‘dialogue’, or better, a conflict of interpretations, with other shared discursive practices used to articulate different concerns” (115).

Statement of Method

Having given an account of the epistemological perspective and methodological approach informing the analysis, the final section of this chapter will now detail the method that was followed when assembling and analyzing the documents of the archive. It would have been convenient to label this method ‘document analysis’, but that is a generic term and does not in any way acknowledge the significant historical components of this study. I would prefer to term this method ‘historical archive reconstruction’, for not only does it require the assembly of an archive of documents relevant to a specific program of government, but it also involves tracing the diverse historical trajectories of the contingent discourses, events, and practices particular to this program, especially in terms of the general problem to which it was directed as a solution.

The notion of reconstructing the archive of the program is also meant to distinguish this study from what is commonly identified as *the* ‘post-structuralist’ method of discourse analysis, deconstruction, as practiced by Jacques Derrida. Whereas deconstruction practices a form of hermeneutics to make the visible invisible, reconstruction seeks the opposite – that is, to render the invisible visible by identifying the multitude of contingent discourse, practices, and events

that culminate in the singularity of the program (cf. Rabinow and Rose 2003: viii). Historical archive reconstruction is not intended to be pitted into a polemic with post-structuralist deconstruction – it just proceeds from a different point of departure. Making the invisible visible, particularly when analyzing a text, requires interpreting it as a practice with real and diverse effects, as having a positivity and density related to discourse; whereas making the visible invisible masks the meaning and significance of the text by referring to the ambiguity of the floating signifier, which reflects the ultimate contingency of language. In short, historical archive reconstruction can be considered as a kind of materialist analysis, where discourse is treated as a technical and positive practice.

Localizing the object of study

As mentioned in the introduction, this work constitutes a reversal of the field of inquiry of green criminology. Instead of attempting to define and examine the forms of environmental harm that result from human activity or macro-sociological phenomenon, this study is concerned with how different rationalities and technologies are assembled and deployed through discursive practices which have been articulated in response to environmental problems constituted by theoretical knowledges such as green criminology. Prior to turning to the analysis of the serious statements that comprise the program, the first task was to select a government program that could be regarded as a solution to an ‘environmental’ problem i.e. environmental harm, air, water, or soil pollution, climate change, etc.

The One-Tonne Challenge, a program of government that sought to modify and regulate the conduct of each and all in relation to the problem of climate change was chosen as the object of this study. As indicated above, it was a relatively formal and cogent articulation of a much broader program of government, one that is by no means specific to the state alone. Indeed,

attempts to inculcate ‘sustainable lifestyles’ or ‘sustainable consumption’ are ongoing, as evinced in the practical guides disseminated by ‘non-governmental organizations’ (e.g. Greenpeace 2007) as well as ‘private individuals’ (e.g. Goodall 2007). So, variants of this government program continue to be articulated outside of the state, and the analytic grid of governmentality would be just as well suited for an analysis of these documents. However, the One-Tonne Challenge seemed to be more appropriate for analysis because it contains a much more acute political dimension, in addition to the apparent ethical one that is implied by any program of government that seeks to inculcate a specific ‘lifestyle’ as a societal norm. Indeed, the very fact that this program of government was codified as among the competencies of the state is politically significant. This codification indicates that the problem of climate change was one that state authorities took seriously, such that they would gather the best scientific and technical experts to counsel them when elaborating their comprehensive ‘climate change’ plans and programs (cf. GC 2000; SSCEENR 2004a).

Climate change is now widely accepted as an established scientific truth. Statements that claim to be scientific yet remain critical of the relationship between human activities and climate change are discursively rendered as ‘*outlier science*’ as evinced in a public address given by former Canadian Minister of the Environment (Anderson 2003: 10).²⁹ Until humans can live in harmony with non-humans and the natural environment, until humans can govern themselves so as to respect the balance of life processes, the problem of climate change will surely continue to

²⁹ As the Honorable David Anderson (2003) candidly explained: ‘Our policies are based on strong consensus among the clear majority of climate scientists – people who have spent their careers in this discipline. And their consensus view is that the peer-reviewed science is only getting more and more convincing. Yes, there are some scientists who disagree. There always are. That is the way science works. But theirs is outlier science. They are at the margins of the issue. Their arguments have failed to find support among their peers. Are they wrong? Only time will tell’ (10).

‘necessitate’ government. But, how exactly is this problem governed? What rationalities and technologies are applied? Following other studies in governmentality that have diagnosed the operation of an ecological rationality of government (Luke 1999; Oels 2005; Rutherford 1999), the present one will hypothesize that the problem of climate change is the object of ecological government. Thus, the following research question will be addressed for the analysis of the One-Tonne Challenge: (1) To what extent has this ecological rationality become autonomous as a distinct, systematic mode of reasoning about government? The rigorous pursuit of this question guided the analysis of the serious statements in the archive of the program.

With the One-Tonne Challenge as the object of study, analysis would not only attempt to *interpret* an ecological rationality of government in operation throughout the documents of the archive, but it would also have to *diagnose* the possible political and ethical dangers that accompany it. So, the following question will also guide this research: (2) When the state ascribes to an ecological rationality of government, what are the stakes for the “community of the governed” (Foucault 2003b[1984]: 64)? This ‘community’ is by no means universal to every program. As shown in the course of the analysis, the discourse of the One-Tonne Challenge constitutes the community of the governed as consumers, which proves significant as the theoretical conception of ‘consumer’ has a number of effects on the articulation of the program.

Assembling and organizing an archive

Following the selection of the object of study and the formulation of the research questions, the analysis sought to trace the historical trajectory of the problematization of climate change. This second task actually served as the point of departure for the analysis. As indicated above in the discussion of the methodological approach, examining how climate change became a problem according to which ‘we’ would be governed requires the adoption of a detached and

untimely attitude: this history will be told by the documents themselves but it will be made sense of through the analytical grid of governmentality and its conceptual tools. Another important task, one that Foucault did not discuss at great length in his methodological expositions, consisted of acquiring documents relevant to his chosen object of study (cf. Dreyfus and Rabinow 1983: 59). While such a discussion would have perhaps been helpful, it is ultimately very difficult to provide rigid and formal criteria according to which the documents of an archive are to be selected.

For my purposes, I proceeded to assemble the documents of the archive through what is widely known as a ‘snowball sample’. This sampling method consists of obtaining the most recent document and proceeding to acquire older ones, where this acquisition would be facilitated, in large part, through direct references in the documents themselves. As it turns out, the most recent document published on the One-Tonne Challenge was its audit and evaluation (DAEC 2006). Most of the documents that would eventually be acquired for this study were referenced and reviewed by the audit and evaluation of the program (cf. DAEC 2006: 37). Thus, it was only a matter of obtaining these documents as their inclusion for review in the audit and evaluation already indicated that they were relevant to One-Tonne Challenge and deserving of analysis for this study. Among the more notable documents referenced in the audit and evaluation: all of the Government of Canada’s ‘comprehensive’ climate change plans (2000, 2002a, and 2005), *Your Guide to the One-Tonne Challenge* (2004), and the important program review conducted by the Standing Senate Committee on Energy, the Environment and Natural Resources (2004). Through the snowball sampling approach, I obtained those documents which articulated the program of government under study, but they did not address *how* climate change was problematized; they were produced as a solution. In the documents published by the

Government of Canada, climate change was already taken-for-granted as a problem necessitating government.

By examining the serious statements in these documents I acquired insights related to the problematization of climate change. For instance, even though they are written several years apart, there are a number of events and elements repeated throughout the documents. For instance, the Kyoto Protocol and the United Nations Framework Convention on Climate Change (UNFCCC) are events that are regularly referenced in the serious statements of these documents; “sustainable development” is a recurrent element in them as well. Based on these indicators, I proceeded to select and acquire several key documents from the United Nations that addressed the events and elements mentioned in the publications by the Government of Canada. By going back to some of the earliest formal documents produced by the United Nations that discuss climate change, analysis was able to discern the discursive broadening of ‘climate change’. Its problematization was particularly evident in the report delivered to the United Nation General Assembly in 1987 by the World Commission on Environment and Development where it was clear that climate change was no longer considered to be a strictly scientific problem but was one that needed to be governed, otherwise there could be undesirable consequences for the human species as a whole.

In the attempt to make this genealogical history as comprehensive and precise as possible, documents from the United Nations were constantly added to the archive (cf. Appendix A). These documents addressed the important events of this historical trajectory, as the problematization of climate change would serve as the prelude to the establishment of intergovernmental organizations and international treaties. Although the documents obtained from the United Nations do not have an immediately visible link to the programming of the One-

Tonne Challenge, analysis will attempt to highlight how the discourses, events, and practices discussed throughout the formal documents of the United Nations are continuous with the climate change plans and programs of the Government of Canada. In this way, the documents will tell the story of how climate change was articulated as a problem requiring solutions, one that is now implicated in the government of *our* political and ethical practices, where the One-Tonne Challenge is connects these two practical domains.

Analyzing the serious statements of the archive

With the exception of the United Nations documents, this study, when analyzing the articulation of the One-Tonne Challenge in the Government of Canada's climate change plans, proceeded chronologically (cf. Appendix B). Piece by piece, these documents would articulate the key programmatic statements of the One-Tonne Challenge. However, it should be noted that this program was not codified into the Government of Canada's first comprehensive climate change plan, *Action Plan 2000*, which suggested that the One-Tonne Challenge was by no means a given i.e. necessary or inevitable. Analysis would have to attempt to account for this discontinuity in the Government of Canada's '*comprehensive*' climate change plans, for the state did not initially articulate a formal and coherent program through which to govern the population in relation to this problem.

The beginnings of the One-Tonne Challenge would be articulated in the 2002 *Climate Change Plan*, when the individual objective of a one-tonne reduction in personal greenhouse gas emissions was first detailed. Several '*practical tips*' regarding actions to be taken '*at home, at work and on the road*' are contained in this climate change plan; these serious statements would be repeated and considerably expanded upon in *Your Guide to the One-Tonne Challenge* (GC

2004). The 2005 climate change plan was the first to discuss this public education and outreach program by its proper name and to conceptualize it according to its various components.

For all of these documents, archaeological analysis of the key programmatic statements was carried out. This required using the double bracketing approach on the serious statements of the program, thereby keeping analysis focused on their surface meaning and avoiding the hermeneutic approach. Analysis isolated those statements that constitute the One-Tonne Challenge as a program of government according to two analytical dimensions: descriptive statements that claim ‘what is to be known’, and prescriptive statements that claim ‘what is to be done’. Foucault (1991c[1977]: 79) would term these to be, respectively, the regimes of veridiction and jurisdiction. Through the construction of an archive that is as comprehensive as possible, this study will attempt to provide an account that not only makes this practice of government intelligible but attempts to diagnose its potential dangers for the political and ethical domains. This diagnosis must be based on the results obtained from the analysis of the serious statements in the archive in order to ensure that it is not merely a subjective invention. These dangers arise from government itself, for it obeys a technological rationality. Interpretative analytics interprets this rationality and diagnoses its peculiar dangers.

Chapter summary

This chapter has sought to elaborate on the epistemological perspective and methodological approach that will be relied upon in the subsequent analysis. Through the combination of irrealist empiricism and interpretative analytics, analysis will not offer causal explanations regarding its object of study, so much as it will attempt to make intelligible the diverse processes that are the conditions of existence for the One-Tonne Challenge (cf. Foucault 2007[1978]: 238-239).

Although this statement of method does provide a response to some of the criticisms that have been recently levelled at governmentality studies, it probably leaves just as many unattended. As a result, the provisional status of the method should be stressed for, as Foucault (2007[1978]) explains, “no method should be a stake in itself. A method should be made in order to get rid of it” (119). In order to be discarded once it has dutifully served its purpose, the method ascribed to here will provide an analysis that will strive to yield, not “the maximum of possible illumination, but at least a fairly fruitful kind of intelligibility” (Foucault 1991b[1977]: 74; cf. Rabinow and Rose 2003: xv). Indeed, the most important component of this study rests with its practical effects, where it is intended to force one to think differently about how one is governed. The programs offered as solutions to our pressing political and ethical problems are by no means natural or even necessary. The greatest appeal to undertake this study in governmentality resides in its potential to induce an untimely attitude, such that the fragility and contingency of the program can no longer be masked – thus inviting the possibility for invention in the modern art of government.

CHAPTER THREE: THE PROBLEMATIZATION OF CLIMATE CHANGE

With the analytic grid of governmentality, its attendant conceptual tools, and the epistemological perspective as well as methodological principles informing analysis explained, this chapter will commence with the analysis of the One-Tonne Challenge, a program of government which was formally implemented from March 2004 to April 2006 by the Government of Canada (DAEC 2006: 5-6). As a study in governmentality, the analysis will not be concerned with the realization of the program, so much as with how its invention, calculation, and evaluation assemble and deploy governmental technologies and rationalities. Through this analysis, it will become clear that the One-Tonne Challenge has a history that extends well beyond the two year time period spanning its official implementation. Indeed, as indicated in the preceding chapter, no program of government can be adequately understood without first examining the historical trajectory of the problematization to which it was directed as a solution.

The One-Tonne Challenge was conceived and elaborated as part of the Government of Canada's solution to the "*global problem*" (GC 2002: 55; cf. 2002: 2, 2005: iii) of climate change. The first section of this chapter will explain how the knowledge of climate change was advanced as a problem requiring government as early as 1987 (cf. WCED 1987). Even before its establishment as a scientific truth, climate change was problematized through the normative principle of sustainable development. Maintaining that the needs of the future must also be taken into account when calculating those in the present, sustainable development was repeatedly invoked to ensure that the climate change became a serious political problem, one that would have to be addressed by each and every nation-state.

The discussion in the second section will consider how sustainable development and climate change were transposed by the Government in Canada into its first "*comprehensive*"

climate change plan, *Action Plan 2000* (cf. GC 2000: 2). While this comprehensive plan did periodically address the conduct of “*Canadians*” (cf. GC 2000: 13), it does not articulate a cogent and formal program that specifically aims to govern the conduct of each and all in relation to climate change. With the Government of Canada’s second “*comprehensive*” climate change plan (cf. GC 2002: 55), this would no longer be the case. The third and final section will demonstrate how a discursive shift in the conception of economy from *Action Plan 2000* to the *2002 Climate Change Plan* can be understood as a condition of existence for the One-Tonne Challenge, which, as will be discussed in the fourth and fifth chapters, ultimately sought to transform the market economy by governing the energy-efficiency of consumers, raising the politically significant question of how this “*market transformation*” (cf. DAEC 2006: 2) is intended to occur i.e. gradually or rapidly, through public education or regulatory intervention.

An ecological principle of government

A detailed analysis is not required to reveal that the One-Tonne Challenge and the Government of Canada’s (cf. GC 2000: 2, 2002: 5, 2004: 3) climate change plans have, as among their conditions of existence, the problematization of climate change. Indeed, they are premised on the truth that climate change is occurring because of increases in greenhouse gas emissions from human activities and practices (cf. GC 2004: 3). Otherwise, these climate change plans and programs would be completely cynical exercises in government, for why would human conduct need to be governed if it was not related to the problem? For the purposes of analysis, it would be a gross oversimplification to maintain that the accumulation of scientific evidence confirming the truth of human-induced climate change was sufficient in itself to render climate change into a problem for government. That is, although the ‘discovery’ of climate change has always been a

problem constructed and investigated through the methods and instruments of modern science, it has only recently been made into a political problem requiring government, understood in both its broad and narrow sense.

Thus, the historical account provided in this section proceeds from what was, at the time, an ongoing scientific debate concerning whether the climate of the entire planet is gradually becoming warmer as a result of exponential increases in anthropogenic greenhouse gas emissions. As scientific knowledge confirming the phenomenon of climate change became increasingly accepted and more widely disseminated by, among others, the international political institution of the United Nations, it would be discursively rendered into a political problem necessitating government. This was accomplished through the definition and elaboration of the normative principle of sustainable development. The discussion in this section will begin by examining the *Report of the World Commission on Environment and Development*, which was delivered to the General Assembly of the United Nations in 1987. This document advances what has perhaps become the most influential definition of sustainable development. What is more important for present purposes, however, is how the WCED Report applies this principle in order to construct climate change as a problem that must be managed by *every* nation-state. Following this discussion, the second part of this section will turn to how the problematization of climate change was embedded in institutional practices, first with the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988 and then the United Nations Framework Convention on Climate Change (UNFCCC) in 1992, where the latter would eventually yield the legally binding international treaty, the Kyoto Protocol, in 1998 (cf. Appendix B).

Sustainable development and 'Our Common Future'

Presented to the United Nations General Assembly in 1987, the *World Commission on Environment and Development (WCED) Report*, also known as *Our Common Future*, is the *locus classicus* of sustainable development.³⁰ With the definition and elaboration of the normative principle of sustainable development, it will be argued that a distinctive ecological rationality government emerged. That is, just as the vocabulary of 'laissez-faire' or 'least government' is considered an axiomatic principle for the practice of liberal government, 'sustainable development' has become the defining principle of ecological government. After noting that "*'environment' is where we all live; and 'development' is what we all do in attempting to improve our lot within that abode*" (xi), the WCED Report (1987) defines the principle of sustainable development: "*[h]umanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs*" (8). Further on, the WCED Report (1987) formulates the principle as follows: "*[s]ustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future*" (40).

At the outset, it might be noted that, in contrast to the liberal formula of 'less government', 'sustainable development' offers a different emphasis, where government would have to be calculated and projected on the basis of present *and* future needs. That is, far from less government, the rational calculation of present and future needs seems to suggest an emphasis on more government. At this juncture, such an assertion definitely requires further empirical

³⁰ The 1987 WCED Report is also often referred to as the 'Brundtland Report', after its Norwegian Chairman, Gro Harlem Brundtland.

investigation. So, the discussion will now seek to address how the principle of sustainable development has been put into practice. Scientific evidence concerning climate change was already receiving widespread attention by the time of the 1987 WCED Report, which contains a section on “*Managing Climatic Change*” (cf. WCED 1987: 174-7).

As explained in the WCED Report (1987), “[a]fter reviewing the latest evidence on the greenhouse effect in October 1985 at a meeting in Villach, Austria [...] scientists from 29 industrialized and developing countries concluded that climate change must be considered a ‘*plausible and serious probability*’” (175). To be sure, this statement on climate change – that it is a ‘*plausible and serious probability*’ – made by the scientists at Villach was only a precursor to subsequent ones, which gradually assumed far greater certainty about its actual occurrence and its causal relation with the greenhouse gas emissions generated by human activities. Despite the relative absence of scientific confirmation, the principle of sustainable development can be seen in practice in the WCED Report (1987: 176) as it considers *the future possibility of climate change* and its attendant environmental effects, which, among others, were predicted as an average surface temperature increase of between 1.5° and 4.5° Celsius and a rise in the sea level between 25 to 140 centimetres.³¹

So, even though knowledge regarding climate change had yet to attain the status of a scientific truth, where the occurrence of this phenomenon would no longer be put into question,³² the WCED Report considers how present actions, or inactions, could be compromising future needs:

³¹ As indicated by the Government of Canada in its 2002 *Climate Change Plan*, the IPCC estimates increases in average surface temperatures, ranging from 1.4° to 5.8° Celsius by 2100 (cf. GC 2002: 5).

³² By the time of *Action Plan 2000*, the Government of Canada maintains scientific knowledge concerning climate change as paradigmatic. “*Our scientific understanding of climate change is sound and leaves no doubt that it is essential to take action now to reduce emissions*” (GC 2000: 15).

*There is no way to prove that any of this will happen until it actually occurs. **The key question is: How much certainty should governments require before agreeing to take action?** If they wait until significant climate change is demonstrated, it may be too late for any countermeasures to be effective against the inertia by then stored in this massive global system. The very long time lags involved in negotiating international agreement on complex issues involving all nations have led some experts to conclude that it is already late. Given the complexities and uncertainties surrounding the issue, it is urgent that the process start now. (WCED 1987: 176, emphasis mine)*

Here, the posing of this ‘key question’ is intended as a rhetorical device. This question can be viewed as characteristic of the principle of sustainable development for it demonstrates an evident concern with how ‘governments’, that is, nation-states, had not *already* taken action with regard to future needs. As the passage above suggests, these future needs could be compromised with the onset of climate change, unless the inertia of the ‘*massive global [political] system*’ is overcome in the present. The invocation of future needs, then, has given rise to this latter present need: to negotiate international agreement on climate change and produce effective countermeasures to address it.

Of course, there is some conceptual slippage to be aware of here: ‘governments’ is definitely not identical with government – the conduct of conduct (cf. Dean 2007: 36). Despite this, the discussion of ‘governments’ indicated in the WCED Report can be related to government in the broad sense. That is, ‘governments’ – sovereign nation-states – are the intended subjects of government in the passage above. Nation-states are to take immediate action on climate change; their conduct in relation to climate change needs to be given the appropriate direction and guidance. By problematizing climate change through the principle of sustainable development, the WCED Report is attempting to do just that: directing nation-states to view climate change as a serious political problem and to devise government programs to remedy it. As demonstrated in the following passages, the dissemination and articulation of the principle of

sustainable development beyond the 1987 WCED Report would be considerable, especially as ‘confidence’ grew in proportion to the ‘weight’ of scientific evidence concerning human-induced climate change.

From Paradigm to Protocol

Only a year after the WCED Report was delivered to the United Nations General Assembly, the scientific study of climate change became an institutional practice through the establishment of the Intergovernmental Panel on Climate Change (IPCC) in 1988 (UNFCCC 2004: 10, 2006: 18).³³ The IPCC does not carry out its own research on climate change: composed of hundreds of nominated scientific experts from a wide range of academic disciplines, from the natural, physical, chemical and earth sciences to the biological, medical, human and social sciences, the IPCC regularly publishes assessments of the current scientific and technical peer-reviewed literature on the causes and effects of climate change, not only as the problem pertains to natural ecosystems but also to human societies (UNFCCC 2004: 14; cf. GC 2005: 3-4).³⁴

The Government of Canada has suggested, in its 2005 climate change plan, that the “[e]volution in our understanding of the science of climate change can be viewed through the key scientific conclusions from the three IPCC assessments to date” (43). It proceeds to describe this evolution as linear, particularly in terms of how the scientific conclusions of the IPCC progressively demonstrated greater certainty as to the causal relation between anthropogenic sources of greenhouse gas emissions and climate change (GC 2005: 43; cf. UNFCCC 2004: 18-

³³ The present study draws from Dean’s (1999: 21) understanding of ‘institutional practice’, where a practice – a relatively systematic way of doing things – is made formal and routine.

³⁴ Criticism has been levelled at the selection process of scientific expertise in the IPCC. It has been argued, for instance, that the scientific experts of the IPCC are disproportionately from the countries of the North, thereby marginalizing the perspectives of the South where most ‘developing’ countries reside (cf. Oels 2005: 197).

9). That is, the IPCC grew increasingly confident that, as human activities released more greenhouse gas emissions into the atmosphere, average global surface temperatures would become warmer.³⁵ Still, even though this knowledge would eventually attain the status of a scientific paradigm with the publication of subsequent IPCC assessments, climate change was already regarded in the United Nations as a problem necessitating the elaboration of governmental solutions. To be more specific, the publication of the First IPCC Assessment is viewed to have provided the “*basis for arriving at the Framework Convention on Climate Change*” (GC 2005: 43).

First negotiated in 1992, the United Nations Framework Convention on Climate Change (UNFCCC) is an international treaty, which initially obtained 154 signatories before growing to 194 following negotiations in 1994 (UNFCCC 2004: 3, 14, 2006: 18; cf. GC 2005: 43). Every nation-state that signed on to the UNFCCC accepted the conclusion of the IPCC in its First Assessment Report, namely, that climate change is a significant global problem with natural and human causes (UNFCCC 2004: 14). From this, nation-states agreed to set as their target the reduction of anthropogenic greenhouse gas emissions to 1990 levels (UNFCCC 2004: 14). Further, the UNFCCC (2004: 14) required signatories to indicate the government programs that they have put in place to address the newly identified and articulated political problem of climate change and achieve their national emission reduction targets. Finally, signatories were required to regularly submit inventories of their annual greenhouse gas emissions according to certain established methodological and measuring criteria (UNFCCC 2004: 14). “*For the preparation of greenhouse gas inventories a system has therefore been developed so that emissions can be*

³⁵ The fourth and most recent IPCC Assessment Report (IPCC 2007) concludes that “*there is **very high** confidence that the global average net effect of human activities since 1750 has been one of warming*” (37, emphasis in original).

expressed on a comparable basis in terms of their global warming potential – as tons of carbon dioxide equivalent” (UNFCCC 2004: 14). Since the greenhouse gas inventory is the standard technique according to which the performance of nation-states is routinely measured, evaluated, and compared in regards to greenhouse gas emissions, it has crossed the technological threshold (cf. Dean 1998: 63-5). As demonstrated further on in the analysis, this ecological technology of government is not restricted to measuring the performance of the nation-state; it can also take measurements of specific sectors of a national economy. Most important of all for this study, however, is the extension of this technology to the levels of the population and the individual, where this will be further discussed in the next chapter.

Despite the obligations assigned to its signatories, the UNFCCC was not a legally binding international treaty until the 1998 Kyoto Protocol, which was adopted by over 160 nation-states (cf. GC 2000: 2). *“The Kyoto Protocol established legally binding targets for those industrialized countries that ratify the agreement and the timeframes within which those targets are to be met”* (GC 2002: 6). These emission-reduction targets were set *“in order to achieve sustainable development”* (UN 1998: 9). Despite the statement of this ecological principle, the analysis provided by Angela Oels (2006: 199) indicates the operation of neo-liberal techniques in the Kyoto Protocol, which she properly regards as a program of government. For instance, when this program proposes that markets be put in place for nation-states to trade credits for allotted greenhouse gas emissions, Oels (2006: 199) argues that this primarily reflects a calculation of emission reductions in terms of direct economic cost rather than possible future needs. Furthermore, the nation-state is constituted in the program through the neo-liberal technique of agency, where it is recognized in the program as a subject responsible for its obligations but free in terms of its choice of specific actions to meet them (Oels 2006: 199). Given this complex

assemblage of techniques of the market and agency as well as the statement of the principle of sustainable development, it would appear that the Kyoto Protocol is neither entirely ecological nor neo-liberal. Both rationalities of government are evinced in the articulation of this program. Further analysis would be required to discern exactly what “transmissions, transferences, interferences” (Foucault 1988b[1983]: 37) occur amongst the governmental rationalities articulated within the program. The Kyoto Protocol is not, however, the object of this study. What is relevant to the current study is how the documents in the archive are positioned in regards to this international treaty, which is a program that attempts to govern the greenhouse gas emissions of nation-states.

As the 2002 *Climate Change Plan for Canada* proceeds to indicate, “*Canada was a key supporter of, and contributor to, the Kyoto Protocol*” (GC 2002: 7). The Government of Canada supported the Kyoto Protocol because it maintained climate change to be a “*global problem*”, necessitating a “*global solution*” (cf. GC 2000: 2). This is illustrated in the following passage: “*Climate change is a global challenge – the affect on the world’s climate is the same regardless of where GHG emissions are released. For that reason, the Government of Canada is committed to global multilateral approaches addressing this challenge*” (GC 2005: 1). The support of the Government of Canada for the Kyoto Protocol is also related to its specific contribution. As the 2005 *Climate Change Plan* goes on to indicate:

The Kyoto Protocol is the only global mechanism with targets to reduce GHG emissions, although its membership is not as broad as Canada would wish. However, the Protocol has broad international support and contains innovative flexibility mechanisms that Canada put considerable effort into designing. For these reasons, Canada is a strong supporter of the Kyoto Protocol. (GC 2005: 1)

These ‘*flexibility mechanisms*’ are the techniques of agency mentioned earlier; that is, the Kyoto Protocol allows nation-states to freely choose how to meet their emission reduction targets,

which they are legally responsible for. Again, “[t]he Kyoto Protocol does not tell us how to meet this target that is entirely up to Canadians” (GC 2002: 7).

This section has sought to trace the historical trajectory of the problematization of climate change. It was argued that climate change was rendered into a problem requiring government through the principle of sustainable development. By having to take into account future as well as present needs, climate change became an immediate problem that had to be taken seriously, despite the relative absence of scientific consensus in 1987. This consensus would eventually be attained with the successive publications of IPCC Assessment Reports, but most nation-states had already agreed to the UNFCCC by 1992. This international treaty required nation-states to regularly submit greenhouse gas inventories, which entailed the adoption of a common accepted standard of measurement. The greenhouse gas inventory is an ecological technology of government that not only measures annual emissions, but also compares and evaluates the performance of these nation-states, relative to one another and over time. The second requirement that the signatories of the UNFCCC agreed to follow consisted of reporting their national plans and programs, those which have been devised and implemented to address climate change. The Government of Canada was legally obligated to adhere to both of these requirements once it signed the Kyoto Protocol in 1998.

The emergence of the climate change plan

Despite the flexibility mechanisms its delegates helped introduce, the 2005 climate change plan maintains that “*the Kyoto target is greatest for Canada*” (GC 2005: 42). “*Under the Protocol, Canada has agreed to lower its greenhouse gas emissions to six percent below 1990 levels during the first commitment period (2008-2012)*” (GC 2000: 7, cf. GC 2005: 42). Following its

ratification of the Kyoto Protocol in 1998, the Government of Canada began “*taking concrete and immediate steps to engage governments, businesses, communities and individual Canadians to address climate change*” (GC 2000: 13). This section will discuss these initial ‘*concrete and immediate steps*’ in order to demonstrate how the problem of climate change and the principle of sustainable development were transposed into the plans and programs of the Government of Canada.

Its first step was to establish the Climate Change Action Fund (CCAF) in 1998. The CCAF was viewed as the precursor to the One-Tonne Challenge, as it funded public education programs which sought to educate Canadians about what is to be known and done in regards to climate change. Once having discussed the CCAF, the second part of this section will consider the Government of Canada’s first “*comprehensive*” climate change plan, *Action Plan 2000* (cf. GC 2000: 2). What is interesting about this document is the relative absence of any substantive discussion concerning public education programs. This indicates that the Government of Canada’s subsequent articulation of the One-Tonne Challenge is definitely not to be regarded as inevitable: its comprehensive climate change plans did not necessarily tend towards the inclusion of public education programs.

Towards an ecological education

The 1998 Budget established and allocated the Climate Change Action Fund (CCAF) \$50 million of funding annually, initially for three years with the provision that this would be extended until 2004, in order “*to support early actions to reduce GHG emissions, to reach out to the public, and to increase understanding of the impacts, costs and benefits of implementing the Kyoto Protocol and the options open to Canada*” (DAEC 2006: 5fn). Overall, there were “*four components*” to the CCAF (GC 2000: 13). The most important one for present purposes was the

‘Public Education and Outreach’ (PEO) component, which “*was the first major climate change program of its type [in Canada]*” (DAEC 2006: 5). That there might be continuity between the PEO component of the CCAF and the One-Tonne Challenge is worthy of further investigation.

Indeed, prior to the articulation of the One-Tonne Challenge as an explicit program, the PEO component of the CCAF was already “*increasing Canadians’ awareness and understanding of climate change and how they can do their part to reduce emissions*” (GC 2000: 13; cf. DAEC 2006: 5). It accomplished this by allocating funds to individual projects in ecological education, where awareness and understanding of climate change would be inculcated in any one of the four key target groups: “*the general public, business and industry, communities, youth and educators*” (DAEC 2006: 5). While many of the “*successes and lessons learned*” from the PEO component of the CCAF were carried over to the One-Tonne Challenge (DAEC 2006: 5), the central distinction is that the latter sought “*to move away from the funding of individual projects to a more targeted approach that developed strategic alliances with partners and used marketing activities to help point Canadians to the services and programs offered by the federal government and these partners*” (DAEC 2006: 18). In this way, the One-Tonne Challenge would constitute a much more concerted effort on the part of the state to educate the population about climate change.

Transpositions into the first climate change plan

The CCAF was not the only initiative undertaken by the Government of Canada following its ratification of the Kyoto Protocol.

In 1998, at the direction of Canada’s First Ministers, more than 450 experts from industry, academia, non-government organizations and municipalities and federal, provincial and territorial governments joined in a two-year consultation process to develop solutions needed to address climate change. Initiatives in this document draw extensively from the results of this work, capture many of the best ideas and focus on strong action to reduce

emissions. No other country has adopted such an open, inclusive and comprehensive process (GC 2000: 2).

The document alluded to in the passage above is *The Government of Canada's Action Plan 2000 on Climate Change* (GC 2000), which would be the first of several comprehensive climate change plans (cf. DAEC 2006: 5fn). The passage above exhibits the optimism, often exaggerated to the point of hubris, which pervades these climate change plans. For example, it is indicated that “[t]he measures outlined in Action Plan 2000 will help Canada become a world leader in sustainable development and one of the smartest nations on Earth in the production and use of all forms of energy” (GC 2000: 2, 16).³⁶ From this, it is clear that the principle of sustainable development has been transposed onto this program, which, as indicated in the passage above, will ‘develop solutions needed to address climate change’.

Aside from these apparent transpositions, another subtle yet equally significant one occurs from the discourse of the Kyoto Protocol to the Government of Canada's first climate change plan. That is, the conception of economy found in *Action Plan 2000* is remarkably similar to the one advanced in the Kyoto Protocol (UN 1998). While the latter document was carefully designed not to override the sovereignty of nation-states when addressing their particular “national circumstances”, it does offer examples of possible “policies and measures” that might be implemented in order to ensure the sustainable development of the “relevant sectors of the national economy” (UN 1998: 2). These economic sectors include: transport, energy, agriculture, industry, forestry, and waste management (UN 1998: 2, 9). In similar fashion, *Action Plan 2000* “sets the course for action in all sectors of the Canadian economy”

³⁶ This statement is repeated further on in the document as follows: “[t]he initiatives outlined in Action Plan 2000 [...] will also put Canada on the road to becoming a world leader in sustainable development and one of the smartest and most sophisticated nations in the production and use of all forms of energy” (GC 2000: 16).

(GC 2000: 3). That is, it sets greenhouse gas emission targets for the following economic sectors: transportation, oil and gas, electricity, industry, agriculture and forestry, and buildings (GC 2000: 3).

Although there is some variance in the composition of the economic sectors between these two documents, *Action Plan 2000* has essentially retained the model advanced in the Kyoto Protocol. When this ‘sectoral’ model of the economy is combined with the technology of greenhouse gas inventory, *Action Plan 2000* could articulate the following statement concerning the relative contribution of each economic sector to Canada’s overall greenhouse gas emissions:

Table 3.1: ‘Percentage of GHG Emissions by Sector (1998)’

<i>Sector of economy</i>	<i>Percentage of total emissions</i>
Transportation	25%
Oil and Gas	18%
Electricity	17%
Industry	15%
Agriculture and Forestry	10%
Buildings	10%
Other	5%

(GC 2000: 4, with modifications)³⁷

The sectoral model of the economy and its resulting greenhouse gas inventory have very important implications for the Government of Canada’s programmatic solutions to climate change, as indicated by *Action Plan 2000*. The document proceeds to address each economic

³⁷ In its original form, this table was presented as a pie chart. At the time of the publication of *Action Plan 2000*, the most recent emission data was obtained from Canada’s 1998 greenhouse gas inventory (GC 2000: 4).

sector individually, starting with the largest greenhouse gas emitter: the transportation sector. For present purposes, an exposition of all the programs outlined in this and the Government of Canada's subsequent climate change plans is neither necessary nor entirely relevant to the present study. Still, given that the particular object of this study is a program of government that targets the conduct of each and all, it remains important to isolate those statements that are directed either towards the conduct of the individual or that of the population as a whole.

In terms of the transportation sector, then, *Action Plan 2000* (GC 2000) offers a possible approach to achieving the “*behaviour change*” (5) required to mitigate human-induced climate change. Through a “*consumer education campaign*”, it will “*increase understanding of the importance of purchasing clean and efficient vehicles as well as good driving habits and maintenance practices*” (GC 2000: 5).³⁸ Meanwhile, to reduce the dependence of the Canadian population on the emission intensive oil and gas sector, the plan will provide financial incentives for low or non-emitting energy sources, which “*will encourage shifts in consumer behaviour that will expand the market for electricity from non-emitting sources*” (GC 2000: 8). Further on the plan stresses the need to provide information to consumers pertaining to the “*sources and environmental attributes*” of their chosen electricity supply (GC 2000: 8). When considered overall, *Action Plan 2000* encourages consumer education and information, which is intended to structure choices and behaviours so as to reduce personal and collective greenhouse gas emissions, thereby ensuring that ‘*Canada become[s] a world leader in sustainable development*’.

³⁸ This is a reference to two programs, devised and implemented by the Government of Canada, that were already in place at the time of *Action Plan 2000*, namely the ‘EnerGuide for Vehicles’ and the ‘Fuel Consumption Guide’. These programs sought to “*encourage consumer action*” through the provision of information regarding the energy-consumption and fuel-costs of new vehicles (cf. GC 2000: 6). With this information, “*they [consumers] can compare vehicles and purchase the most fuel efficient one to suit their needs*” (GC 2000: 6).

The plan does not, however, proceed to articulate an explicit or cogent program based upon this statement. In targeting the key sectors of the economy, *Action Plan 2000* never explicitly addresses consumer conduct in general, which ultimately transverses all sectors of the economy. So, on account of this adherence to the sectoral model of the economy imparted by the Kyoto Protocol, it can be argued that a public education program did not emerge in the Government of Canada's first climate change plan because governing consumer conduct, at the level of the population and the individual, would necessarily involve supplanting this sectoral model to some extent. Despite the absence of formal and cogent programs that sought to govern the conduct of each all, *Action Plan 2000* still “*comprised a suite of measures that targeted key sectors accounting for 90 percent of Canada's GHG emissions*” (DAEC 2006: 5fn). That is, “*Action Plan 2000 targets key sectors and, when fully implemented, will take Canada one third of the way to achieving the target established in the Kyoto Protocol. It will reduce Canada's GHG emission by about 65 megatonnes per year during the commitment period of 2008-2012*” (GC 2000: 2). From this, it is clear that the Government of Canada's first climate change plan, the product of two years of ongoing consultations with experts from a wide variety of academic disciplines and technical fields, was supposed to be sufficient to meet Canada's challenging emission reduction targets, as set out in the Kyoto Protocol. However, in 2002, the state would come to assume responsibility for providing an ecological education to consumers, such that a “*low-intensity GHG lifestyle becomes a societal norm for Canadians*” (DAEC 2006: 33).

Shifting conceptions of the economy

Two years following *Action Plan 2000*, the Government of Canada (cf. GC 2002: 55) would release another ‘*comprehensive*’ climate change plan. In comparison with its predecessor, the

2002 *Climate Change Plan* is considerably more elaborate and detailed; even at the most superficial level, it is three times the length of *Action Plan 2000*. While the 2002 plan articulates the initial programmatic statements of the One-Tonne Challenge, it is important to first expand on the argument made earlier, namely, how an important shift in economic model would be required as a condition of existence for One-Tonne Challenge. As indicated in the section above, *Action Plan 2000* had largely transposed its ‘sectoral’ model of the economy from the one posited in the Kyoto Protocol. That is, the economy was discussed solely in terms of constituent sectors, where individuated greenhouse gas emission reduction targets were established and government programs were developed for each sector.

In the discourse of the 2002 plan, the economy is no longer discussed exclusively in terms of its constituent sectors. To be sure, the various sectors of the economy – transportation, electricity, oil and gas, industry, buildings, agriculture and forestry – were maintained and the greenhouse gas emission reduction targets laid out by *Action Plan 2000* were directly referred to, in order to suggest further programs to meet them or to consider those programs already implemented as “*Actions Underway*” (cf. GC 2002: 12, 13, 21, 22, 24, 28, 29, 37, 39, 61). Although the 2002 climate change plan would continue to propose programs, techniques, and objectives pertinent to the reduction of greenhouse gas emissions in these economic sectors, it would address many others beyond the original six considered in *Action Plan 2000* (cf. GC 2002: 30). Thus, there is an evident quantitative change in the number of economic sectors relevant to the 2002 *Plan*.

As the sectoral model of the economy was expanded so as to become more precise at a programmatic level, there are also a number of statements in the 2002 climate change plan that signal a different emphasis, where reductions in greenhouse gas emissions are no longer

discussed exclusively in terms of the constituent sectors of the economy. That is, outside of the targets set for the specific sectors of the economy, the 2002 plan also discusses some of its climate change objectives using a much more general model of the economy, one which was not present in *Action Plan 2000*. For instance, with regards to Canada's emission-reduction target under the Kyoto Protocol of achieving reductions in greenhouse gas emissions by six percent below 1990 levels, the 2002 climate change plan declares that “[t]his is an ambitious target that offers significant opportunities. The transition to an economy based on lower-emissions energy is the way of the future and Canada has the opportunity to set the pace and lead the way” (GC 2002: 7). Of course, this economic ‘transition’ will be achieved in large part through the implementation of sector-specific programs (cf. GC 2002: 12). Such programs do not, however, exhaust the scope of the proposed actions put forward by the 2002 plan, as it also elaborated programs oriented towards ‘national’ and ‘personal’ climate change goals. With the former, “[t]he Plan proposes a national goal – for Canadians to become the most sophisticated and efficient consumers and producers of energy in the world and leaders in the development of new, cleaner technologies” (GC 2002: 2). This statement serves to indicate that the 2002 plan is not restricted to a sectoral economic model: a broad economic transition will occur because of the widespread use of lower-emissions energy, which will, in turn, be facilitated by increases in the energy efficiency of consumers and producers. Here, a concept of the economy that is more general and conventional has been advanced, such that the economy can be discussed in terms of macro-level change and the consumer-producer dichotomy.

Of course, this study is concerned with how the 2002 plan devised and implemented programs that sought to govern the conduct of consumers, since producers do not necessarily encompass the entirety of the Canadian population, that is, each and all. Some Canadians are

producers of energy, but *all* are consumers (cf. Rabinow 1989: 191). This will be further demonstrated in the next chapter through the detailed analysis of the key statements of the One-Tonne Challenge. For the moment, though, it is important to note that among the conditions of existence of the One-Tonne Challenge is the discursive shift towards a more general conception of the economy, one that is arguably more consistent with popular discourses. *Action Plan 2000* was limited by its strict adherence to the sectoral economic model, which, as indicated above, was derived from the Kyoto Protocol. The problem with this economic model is that consumers and producers are not going to remain the same from sector to sector. By treating the economy in more general terms, as a dynamic whole composed of consumers and producers, the 2002 plan avoided this conceptual obstacle – it could address the totality of consumers and producers, outside of considerations of specific economic sectors. The totality of consumers and producers offers “*program areas*” (cf. GC 2002: 2). The 2002 plan suggests that similar “*targeted measures*” could be applied to economic sectors as well as program areas, in order to achieve Canada’s national climate change goal (GC 2002: 2). These ‘*targeted measures*’ include “*information, incentives, regulations and tax measures*” (GC 2002: 2, emphasis removed). Of the targeted measures, the One-Tonne Challenge would be typically viewed as an information and education program, but, as discussed in the fifth chapter, it is precisely the fact that the state does not provide more government aside from information and education that ecological political reason would propose a radical transformation in the market economy.

Chapter summary

This chapter has traced the historical trajectory of the problematization of climate change from the defining statement of sustainable development in the 1987 WCED Report, *Our Common*

Future, to the Government of Canada's *Action Plan 2000*. In 1987, evidence concerning climate change had yet to become as influential as it is at present. Even though the notion of climate change had not attained the status of scientific paradigm, the principle of sustainable development rendered it into a problem for government. That is, the future possibility of climate change necessitated action in the present, on the part of each and every nation-state. Despite relatively cautious scientific statements concerning climate change, the WCED Report argued that the inert global political system had to be mobilized as soon as possible. This normative principle of ecological government would prove influential, as most nation-states would agree to the UNFCCC, where this international treaty eventually required signatories to substantially reduce greenhouse gas emissions, routinely report on the plans and programs that they had devised and implemented to address climate change, and measure their national performance by compiling greenhouse gas inventories. The fact that so many sovereign nation-states ratified the 1998 Kyoto Protocol attested to the continuing influence of the notion 'sustainable development'.

This chapter then considered how the notions of climate change and sustainable development were transposed into the Government of Canada's climate change plans and programs. As soon as it had ratified the Kyoto Protocol, the state funded individual projects that sought to educate the population about its relation to climate change and what individual actions should be taken to reduce greenhouse gas emissions – this was the public education component of the CCAF. Climate change and sustainable development were also transposed to the Government of Canada's first climate change plan. Analysis then revealed another significant transposition, one that occurred from the Kyoto Protocol to *Action Plan 2000*. That is, the 2000 plan would rigorously adhere to the sectoral model of the economy initially posited in the Kyoto

Protocol, advancing sector-specific targets and programs. Although it encouraged consumer education and programs on climate change, it did not articulate a coherent one of its own. It was argued that the sectoral model of the economy precluded any consideration of the totality of consumers as the collective population: consumers would be different depending on the sector there was no general population of consumers mentioned in the *Action Plan 2000*. This conceptual obstacle would be overcome with the 2002 *Climate Change Plan*, which, in addition to the sectoral model, discussed the economy in general and conventional terms, as a single entity comprised of consumers and producers, thereby opening up new ‘*program areas*’. The programs devised and implemented in these areas would be oriented towards a new national goal: that “*Canadians [were] to become the most sophisticated and efficient consumers and producers of energy in the world*” (GC 2002: 2). As shown in the next chapter, this national goal corresponds with the personal goal set out in the 2002 plan, where these two goals would come to constitute those of the One-Tonne Challenge.

CHAPTER FOUR: THE ARTICULATION OF THE ONE-TONNE CHALLENGE

In the preceding chapter, the analysis began with the genealogy of the problematization of climate change, a process which occurred, in large part, through the definition and application of the normative principle of sustainable development. It was argued that this principle belonged to an ecological rationality of government, which attempts to calculate future and present needs in the exercise of government. As nation-states were persuaded to take the problem of climate change seriously, elements of this ecological rationality of government were transposed into their climate change plans and programs. Further, in the discussion of the UNFCCC and the 1998 Kyoto Protocol, the ecological government of nation-states became an institutional practice, where they had to regularly submit greenhouse gas inventories and report their climate change plans and programs to the United Nations. The discussion specifically addressed how the Government of Canada was responding to its obligations following its ratification of this international treaty, in the years 1998 to 2002. As the state sought to govern conduct in relation to climate change, it deployed the ecological technology of greenhouse gas inventory to the sectors of the economy.

So far, the object of this study, the One-Tonne Challenge, has not been extensively discussed in the course of the analysis. Indeed, the third chapter focused on identifying the historical conditions of existence of this program of government. The present chapter will narrow the focus of analysis exclusively to the articulation of this program. Its first section will analyze the initial programmatic statements of the One-Tonne Challenge, which are to be found in the 2002 *Climate Change Plan*. It is important to note that, even though the 2002 plan advances the key statements for what would become the One-Tonne Challenge, this program had yet to be given its formal title. Indeed, this official title would only be assigned in the 2004 Speech to the

Throne, when the program was formally implemented (PCO 2004). A significant component of program implementation consisted of the mass distribution of a practical guide to the population. The second section of this chapter will describe the programmatic statements and ethical practices elaborated in this practical guide (cf. GC 2004). It sought to instruct consumers on how to improve their energy-efficiency and reduce their personal greenhouse gas emissions. To help them quantify their progress in this regard, this practical guide contained a rudimentary personal greenhouse gas calculator, through which consumers could measure the emissions reductions that would result from the actions that they took. It will be argued that the greenhouse gas calculator represents an attempt to extend the ecological technology of greenhouse gas inventory to the ‘personal’ level. The discussion in the third and final section will be occupied by an analysis of the Government of Canada’s 2005 climate change plan, which repeats the key statements of the One-Tonne Challenge, but specifies additional components to this program. The overarching purpose of the descriptive archaeological analysis in this chapter is to highlight the rationalities according to which this program is articulated, so as to be able to carry out an interpretation and critical diagnosis further on in the study.

The government of the energy consumer

As mentioned in the previous chapter, there was continuity with the theoretical model of the economy from the Government of Canada’s *Action Plan 2000* to its 2002 *Climate Change Plan*. There was also a notable addition in the 2002 plan, as it posited a more general conception of the economic domain. From this, the 2002 plan would advance the necessity for government to bring about an “*economic transition*” (GC 2002: 7), which would result from the increased energy-efficiency of producers and consumers. Economic transition through increased energy-efficiency

would be pursued as a “*national goal*” (GC 2002: 2). This section will continue with the analysis of the 2002 plan. It will demonstrate that the national goal of achieving economic transition through the increased energy-efficiency of consumers is directly linked to the proposed “*personal goal for each Canadian to reduce emission by an average of one tonne per year by 2008-2012, supported by incentives, improved information and product availability*” (GC 2002: 4). These national and personal goals are intertwined through the government of the ‘energy consumer’, where this is a totalizing identity for it can be ascribed to each and all – the individual and the population. This section will argue that, in the 2002 plan, statements pertaining to the government of the consumer should be regarded as the first articulation of the public education and information program that would become ‘One-Tonne Challenge’.

The first statements of the program

Perhaps the clearest indication that the 2002 plan is the precursor to the One-Tonne Challenge is evinced in the following statement. When offering “*examples of current or potential reductions*”, the 2002 plan suggests “[a] *challenge to Canadians to reduce emissions by 1 tonne each*” (GC 2002: 14). If the entire population were to engage in this challenge, the 2002 plan estimates that the cumulative effect would be an emissions reduction of 7 mega-tonnes (GC 2002: 14). In this way, Canada’s national greenhouse gas inventory has been linked to the emissions of the population, where this linkage was entirely absent in *Action Plan 2000*. That is, whereas emission reduction targets had previously been assigned to Canada as a whole, or to the constituent sectors of the national economy, the 2002 plan introduced emission reduction targets applicable to the levels of the individual and population. These emission reduction targets reflect the extension of the ecological technology of greenhouse gas inventory, as the emissions of the population were measured, calculated, and averaged.

Indeed, the 2002 plan would issue the one-tonne challenge to Canadians only once it had obtained some idea as to the average annual emissions of the ‘*Canadian*’. This is reflected in what is perhaps the most fundamental statement of the program: “*On average, each Canadian generates just over five tonnes of greenhouse gas emissions each year. Together, these account for more than a quarter of Canada’s greenhouse gas emissions*” (GC 2002: 45).³⁹ So, with the extension of the greenhouse gas inventory to the level of the population, the proposed challenge of a one-tonne – or 20 per cent – reduction in personal emissions appears in context. This ecological technology produces even more precise and informative measurements, as personal emissions can be calculated and averaged in terms of particular sources. The following statement can be attributed to the extension of the ecological technology of greenhouse gas inventory:

Table 4.1: ‘Sources of Personal GHG Emissions in Canada’

<i>Source</i>	<i>Percentage of total emissions</i>
Passenger Road Transportation	49.9%
Space Heating	29.0%
Water Heating	11.1%
Appliances	7.5%
Lighting	2.4%
Space Cooling	0.3%
Other	5%

(GC 2002: 45, with modifications)⁴⁰

³⁹ To be more precise, the 2002 *Climate Change Plan* notes that “[t]he average Canadian is responsible for about 5.4 tonnes of greenhouse gas emissions every year” (GC 2002: 12). This contrasts with the greenhouse gas inventory of the population compiled by the International Energy Agency (cf. Appendix D).

⁴⁰ In its original form, this table was presented as a pie chart.

From this, it is clear that the sources of personal emissions are diverse and heterogeneous. However, the sources are all tied together through the knowledge that “[t]he energy Canadians consume in their homes and workplaces creates greenhouse gas emissions when it involves the combustion of fossil fuels” (GC 2002: 25). Thus, emissions sources are related to energy consumption, where the technology of greenhouse gas inventory will be the register according to which performance can be measured and evaluated. Emission reductions can be achieved by reducing energy consumption, where this will occur either through practicing energy conservation, or “[b]y using energy efficiently and making wise consumer choices” (GC 2004: 3). As we will see, when elaborating the One-Tonne Challenge, the documents in the archive are almost exclusively oriented towards governing the energy-efficiency of the consumer.

The 2002 *Climate Change Plan* would address all of the diverse sources of personal emissions indicated above. In similar fashion to its predecessor, *Action Plan 2000*, the 2002 plan began by explaining what should be done in terms of transportation, which is the largest single source of personal emissions according to the greenhouse gas inventory (cf. Table 4.1). So, the 2002 plan was no longer exclusively concerned with transportation as an economic sector, so much as with the specific actions that will make the population more energy-efficient in terms of its consumption (GC 2002: 45). For instance, under the section heading “*Achieving the One-Tonne Goal: Practical Tips*”, it is reiterated that Canadians should take into account fuel-efficiency when purchasing a vehicle, but the programmatic statements become even more specific as the discussion goes on to indicate some of the “[a]ctions to be taken on the road: use ethanol blend gasoline; use the car less; reduce idling” (GC 2002: 46). Next, it describes the “[a]ctions to be taken at home [which include]: retrofit older homes; buy an R2000 home; be energy efficient at home; replace appliances with more energy-efficient models” (GC 2002: 46).

The last series of actions prescribed by this emergent program are “*to be taken at work [and include]: use the computer wisely; purchase more energy-efficient printers, computers, and photocopies*” (GC 2002: 47). “*By taking **small actions** at work, at home and on the road, Canadians can reduce greenhouse gas emissions, while reducing air and water pollution*” (GC 2002: 45, emphasis mine).

A program premised on voluntary action

In contrast with *Action Plan 2000*, the 2002 *Climate Change Plan* not only advances a national and personal goal for energy consumers but it is also begins to advance a program of government that prescribes specific actions that need to be taken by consumers to reduce greenhouse gas emissions. That is, the 2002 plan is the first to elaborate a program that is directed at governing the conduct of each and all. Following the introduction of a general conception of the economy, the 2002 plan measured the emissions of the population, so as to acquire relevant technical knowledge concerning the greenhouse gas inventory of the ‘*Canadian*’, the average individual in the population. This was a crucial step towards advancing the detailed programmatic and prescriptive statements concerned with the ‘one-tonne challenge’. However, this was not the only factor contributing to the further specification of statements concerning the ‘*small actions*’ to be taken ‘*at work, at home and on the road*’. The 2002 plan was prompted, at least in part, to articulate these detailed statements on account of its “*commitment to transparency*” (GC 2002: 10).

According to this commitment, the more the precise statements concerning what actions need to be taken, the more transparent this program of government becomes. “*It is essential that what is being asked of Canadian be clear, consistent, reasonable and achievable [...] Canadians*

should know what is expected of them – there should be no surprises” (GC 2002: 10). Further on the 2002 plan explains that

Canadians need to know what actions they can take, what their impact will be, and how much, if any, investment on their part will be required. This Plan will build on current public education and outreach initiatives to provide Canadians with better information on how they can contribute. (GC 2002: 45)

When articulating the program according to the value of transparency, the ‘*small actions*’ will be described in as detailed a manner as possible. Ultimately, determining how many of these small actions are necessary for an individual to reduce personal emissions depends upon the level of refinement and precision of the ecological technology of greenhouse gas inventory. While this technology can measure the average greenhouse gas emissions of the population, there is no indication that it will be deployed to measure emissions on an individual basis. Indeed, as discussed in the next chapter, the technology of greenhouse gas inventory proves to be quite limited in terms of providing any technical knowledge concerning the relative changes in emissions at the individual level.

Despite the absence of this technical knowledge, the 2002 plan does acknowledge that the program issuing the personal challenge of an emission reduction of one-tonne should not be expected to be uniformly applied to the population.

Individual Canadians can do their part in achieving our climate change objectives by establishing goals for reducing their greenhouse gas emissions. This Plan proposes an individual target of one tonne, recognizing that some Canadians will have scope to do more and others less. (GC 2002: 45)

From this, the 2002 plan is not going to *require* all Canadians to meet the proposed one-tonne target, so as to make it a universal personal goal. The ‘one-tonne challenge’ is not put forward as mandatory. Indeed, the program that would become the One-Tonne Challenge is premised on respecting the autonomy of governed subjects, which is commonly taken to be a liberal principle.

As shown in the next chapter, having a government program rely exclusively on ‘*voluntary action*’ to achieve emission reductions will be problematized through an ecological critique. So, this suggests that the One-Tonne Challenge contains liberal elements, which will come into tension with the emergent ecological rationality. Indeed, the 2002 plan places clear limits on the function of the state in the government of consumer. “*To assist consumers in making the best environmental choices, we will enhance public information programs*” (GC 2002: 22). Thus, the articulation of this public education program seems to limit state action to governing the choice of the consumer; the state will structure the field of possible actions, in the attempt to align its national goal with the personal goals of the consumer.

This section has analyzed several key programmatic statements that have been argued to represent the first articulation of what would become the ‘One-Tonne Challenge’. The 2002 *Climate Change Plan* offered a personal goal to each and every Canadian to reduce their greenhouse gas emissions by one-tonne per year. This personal goal was directly linked to the national one discussed earlier: that Canadians were to become the most energy-efficient consumers in the world (GC 2002: 2). By modifying and regulating the energy-efficiency of the consumer in relation to the problem of climate change, an ‘*economic transition*’ would be brought about. Thus, it is through the constitution of the consumer in this discourse of the program that these goals become linked. This subjectivation will be consistently maintained throughout the remaining documents of the archive and will prove to be decisive in terms of the rationalization of the One-Tonne Challenge program, a point that will be taken up in the next chapter.⁴¹ For the moment, it is important to note that the constitution of the subject of

⁴¹ This is ‘subjectivation as the consumer is an identity imposed upon the subject of government, not one taken up by it, as is the case with ‘subjectification’. For a discussion of these two terms, see footnote 9 on page 7.

government as consumer has already invoked the notion of choice, where this is often associated with the liberal governmental constellation of freedom and autonomy. The state has to respect this choice, but it can attempt to guide and shape choice through education and information. At this juncture, this seems to suggest that the One-Tonne Challenge should be regarded as a liberal exercise in government, despite the presence and operation of ecological elements: objectives, principles, technologies.

Calculating personal emission reductions

The analysis in the previous section was focused on a document that contained the initial programmatic statements of the One-Tonne Challenge. The program was formally announced and given its official title on February 2, 2004 in the ‘Speech from the Throne’. Under the heading of “*Sustainable Development*”, the Government of Canada declared that:

we will engage Canadians directly. Our One-Tonne Challenge aims to raise awareness and provide Canadians with information on how their individual consumption choices contribute to the emissions that drive climate change. The objective – the challenge – is to reduce emissions by 1,000 kilograms per person, per year. Because environmental stewardship must be everybody's responsibility. (PCO 2004)

This passage repeats the statements made in the 2002 plan, particularly in terms of positing an information and awareness program that aims to govern consumer choice. What is particularly striking about this passage, though, is the suggestion that the One-Tonne Challenge ‘*will engage Canadians directly*’, as the government of choice seems to delimit that possibility.

The technical and practical components of the One-Tonne Challenge would be further developed for its implementation, beyond the preliminary ‘*practical tips*’ offered in the 2002 plan. This section will carry out an analysis of *Your Guide to the One-Tonne Challenge* (GC 2004). From March 2004 to March 2006, 1.2 million copies of this practical guide were

distributed to the population (DAEC 2006: 7). The particular technical component that the population was most exposed to during the implementation of the One-Tonne Challenge was through the “*information website*”, which had received 4.2 million visits by program termination in March 2006 (DAEC 2006: 8). This technical component was put forward in the 2002 climate change plan which indicated that “[t]hrough *information websites and easy-to-use calculators, consumers will have the tools they need to quantify the actions they are taking*” (GC 2004: 45, emphasis mine). Following the termination of the program, the information website of the One-Tonne Challenge was no longer available for analysis. According to the audit and evaluation of the program, the information website

included a GHG calculator, a pledge page, a tips guide section and an incentives and rebates database section. The latter section was intended to ensure that Canadians were aware of programs, products and services available to assist them in reducing emissions, including other relevant campaigns aimed at consumers. (DAED 2006: 7-8)

To be sure, the absence of this information website is somewhat of a setback to the analysis. However, *Your Guide to the One-Tonne Challenge* (herein referred to as ‘the *Guide*’) had similar contents to the information website, where the only appreciable difference between the two documents resides in the provision of ‘*an incentives and rebates database section*’, which the *Guide* does not have. Nonetheless, it still contained the tools with which consumers would quantify their actions in terms of personal emission reductions.⁴²

Repetition of key programmatic statements

The *Guide* begins by stating the problem to which it is directed as a solution. Climate change, its truth and effects, are advanced in the opening paragraph:

⁴² However, it should be noted that the greenhouse gas calculators in each document are not to be treated as identical. This was alluded to in the *Guide* as it encourages one to “[t]ry the Government of Canada’s on-line GHG calculator if you would like a more precise score that better reflects your individual situation” (GC 2004: 23).

Our climate is changing. As the concentration of greenhouse gases (GHGs) increases in our atmosphere, they are causing average temperatures to rise ... In Canada, we may already be seeing signs of climate change. Melting permafrost in the North. Declining water levels in our lakes and rivers. And more extreme weather events, such as droughts, ice storms, and floods. (GC 2004: 2)

Given its importance to the articulation of the One-Tonne Challenge, among the first programmatic statements to be repeated in the *Guide* is that “[e]very year, each Canadian produces an average of over five tonnes of GHGs” (GC 2004: 2). As mentioned above, this statement reflects the extension of the technology of greenhouse gas inventory to the individual level, such that the emissions of the ‘Canadian’ can be measured and averaged. It is important to note that this average is not deployed as a societal norm, to which individual Canadians will have to aspire in their conduct. Instead, obtaining a measurement for the average Canadian is clearly intended to situate the proposed challenge of reducing personal emissions by one-tonne, or twenty percent. “*The one-tonne goal is for individuals. There is no one-size-fits-all approach. Some actions have more impact than others in the same category*” (GC 2004: 23).

The deployment of the greenhouse gas inventory is apparent in yet another statement repeated from the 2002 plan. That is, Table 4.1 is repeated, with exactly the same data-inputs, except its title is changed to “*Personal GHG Emissions From Energy Use in Canada*” (GC 2004: 2). The change in title reflects the relation between greenhouse gas emissions and energy consumption. Further on in the *Guide*, a statement that can be attributed to the greenhouse gas inventory is made: “*Added up, our individual GHGs represent roughly 28% of Canada’s total [greenhouse gas inventory]*” (GC 2004: 2). Having presented climate change as a problem and attributing it, at least in part, to the actions of individual Canadians, this document has articulated the programmatic basis of the One-Tonne Challenge; the basis from which it would then advance

prescriptive statements concerning the specific actions that should be taken to mitigate human-induced climate through improved energy-efficiency and reduced emissions.

It is time to take action on climate change. By using energy efficiently and making wise consumer choices, you can reduce your individual greenhouse gas emissions (GHG) by one tonne, or about 20% [...] Why you? Every time you drive to the store, start up a lawnmower or do anything else that uses energy from fossil fuels, you create GHGs that contribute to climate change and other emissions that create air pollution. (GC 2005: 3).

From this passage, the government of the energy consumer, first described in the 2002 *Climate Change Plan*, is the objective of this practical guide. It demonstrates the knowledge that all actions that consume energy from the burning of fossil fuels produce greenhouse gas emissions. Second, this passage indicates that the program is directed towards shaping the ‘choices’ of consumers so that they become ‘efficient’ and ‘wise’.

Further specification of prescriptive statements

The discussion will now turn to the prescriptive statements that specify how consumers can improve efficiency and reduce emissions. Unlike the 2002 plan, these statements do not simply detail what should be done. The prescriptive statements in the *Guide* become even more specific on account of ‘greenhouse gas calculator’, a rudimentary instance of the greenhouse gas inventory. In order to calculate the resultant decreases in emissions that will accompany the particular actions that one takes, each action is accorded a value in terms of the amount of greenhouse gas emissions it will reduce (cf. Appendix D). Actions that will reduce emissions by 0.5 tonne (500kg) or more belong to ‘Level A’. In order to meet the ‘one-tonne challenge’, individuals would have to follow one or two of the ‘Level A’ actions described in the *Guide*. ‘Level B’ actions are considered to be those that reduce individual GHG emissions by 100 to 499kg; Canadians would have to carry out four to five ‘Level B’ actions to reduce their personal emissions by one-tonne. They would have to take fifteen to twenty emission-reducing ‘Level C’

actions – those that would reduce personal GHG emissions by less than 100kg – to reach an overall emissions reduction of one-tonne (GC 2004: 3). So, to complete the ‘*GHG calculator*’ contained in the *Guide*, one would review the actions that it recommends and circle off those that one intends to ‘*commit*’ to carrying out in the future.⁴³ Following this, the number of Level A, B, and C actions that have been circled will be counted and inputted into a mathematical formula, where Level A actions are multiplied by ten, Level B by four, and Level C by one. They are then added up and compared with a scale, where twenty is set as the ‘*One-tonne*’ benchmark (GC 2004: 24).

The first cluster of actions put forward in the guide pertain to transportation. The actions to practice ‘*on the road*’ will be given as follows, with their corresponding emissions-reduction ‘Level’ indicated in the brackets: “*Drive 10% less (A); Use your vehicle’s air conditioner sparingly (C); Give up your second vehicle (A); Don’t idle (B); Drive at the posted speed limit (A); Use a block heater on a timer (C)*” (GC 2004: 6). It continues: “*Keep your vehicle fully tuned (B); Use ethanol-blended gasoline (B); Check your vehicle’s tire pressure once a month (B); Remove roof racks (C); Don’t buy more than you need (B); Buy the most fuel-efficient vehicle (A)*” (GC 2004: 9).

Following this and for its remainder, the *Guide* goes on to discuss the actions to be taken ‘*at home*’ (cf. Appendix D). While it would be expected that ‘home-owners’ are addressed, this is not the case.⁴⁴ Again, the subject is constituted as a consumer: “*Maintaining a comfortable*

⁴³ Although it is not a central theme, the *Guide* does indicate that Canadians undertaking the One-Tonne Challenge are doing so as a part of their commitment to the environment: “*Like most Canadians, you probably already take steps to conserve resources and protect the environment. Now the One-Tonne Challenge calls on you to make a **bigger commitment***” (GC 2004: 3, emphasis in original).

⁴⁴ Searching through the document for the different variants of the term ‘home-owner’, none appear anywhere in the *Guide*.

living space can be expensive, whether you rent or own your home. So it is important to 'shop-smart' for the most energy-efficient appliances and equipment and to keep them well maintained' (GC 2004: 10). Despite this, not all of the actions mentioned are necessarily tied to purchases one can make in the marketplace. Indeed, many of these actions pertain to mundane, everyday activities: from taking a shower instead of a bath, to using as little paper as possible, to lowering the thermostat, and, of course, turning the lights off when a room is no longer occupied (GC 2004: 11, 16, 17, 19). Still, many more of the prescribed actions consist of making the appropriate purchases as a consumer in the marketplace: to look for certain labels, to buy and install more efficient products, and to make purchases only according to one's needs i.e. not buying more than one must (cf. GC 2004: 9, 11). This can be summed up as follows: "*We can all put less stress on the environment by **being selective consumers and recycling and composting whenever we can***" (GC 2004: 20, emphasis in original). When considered overall, this practical guide provides individual Canadians with information regarding how to properly conduct themselves as energy consumers, where this involves routine and everyday practices on the road, at home, and in the office.

The *Guide* then makes an appeal to consumers, outside of the problem of climate change. This appeal is indicative of a fundamental economic assumption about the consumer, one that will be applied consistently throughout the archive of the program, albeit for very different reasons and ends. According to the *Guide*, the personal goal involved in the One-Tonne Challenge need not be carried out solely in relation to climate change.

What's in it for you? Save money. Help fight climate change. Improve our air quality. Protect our environment. Participating in the One-Tonne Challenge will pay off. Reducing your home energy use by 20% can help lower your heating and electricity bills by the same amount. (GC 2004: 4)

Canadians should strive to become more efficient and wise because it is in their interest as consumer to do so. That is, the economic assumption that frequently accompanies the subjectivation of the consumer is the positing of *homo economicus*. The consumer has rational economic interests, which essentially consists of paying the minimum cost while obtaining the maximum benefit. Informing consumers that they will reduce financial costs through improved energy efficiency is an appeal to the rational interest of *homo economicus*, the figure regularly posited in the discourses of liberal economic theory. As will be shown in the next chapter, *homo economicus* is invoked again in another document, but this is done not to *persuade* consumer to become more energy efficient. Indeed, *homo economicus* can be *compelled* to practice the efficient consumption of energy, if and when the state increases the cost of energy. Thus, this state of domination would be brought about through the totalizing subjectivation of the consumer.

This section has analyzed a document that was produced for the implementation of the One-Tonne Challenge. Aside from repeating many of key programmatic statements first articulated in the 2002 *Climate Change Plan*, the *Guide* advanced prescriptive statements in combination with the personal greenhouse gas calculator. It was argued that this can be regarded as a further extension of the ecological technology of greenhouse gas inventory, which can now be applied to measure and govern the performance of nation-states, economic sectors, populations, and individuals. Of course, *Your Guide to the One-Tonne Challenge* was directed at the latter. Once applied to the individual, any practice that consumes energy derived from fossil fuels can be regarded as a personal emissions source. From this, a heterogeneous multitude of mundane and everyday practices can be made more energy-efficient. This program of government attempts to educate and inform consumers about how to make wise choices

concerning their energy use. When treating the population as consumers, the *Guide* also appealed to the cost savings that would be obtained from improvement in energy efficiency.

Finally, it is important to note that not every source of personal emissions was taken into account in this practical guide. For instance, the food diet of individuals can be related to greenhouse gas emissions, and this was only briefly touched upon in the *Guide*. As it proceeded to explain, “[o]ur average meal travels about 2,500 kilometres to our plates. A 40-tonne transport truck releases about five tonnes of GHGs for one typical shipment of food – about equal to the GHGs an average Canadian produces annually” (GC 2004: 8). While this practical guide recommends purchasing seasonal and local foods, it is interesting that this public education and information program did not address food diet, personal travel, and other aspects of our daily existence that can be tied to the production of greenhouse gas emissions through the consumption of energy obtained from the burning of fossil fuels.

Final program elaboration and termination

During the implementation of the One-Tonne Challenge, the Government of Canada would release another ‘comprehensive’ climate change plan in 2005, *Project Green: Moving Forward on Climate Change*. It would be the final climate change plan prior to the termination of the One-Tonne Challenge program in March 2006 (DAEC 2006: 1, 4, 29). Further, as the third climate change plan, it would reveal enduring continuities as well as some discontinuities with the earlier ones; the discussion in this short section will consist of their analysis.

The problematization of climate change is an enduring continuity, along with the principle of sustainable development. “Climate change is the greatest sustainability challenge of our time” (GC 2005: 2). Similarly, the 2005 plan refers to the IPCC, the UNFCCC, and the

Kyoto Protocol so as to set the context for Government of Canada's "*particularly challenging*" emission reduction target (GC 2005: 1). Indeed, following the 1987 WCED Report and its section on "*Managing climate change*", it is remarkable how the Government of Canada's 2005 discusses the "*broad international agreement consensus on climate change*" (GC 2005: 7). This consensus was obtained through the principle of sustainable development as well as the growing scientific evidence concerning the phenomenon itself. Finally, another enduring continuity from its immediate predecessor is that the 2005 climate change plan repeats statements concerning macro-economic change. "*The Government of Canada is committed to the transformation of our economy. In taking action to achieve this, we believe we will meet our Kyoto target*" (GC 2005: 1). While the governmental objective of macro-economic change is an enduring one, there is a perceptible discursive shift as it was previously spoken of as an "*economic transition*" (GC 2002: iii, 2, 7, 15, 55). In the 2005 plan, the objective is now "*to facilitate the transformation and sustainability of our economy*" (GC 2005: 1, cf. iii). This discursive shift will be argued to inflect the growing emphasis on the ecological rationality in the documents of the archive, an argument that will be developed in the following chapter and conclusion of this study.

The growing emission gap

The unbridled hubris characteristic of its predecessors is perhaps the most notable absence in the 2005 plan, marking a significant discontinuity as there is no longer any discussion of Canada inevitably progressing to become a '*world leader*' in sustainable development.⁴⁵ Through the annual greenhouse gas inventories conducted at the national level, it became clear

⁴⁵ Indeed, the only remainder of this hubris concerns the 'comprehensiveness' of the 2005 *Plan* itself. "*This plan takes a more comprehensive approach compared to the national climate change plans of most of the industrialized countries that are Parties to the Kyoto Protocol*" (GC 2005: 7).

that Canada was falling behind in its projected emission targets. Higher than expected economic growth, as evinced in substantial increases in Canada's gross domestic product, was viewed as the principal cause of the increasing emissions:

In 2002, our emissions gap was estimated at 240 Mt. This estimate has now increased – Canada's economy is performing better than had been projected, and economic growth in key emissions-intensive sectors is now expected to be greater than had previously been projected. Between 1990 and 2003, our gross domestic product (GDP) grew by 43 percent, compared with the original forecast of 34 percent. As a result, the emissions gap is more likely in the area of 270 Mt, and could be greater. (GC 2005: 12)

The growing emissions gap between the climate change plans reflects the failure of the earlier climate change plans to achieve the emission reduction targets that were set out for the various economic sectors and program areas. Hence, the sub-title of the 2005 climate change plan: *Moving Forward on Climate Change*. Indeed, as the Kyoto Protocol became international law that year, the Government of Canada became legally obligated to “*honour its commitment*” to the international treaty, to borrow another of its sub-titles (cf. GC 2005: 2).

On account of this growing urgency, the 2005 plan is more deliberate and careful in its calculations, especially when making future projections of emission-reduction targets.

We are making projections seven years into the future, in an area where past experience is not always a useful guide. Moreover, our Plan is not just about reducing GHG emissions but also about transforming the way our economy currently functions in terms of its impacts on the climate. (GC 2005: 12)

The 2005 plan maintains that setting realistic emission reduction targets for economic sectors and program areas is difficult given the “*many variables, such as economic growth and energy prices, that can be estimated, but cannot be known with certainty in advance*” (GC 2005: 2). In short, the 2005 plan is placing considerably more emphasis than its predecessors on the fact that it is making projections into the future, based on estimates derived from multiple, complex variables. Nonetheless, the reasons for continuing with this approach are given as follows: “*Most*

countries, in building their climate change plans, have chosen not to engage in detailed, bottom-up, quantitative projections of megatonne reductions. While this is a difficult exercise, it adds discipline and facilitates performative evaluation” (GC 2005: 12). From this, the Government of Canada is endorsing the deployment of the greenhouse gas inventory. Thus, discussions in terms of quantifiable greenhouse gas emissions and emissions-reduction targets persist in the 2005 plan.

This continuity is important for the articulation of the One-Tonne Challenge, which has as among its conditions of existence the extension of the greenhouse gas inventory to the level of the individual and population. The 2005 plan repeats the key programmatic statements of the One-Tonne Challenge:

Together, individual Canadians are responsible for 28 percent of Canada’s GHG emissions. On average, each Canadian produces 5 tonnes of GHGs annually. Therefore, their buy-in and active involvement are critical if we are to achieve our climate change and sustainability goals (GC 2005: 27).

Further, the One-Tonne Challenge is projected *“to collectively generate 5 Mt [megatonnes] in incremental reductions annually over the 2008-2012 period”* (GC 2005: 28). It proceeds to designate the One-Tonne Challenge as a *‘public education program’* that provides information to consumers, referring to the practical guide, which *“provides more than 20 pages of tips to consumers for saving money (and reducing GHG emissions)”* (GC 2005: 28). When considered overall, the One-Tonne Challenge had become considerably more elaborate following its formal implementation, when compared with the initial programmatic statements put forward in the 2002 *Climate Change Plan*.

The termination of the program

Although the 2005 plan indicated that some progress had been made, it confirmed that the One-Tonne Challenge had much more to accomplish: “*While a good start has been made, more needs to be done*” (GC 2005: 28). Nevertheless, the Government of Canada would officially terminate the program as of March 2006 (DAEC 2006: 1; NRCan 2006a, 2006b). To be more specific, it had made a “*decision to take a different approach with the OTC program*” (DAEC 2006: 1).⁴⁶ According to the Honourable Gary Lunn, then Minister of Natural Resources:

The new government under Prime Minister Stephen Harper is committed to putting an end to the massive increase in GHG emissions that Canada has seen over the past decade. To do that, we need a new approach to addressing climate change that is effective and realistic for Canada [...] Our government will ensure that resources are spent on programs that work for Canadians’ (NRCan 2006a).

Under the section heading titled “*Different approach required*” (NRCan 2006b), the One-Tonne Challenge was among the programs listed, and so the ecological education of the population was no longer designated as within the competencies of the state.

Chapter Summary

The analysis in this chapter sought to isolate and trace the key statements of the One-Tonne Challenge as they were articulated in the 2002 and 2005 climate change plans, as well as the practical guide accompanying the implementation of this program. Through this analysis, the technologies and rationalities the program assembled and deployed were identified. It was

⁴⁶ Interestingly, the title of the statement, alluding to the main premise for reviewing all the existing programs carried out by Environment Canada and Natural Resources Canada, was ‘First Steps Taken Towards Made-in-Canada Approach’. The first climate change plan to articulate the program linked to the One-Tonne Challenge, the *2002 Climate Change Plan* (cf. GC 2002: 1), had advanced its approach as one that was “*made-in-Canada*”, perhaps in order to distance itself from *Action Plan 2000*, which had closely relied on the conception of economy outlined in the Kyoto Protocol. In this way, the theme that resulted in the termination of the One-Tonne Challenge was also, ironically, responsible for its initial inception.

argued that the ecological technology of greenhouse gas inventory had its application extended with the formulation of this program, as the emissions were measured and averaged for the ‘Canadian’. The One-Tonne Challenge is based on the knowledge that the average Canadian generates 5.4 tonnes of greenhouse gas emissions per year. The forms of conduct linked to the production of emissions are diverse and heterogeneous, involving many mundane and everyday practices ‘*on the road, at the office, and at home*’. These practices become linked together because they consume energy which is derived from the burning of fossil fuel. The ecological technology of greenhouse gas inventory will be deployed to measure the performance of the subject of government, which, as the analysis proceeded to indicate, the program constitutes as the consumer.

Through the provision of information and incentives, the state will govern the conduct of consumers, so that they will make the appropriate environmental choices and become energy efficient. The analysis of the practical guide that was distributed to the population demonstrated the extent to which the prescriptive statements of the One-Tonne Challenge sought to modify and regulate consumer conduct. By carrying out the prescribed actions, consumers will have demonstrated their commitment to the environment as well as saved money. If the population were to successfully undertake this challenge and become more energy efficient, the Canadian market economy would undergo ‘*transition*’, or what would later be called ‘*transformation*’, such that greenhouse gas emissions would be in accordance with the ambitious emission reduction targets set out by the Kyoto Protocol. As explained by the Government of Canada, “[t]his Plan in itself will not solve climate change, but it will engage Canadians and their governments to make decisions and choices in order to reduce GHG emissions, respect Canada’s Kyoto commitment and fight climate change over the longer term” (GC 2005: 2).

CHAPTER FIVE: RATIONALIZING PROGRAM FAILURE AND FUNCTION

In chapter three, genealogical diagnosis was oriented to how climate change became a problem requiring ‘*management*’. It was argued that the problematization of climate change took place through the principle of sustainable development, which would serve as the basis for the ecological rationality of government. The fourth chapter picked up where this genealogy left off: archaeological analysis was used to reconstruct the key programmatic statements of the One-Tonne Challenge. Analysis revealed that this program of government had, as among its conditions of existence, the invention and deployment of the greenhouse gas inventory, which sought to cross the technological threshold by coupling the measurement of personal greenhouse gas emissions with the energy-efficiency of consumers. The application of this ecological technology has been extended to a wide range of ‘*small*’ everyday actions ‘*on the road, at work, and at home*’. Interpretative analytics has thus far isolated the assemblage and deployment of an ecological rationality and technology of government in the archive of the One-Tonne Challenge.

When considered overall, the archive has so far only been indicative of what the program is intended to *do*, but there are also important documents concerned with addressing what the program *is* actually doing – second order statements made about the ‘real’ performance of the program. In line with one of the central hypotheses of the governmentality literature, the One-Tonne Challenge *is* declared by public authorities to be a “*failure*”: it does not demonstrably reduce personal greenhouse gas emissions through the creation of energy-efficient consumers. The criticism is not solely negative. Indeed, the One-Tonne Challenge must be continually reproduced as a program of government but it must also be complemented by other governmental techniques. “*Only an intelligent combination of information, incentives, regulations and cooperation will get the One-Tonne job done. Without all of these, the likelihood*

of failure looms large” (SSCEENR 2004a: 35). So, in addition to the negative criticism of the One-Tonne Challenge, this chapter will analyze the positive elements of what will be described as an ecological critique of government. It criticizes the functioning of the program and proceeds to make statements about the need for more government to realize the ecological objectives of government. Thus, it will be argued that the very rationality underpinning so much of the One-Tonne Challenge would paradoxically inspire the critique of the program. In the first section, this ecological critique will be elaborated through an analysis of the first formal review of the One-Tonne Challenge, conducted by a senatorial committee during the initial implementation of the program. The main criticism of this program concerns its reliance on voluntary action, which will be argued to be a liberal principle of government. The criticism of the program becomes positive, that is, it becomes an ecological critique when it offers alternative governmental techniques through which to achieve the objectives of the One-Tonne Challenge.

Following the discussion of these positive elements, the second section will analyze the formal audit and evaluation of the program, which was carried out in 2006 just as the One-Tonne Challenge was about to be terminated by the newly elected Conservative government of Canada (cf. NRCan 2006). In this document, the description of what the One-Tonne Challenge *is* oscillates between a “*public education and outreach program*” and a “*carbon-mitigation program*” (cf. DAEC 2006: 16-7). Ultimately, it is defined and evaluated as the former such that the One-Tonne Challenge performed as expected: by measuring public perception through qualitative and quantitative social scientific research, it could be demonstrated that a growing percentage of the population became aware of the problem of climate change, its link with energy-efficiency and consumption, and, to a lesser extent, the personal actions that should be taken to mitigate personal emissions i.e. the practices specific to the energy-diet (DAEC 2006:

14-5). Further, when viewed as a public education and outreach program, the audit and evaluation of the One-Tonne Challenge maintained that the program was contributing to the necessary “*market transformation*” which would be achieved in large part through the greater energy-efficiency of the consumer (cf. DAEC 2006: 2, 13, 14, 21, 26). In this way, it can be understood as adhering to neo-liberal principles for the government of the state, where the role of the state is restricted to altering the conditions of the market economy, not its actual operation. It will also be argued that the audit and evaluation pegs this program to the neo-liberal rationality of government, because market transformation is treated as an ongoing process which will take some time to carry out.

The third section will interpret how market transformation might be viewed according to the ecological rationality of government. It will be argued that ecological government would entail a *radical* transformation of the market economy, where the state regulates the cost of energy so as to structure the field of possible actions of consumers in such a way that they will be compelled to become more energy efficient, regardless of their personal perceptions and attitudes towards climate change. This section will then consider whether the radical market transformation brought about by ecological government would be desirable, since it would entail an asymmetrical power relation between consumers and *the* government i.e. radical market transformation would constitute a state of domination.

The formulation of ecological critique

Studies in governmentality frequently draw attention to how the activity of criticism is an integral element in liberal practices of government. That is, in both its classical and modern variants, liberal criticism repeatedly invokes the transactional reality of the market not only to set

limits to governmental intervention, as is commonly understood, but to also establish the very principles of liberal rationalities of government (Burchell 1996: 23). However, criticism of government and its programs is not necessarily liberal. It can be derived from alternate rationalities of government, as is the case with the *ecological* criticism of the One-Tonne Challenge. This section will first elaborate on this criticism, one which arguably has, as its point of departure, the problematization of the liberal principle of autonomy. Ecological criticism maintains that the One-Tonne Challenge will fail to meet its ecological objectives, on account of its strict reliance on voluntary action. In order to ensure that a ‘*low intensity GHG emission lifestyle*’ (cf. Appendix E) becomes a societal norm, ecological government must escape the “*confines*” (cf. SSCEENR 2004: 6) imposed by liberalism and be willing to directly and actively intervene on the market economy. The second part of this section will turn to discuss the positive aspects of this ecological critique, where techniques of government are advanced that aim to transform the relations between consumers and the marketplace, so as to structure the field of possible actions in a much more economically deterministic way, circumventing the reliance on the voluntary action of consumers.

The problematization of voluntary action

The first expression of the ecological criticism of the One-Tonne Challenge appeared the day that the program was formally launched by the Government of Canada. In its March 24, 2004 media release, ‘One-tonne challenge too light’, the director of the climate change program for the David Suzuki Foundation argued that “[v]oluntary action alone – whether it be by individuals or large companies – just isn’t going to cut it” (DSF 2004). This statement does not reflect the liberal emphasis on autonomy, either as a regulative ideal for government or as a governmental product (cf. Hindess 1996b: 65). It signals a different approach to government,

where *involuntary* action will have to be considered to augment programs like the One-Tonne Challenge.

The ecological criticism of the One-Tonne Challenge was considerably elaborated upon by the Standing Senate Committee on Energy, the Environment and Natural Resources (SSCEENR 2004a) in its formal review of the One-Tonne Challenge. During the compilation of this review,

[t]he Committee heard testimony from more than 35 witnesses including the Ministers of Environment and Natural Resources, representatives from the energy industry, environmental groups and government departments. (SSCEENR 2004b)

These ‘authoritative’ witnesses were heard as early as 2003 and the review was completed on October 19, 2004 (SSCEENR 2004a: iii). Although the program had only been implemented for eight months, the public release of the review in November was accompanied by a media advisory, wherein the Chair of the SSCEENR (2004b), Senator Tommy Banks, announced what can be taken to be the principal conclusion of the review: “[s]o far, the One-Tonne Challenge has failed to engage Canadians”. The immediate question that the analysis of this document intends to address is: *how* is this statement concerning program failure rationalized?

In the introduction to the SSCEENR (2004a) review, the problematization to which the One-Tonne Challenge was directed as a solution is repeated: human activities are altering the “*balance*” of greenhouse gas emissions in the atmosphere resulting in climate change and the subsequent need to “*lessen the harm that we are doing [to] our environment and lessen the burden that we will pass to our children and grandchildren*” (1). From this, the concern with how the present will impact the future is clear, though the principle of ‘sustainable development’ is not explicitly referred to. Nevertheless, the document continues by describing one of the key historical events leading up to the One-Tonne Challenge: the ratification of the Kyoto Protocol.

Upon explaining Canada's international commitment under the Kyoto Protocol, "*Your Committee*", the enunciative subject of the document (cf. Weir 2008: 378), suggests that "[i]t is *inconceivable that we would not do everything possible to live up to our commitment*" (SSCEENR 2004a: 2). Many of the key programmatic statements of the One-Tonne Challenge are then repeated, which are articulated through the ecological technology of greenhouse gas inventory, now applied at the 'personal' level e.g. that individual Canadians, on average, produce 5 tonnes of greenhouse gas emissions per year (cf. SSCEENR 2004a: 3). The SSCEENR review (2004a: 2) goes on to note that the One-Tonne Challenge could, in principle, reduce the overall greenhouse gas emissions of the population by 32 megatonnes per year, where a total overall reduction of 240 megatonnes is required in order to meet Canada's international climate change objective. Thus, ecological objectives – personal and national reductions in greenhouse gas emissions – are not challenged in this document. Instead, the ecological criticism of the program is principally directed at its liberal premises, as "[t]he *One-Tonne Challenge is, of course, voluntary*" (SSCEENR 2004a: 3).

Since the One-Tonne Challenge is premised on consumers taking action voluntarily, there can be no guarantee that it will have its desired effects: the commitments and sacrifices that it entails will only be the outcome of the free choices of consumers. This becomes clear in the preface to the SSCEENR review where the One-Tonne Change is made analogous to the diet, "that ubiquitous exercise in self-government" (Dean 1999: 17).

The Government of Canada is asking Canadians to go on a diet – a new diet that has nothing to do with food. It is an energy diet that will see each of us lose a few pounds – well actually, a tonne – of the approximately five tonnes of greenhouse gases, such as CO₂, that we add individually on average, to the atmosphere, just by everyday activity.

If all orders of government use their powers to convince us – and to help us save money on our new energy diet – then reducing our fossil fuel intake will be more than trendy. It will become a habit.

But there are roadblocks to changing our daily lives. Any kind of new diet means giving up a few things that we like. It means changing our unconscious habits, and that is always difficult. There has to be a strong incentive to bring about change – a motivator. Our pocketbooks are one. The health of our children is another, and lifestyle still another. ***We are not going to do it until one day we see that we must.*** Now is the time. Let's get on with it. (SSCEENR 2004a: iv, emphasis added)

Like any other diet, this practice in self-government would require conscious reflection on daily habits as well as voluntary personal sacrifice, which are often difficult ascetic practices no matter the specific forms of conduct targeted. Nevertheless, 'we' – Canadians – must be *convinced* by *the* government to undertake this energy-diet, *prior* to the further intensification of the effects of climate change. Indeed, the passage above seems to suggest that, at its current stage, climate change is not enough of an existential motivator for Canadians: its effects are not tangible to the human senses, at least in Canada. This proves to be an impediment in another respect as well. As the document proceeds to note, convincing Canadians to voluntarily restrict their energy consumption becomes all the more difficult for *the* government because, unlike food diets which visibly alter the size and shape of the human body, the results of an energy-diet that reduces personal greenhouse gas emissions are not in any way perceptible to the human senses (SSCEENR 2004a: 3, 5).

Having framed the One-Tonne Challenge as an energy-diet that Canadians might have difficulty embracing, the problematization of voluntary action as it pertains to ecological government is further expanded upon in the review of the program. This problematization is linked with climate change, since the latter is positioned, at a rhetorical level, as a "*crisis that deserves our attention and commitment to change*" (SSCEENR 2004a: 3). While acknowledging

that once the programmatic statements have been disseminated to the population “*some*” Canadians will respond to the “*crisis*” of climate change and carry out the necessary “*personal sacrifice in everyone’s interests*”, the SSCEENR (2004a) review goes on to state that “[s]ome of us at the other end of the spectrum will adamantly resist changing our habits unless and until we see greater incentives” (11). Positioned in the middle of this ‘*spectrum*’, the third group is considered the largest and most significant. Although those in this group recognize the importance of the problem of climate change, they are not willing to commit to this energy-diet and endure the necessary personal sacrifices, simply because others are not doing the same (SSCEENR 2004a: 11). Since others do not exercise the appropriate self-government, those in this middle group also freely choose to be resistant to the energy-diet, where such resistance occurs even though they have received and understood the information about the crisis of climate change. This leads the ecological criticism of the program to the following conclusion: “[m]otivating that third group requires measures to ensure that the vast majority of us will comply” (SSCEENR 2004a: 11). The measures alluded to in the SSCEENR review are certainly no longer public education and awareness programs. The document views the One-Tonne Challenge as limited in its capacity to bring about the desired change in the personal conduct of energy consumers (cf. SSCEENR 2004a: 5, 6, 12). Hence, the rhetorical questions: “*But will information and persuasion alone suffice? Or will some of us require more motivation?*” (SSCEENR 2004a: 3)

At this juncture, the ecological criticism of the One-Tonne Challenge emerges, not in an attempt to denounce the program – even the director of the David Suzuki Foundation regarded it as “*commendable*” (DSF 2004) – but in order to suggest alternative technical approaches for the ecological conduct of conduct, which, as will be discussed below, are in a state of tension with

liberal principles. It is in putting forward these ‘*measures*’ that the criticism discussed here is no longer solely negative; with the addition of positive, performative and productive elements, it becomes an ecological critique of government. The transition from criticism to critique can be concisely put as follows:

*Your Committee believes that the reduction of greenhouse gases in general and the One-Tonne Challenge in particular are essential to the future well-being of Canadians. **We don’t think that reliance on information and moral suasion alone can achieve these goals.*** (SSCEENR 2004a: 4, emphasis in original)

Relying on information measures to incite voluntary action is thus viewed to be *necessary but insufficient* for the government of energy consumers (cf. SSCEENR 2004a: 6, 7).

The SSCEENR review relies upon survey and focus-group research to support this argument. For instance, it cites the results from focus-group research, carried out in 2003 and sponsored by the Government of Canada, which “*shows that **for a majority of Canadians, concerns about energy efficiency and climate change are not the primary drivers when it comes to consumers’ decisions***” (SSCEENR 2004a: 5, emphasis in original). Other “*purchasing factors*” are typically given priority when a consumer is making a decision, “*such as price, comfort, and style*” (SSCEENR 2004a: 5). There are two explanations given to account for the lack of importance assigned to the problem of climate change on the part of Canadian consumers. First, it is suggested that climate change does not factor into the purchasing decisions of consumers because it has a “*limited observable impact on their daily lives*” (SSCEENR 2004a: 5). This “*very visceral reason*” is compounded by a more abstract one, namely, that climate change is perceived by Canadians as a “*broad and complex*” problem, such that the efforts and concerns of one individual cannot “*really make a meaningful difference*” (SSCEENR 2004a: 5). Ecological critique is clearly advanced on the basis of this social scientific research on

public and consumer attitudes towards climate change. This knowledge is related to government as indicated in the following passage:

*If some Canadians do not think of climate change as a priority, or doubt that changing their individual personal behaviour will pay any kind of meaningful role in countering it, then can governments really be satisfied with **confining themselves to gentle persuasion when it comes to living up to our Kyoto commitments?** We don't think so (SSCEENR 2004a: 6, emphasis added).*

In order to fulfill Canada's commitments under the Kyoto Protocol, a different approach to government needs to be sought, one that no longer attempts to prompt voluntary action through 'gentle persuasion'. From this, ecological critique is arguably directed at liberal approaches to government, as public education and outreach programs, such as the One-Tonne Challenge, are deemed insufficient for achieving the necessary personal greenhouse gas emissions reductions. In order to achieve this ecological objective at the individual level, government must no longer be content in its attempt "to convince individual Canadians to participate in the One-Tonne challenge" (SSCEENR 2004a: 4). It must escape the constraints on government imposed by liberalism, so as to induce the desired conduct in each and all. Even though the One-Tonne Challenge was only in its inaugural year, it was deemed insufficient for it ultimately relied upon liberal governmental techniques that operate through voluntary action – i.e. on the basis of autonomy.

*Your Committee believes that if the Government of Canada is going to convince individual Canadians to make the kind of behavioural changes that might actually see us respond to the One-Tonne Challenge, it cannot rely on education and awareness campaigns alone. **We must do more.** (SSCEENR 2004a: 7, emphasis added)*

The One-Tonne Challenge does no more than offer practical guides to individuals in their uptake of an energy-diet, where they will make changes in their conduct only once they have freely chosen to do so; this program cannot in any way ensure subsequent compliance with this energy-

diet. So, despite the impending crisis of climate change, *the* government has not yet taken recourse to any of the interventionist techniques already at its disposal, which would more effectively ensure that Canadians actually engage and practice energy-efficiency.

Fiscal tools for ecological government

The discussion will now turn to the positive aspects of the ecological critique, which focus on the “*fiscal tools*” (cf. SSCEENR 2004a: 15) available to *the* government, which can be deployed to modify and regulate consumer conduct. According to ecological critique, through the application of these governmental techniques, the One-Tonne Challenge will be turned “*from a pipe-dream into a reality*” (SSCEENR 2004a: 13). There are several ‘*fiscal tools*’ that ecological critique advances as technical alternatives to this “*education and awareness campaign*” (SSCEENR 2004a: 7). In the SSCEENR (2004a) review, it is argued that these techniques are going to be far more effective in terms of producing energy-efficient consumers and reducing personal greenhouse gas emissions, precisely because they are no longer premised on voluntary action. Instead, as discussed in greater detail below, they are primarily premised on notions of *economic interest*, where these interests can be calculated upon and ultimately directed by government. That is, consumers have rational economic interests which can be manipulated such that they engage in the forms of conduct desired. This is, of course, the classic liberal economic subject of interest known as *homo economicus*.

However, the overall significance of the discussion on these ‘*fiscal tools*’ resides in their approach to the market economy, which evinces a much different understanding than the prevalent neo-liberal one. Neo-liberalism posits the market as a site of competition, where *the* government – i.e. the state – intervenes in order to prevent the formation of monopolies and price cartels; this ensures that prices remain competitive (Foucault 2008[1979]: 177). Once again,

ecological critique signals a completely different approach to this modern variant of liberalism. That is, rational ecological government actively intervenes in the market so as to regulate the price of energy: “*We have to ensure that energy prices - all energy prices - realistically reflect the true costs, including the very real environmental costs, that are part of the production and the consumption of energy*” (SSCEENR 2004b). As David McGuinty, the former head of the National Round Table on the Environment and Economy, explained: “*We now have to move across a line in economic thinking where we must begin internalising costs that remain external*” (quoted in SSCEENR 2004a: 11). The use of the ‘*fiscal tools*’ discussed below would reflect this proposed shift in economic thought. *If* these are taken to belong to an ecological rationality of government, this would entail a departure from liberal modes of government, particularly in terms of delineating “what is within the competence of the state and what is not” (Foucault 1991c[1978]: 103). That is, the techniques of government possessed by the Government of Canada would be used to plan much of the operation of the market – this is completely at odds with current neo-liberal conceptions of the role of *the* government (cf. Foucault 2008[1979]: 172).

The feebate program

It is important to note at the outset that these ‘*fiscal tools*’ are not regarded as a form of taxation, where, for instance, *the* government might attempt to impose a universal ‘carbon’ tax on the population. David McGuinty asserts as a “*fundamental truth*” that taxation, a deductive exercise of sovereign power that entails subjugation, is not going to “*positively effect outcomes on climate change*” (SSCEENR 2004a: 15). The concern is to induce the desired consumer conduct *through* these governmental techniques, since, after all, only the circuits of exchange

and consumption are pertinent to the One-Tonne Challenge.⁴⁷ Of the ‘*fiscal tools*’ discussed in this document, those that are the closest to liberal government is the proposed implementation of the ‘*feebate*’. As then Minister of the Environment, the Honourable David Anderson (SSCEENR 2004a: 15), pointed out, this program of government can be attributed to the economic doctrines of Adam Smith, whose influential theory of the ‘invisible hand’ maintains that the pursuit of individual interests will yield collective benefits (cf. Foucault 2008[1979]: 279). From this, the provision of incentives that coincide with individual interests “*is the best way to achieve goals*” (Anderson quoted in SSCEENR 2004a: 15). Again, this is evocative of *homo economicus*, the rational subject of interest posited in liberal economic discourse.

Among the possible incentives suggested that coincide with the interests of the consumer, whose fundamental rational interest is to always pay the minimum amount, are rebates on the purchase of fuel-efficient vehicles such as hybrid cars and trucks (SSCEENR 2004a: 17). Meanwhile, if a consumer is choosing to purchase a vehicle that is relatively fuel-inefficient, a fee could be levied. When combined, this is referred to as a “*feebate*” program; it would be put into operation at the “*point of purchase*” (SSCEENR 2004a: 17). Since the feebate program is supposed to involve a redistribution of capital, as opposed to simple accumulation for the state

⁴⁷ There are other programs that have, as their object, the government of ‘producers’, which are outlined in the Government of Canada’s climate change plans. For its part, the Standing Senate Committee on Energy, Environment and Natural Resources does consider “*regulatory reform*” as a “*powerful government tool for altering personal behaviour when there is an imperative*” (SSCEENR 2004a: 19). Interestingly, regulations are designated as a “*back-up*” to incentives (SSCEENR 2004a: 19). In order to ensure that consumers purchase, at the point of exchange, the most energy-efficient products, the state can gradually impose ‘*more stringent*’ universal standards on manufacturers (SSCEENR 2004a: 20). Another interesting and relevant point to be made about this discussion on regulatory reform is its problematization of “*voluntary compliance*”, specifically in terms of getting the major manufacturers to introduce improved fuel efficiency standards for vehicles (SSCEENR 2004a: 21). This gives some indication as to the extent of the problematization of voluntariness through ecological critique: it is not restricted to consumers alone. The theoretical perspective of liberal ecology in green criminology would be opposed to this problematization, maintaining that the private sector can be governed through voluntary compliance; it is a matter of ensuring the collaborative governance model is in place so as to ensure the self-regulation of private corporations and manufacturers.

treasury, it cannot be regarded as a tax, on account of this revenue-neutrality (SSCEENR 2004a: 18). When considered overall, this program and the accompanying technique of financial incentive are undoubtedly closer to liberal modes of government. That is, the consumer is expected to exercise their freedom of choice according to their rational economic interest, which, in the case of purchasing a personal vehicle, will be to do so at the least possible expense. The technique of incentive will structure the field of possible actions for the consumer at the point of purchase such that fuel-efficient vehicles will have greater incentives attached, while the opposite would be true of fuel-inefficient vehicles. By increasing fuel-efficiency in vehicles, the collective greenhouse gas emissions of individual Canadian consumers will be reduced. So, although the overall objective of feebate programs directly coincides with ecological objectives, it would ultimately continue to be a liberal practice of government.

In this way, the technique of government of financial incentives surely cannot be regarded as the epitome of ecological government. In similar fashion to the One-Tonne Challenge, there is a reliance on the voluntary action of consumers, although the feebate program does make a more direct appeal to their rational economic interest. While there would certainly be many ‘wise’ consumers aligning their conduct with the feebate program, many others would continue to *choose* to pay the additional fees in order to purchase relatively fuel-inefficient vehicles. In either case, the consumer practices freedom through the purchases that they make in the marketplace. The decision a consumer makes at the point of purchase can be only altered to a certain extent by financial incentives: it can never be guaranteed to be the one desired. A further problem with the feebate program concerns its limited application; it can only be applied at the point of purchase and is most effective when the rebates or fees would be substantial, as in the

purchase of a vehicle or home. Thus, the feebate program would be most effective when the incentive coincides with personal and economic interest.

The manipulation of energy price signals

The next technique of government to be discussed overcomes the limits of feebate programs as it aims to completely transform the relation between the consumer and the state in the market economy. In terms of modifying and regulating the conduct of the consumer, this *'fiscal tool'* dispenses with voluntary action, indicating the release of the ecological rationality of government from the confining technical edifices of liberalism. It is the most extensively discussed governmental technique in the SSCEENR review and it clearly represents the internalization of previously external – i.e. environmental – costs in a much more direct way than financial incentives. As a result, the technique of government about to be discussed is decidedly ecological for it would bring a radical departure from extant neo-liberal principles for the government of the state. Indeed, if these ecological principles were to be fully realized, this would surely bring about a *'radical transformation'* in the operation of the market economy, and of the relation between consumer and the state. If this were the case, the essential question would then be: is this radical market transformation desirable for the community of the governed i.e. Canadian energy-consumers? The desirability of an ecological market revolution will be returned to in the following section of this chapter.

As indicated above, price is understood to be among the key determinants for consumer purchasing decisions (SSCEENR 2004a: 9). A fundamental tenet of modern economic theory is that *"demand for nearly any good or service is inversely proportional to its price"* (SCEENR 2004a: 9). From this, increases in the price of energy will result in decreases in demand, such that consumers will become more efficient in their energy use, ultimately resulting in lower

greenhouse gas emissions. While those endorsing the manipulation of price signals recognize that increasing the price of energy will encounter resistance among consumers, this is deemed to be absolutely necessary because current energy prices for the Canadian population are simply “*not realistic*” (SSCEENR 2004a: 9, cf. 12). That is, energy prices do not include the costs of greenhouse gas emissions, in particular carbon dioxide (SSCEENR 2004a: 10, 11). “***There is no price in our marketplace of any goods or services involving the use of any form of energy that truly includes the costs of GHG emissions and their consequent environmental impact***” (SSCEENR 2004a: 10, emphasis in original). Thus, ecological government would calculate the “*true*” price of energy, so that it comes to reflect the “*real total costs [...] to all of us*” (SSCEENR 2004a: 10) in terms of greenhouse gas emissions and other environmental pollutants. Once these calculations have been made, the state must actively and routinely intervene in the marketplace to ensure that energy prices are true *representations* of the pertinent external and internal costs; this ‘*fiscal tool*’ is known as the “*price signal*” and it is premised on the economic assumption that increased energy costs will invariably result in decreased overall energy consumption levels, in all consuming sectors i.e. it becomes a national-level policy that would affect the conduct of all and each. As a result of the introduction of price-signals, the practitioners of ecological government maintain that the specific practices prescribed by the One-Tonne Challenge would, out of sheer economic necessity, become more widespread in the life-conduct of each and all. In this way, it is no longer a question of basing the conduct of conduct on voluntary action alone.

Energy-price signals have already been put into effect in many parts in Europe, where consumers there pay more “*realistic*” prices for their energy consumption (SSCEENR 2004a: 10). An anecdote is shared by one of the ‘*testimonies*’.

David McGuinty, former CEO and President of the National Round Table on the Environment and Economy, told us that he has had that experience:

‘I am a huge fan of price signals. I used to live in Rome, Italy, and I paid Canadian \$2.25 per litre for gas. I can assure you I was more careful about my driving than I am here. The price signals area huge area to re-evaluate’ (SSCEENR 2004a: 10, emphasis in original).

The best definition of ‘experience’ is perhaps given by Foucault (1991a[1978]): “An experience is something that you come out of changed” (27). Clearly, the person of David McGuinty did have an experience linked to a ‘*huge area*’ that needs re-evaluation: the state regulation of energy prices. When living in Italy, he was more careful about his driving, where he was implicitly referring to the energy expenditure associated with his driving, which is associated with *environmental* and economic costs – the particular order of importance for these costs is *the* noteworthy aspect here, as his prior testimonial attests to. When McGuinty and other advocates of price-signals are referring to the government of the state, where one of its new ‘competencies’ is the monitoring and regulation of energy-prices, the government of others and oneself is also implied, specifically in the application of ecological government to practices of the self, with the, at once personal and collective energy-diet encapsulated by *Your Guide to the One-Tonne Challenge* (GC 2004). There are, to be sure, more systematic elaborations of the energy-diet, as in Chris Goodall’s (2007), *how to live a low-carbon life: the individual’s guide to stopping climate change*.⁴⁸

When considered overall, the manipulation of energy price-signals by the state would signal the practice of ecological government. As the analysis in the previous chapter revealed, the energy-diet prescribed by the One-Tonne Challenge was already quite expansive: it covered a range of small actions to be taken at home, at work, and on the road, all of which are areas that

⁴⁸ The original title is in not capitalized, hence the italics at the end of the sentence are not mine.

the general population regularly engages with on an everyday basis. The government of everyday life would thus be imprecated with the government of the state in a permanent asymmetrical manner: the state would *regulate* and *modify* the conduct of consumers in relation to climate change – the regulation of energy price signals would entail the state conduction of everyday life. The program of government involved with the manipulation of price signals would probably yield improvements in terms of the Government of Canada's ecological objectives: lower personal *and* corporate greenhouse gas emissions would result from the uptake of practices that increase energy-efficiency. The technology of greenhouse gas inventory would monitor these decreases in emissions. As discussed in chapter three, measurements for entire nations and 'large-emitter sectors' of the domestic economy can already be ascertained through this technology (cf. Appendix C). However, as the next document in the archive will indicate, this ecological technology of government cannot be economically applied to measure changes in GHG emissions at the personal level, where economy is used in its practical, managerial sense: to be effective, the technique of measuring the totality of 'personal emissions' should be applicable without difficulty and *en masse*. The idea, yet to be put extensively into practice, would be to perform environmental audits of personal homes (cf. SSCEENR 2004a: 31), using personal questionnaires to acquire knowledge about those aspects of individual life that are not immediately perceptible to the auditor.

This section has sought to elaborate an ecological critique of government. This critique accepts the ecological objectives posited by the One-Tonne Challenge, but maintains that the most effective way of achieving reductions in greenhouse gas emissions at all levels is to have state monitoring and regulation of energy-prices (cf. SSCEENR 2004a: 12). Economic theory is thoroughly implicated in this critique for the outcome of the state manipulation of energy-prices

is understood to be an overall reduction in greenhouse gas emissions, as well as a constant impetus to improved energy efficiency (SSCEENR 2004a: 35). It is important to keep in mind that ecological critique does not entirely negate the One-Tonne Challenge as a program of government: information dissemination about climate change and the role that individuals can play in mitigating it continues to be a task for government, in both the broad and narrow sense of the word (SSCEENR 2004a: 35). However, ecological government would go considerably beyond information: it is, in short, *for more government*, not only in the marketplace but also in everyday life. Thus, it is also a rationality seeking to program the ‘government of society’, to cite the main theme of Dean’s (2007) latest study.

Nevertheless, as the next section will aim to illustrate, despite the practitioners of ecological government declaring it to be a ‘*failure*’, the One-Tonne Challenge persisted for another two years without the implementation of any of the governmental techniques – financial incentives and price signals – discussed here. This might be attributed to the tacit adhesion to neo-liberal principles of the market, which are privileged in contemporary practices of government, as the discussion will now attempt to demonstrate.

Adhesion to neo-liberal market principles

The *Evaluation of the One-Tonne Challenge* (DAEC 2006) is among the most interesting and significant documents of the archive. Despite advancing ecological principles, objectives, and technologies of government, this document can be interpreted to indicate that neo-liberal principles are the ones actually put into practice through the One-Tonne Challenge (cf. DAEC 2006: 13). In this way, neo-liberalism is the ascendant rationality inscribed in the implementation of the One-Tonne Challenge. The audit and evaluation of the program does, however, serve to

further indicate the tension between neo-liberal and ecological rationalities of government; thus, this document does not altogether abandon considerations of ecological government. This section will begin the analysis of the audit and evaluation of the One-Tonne Challenge by first examining how ecological government continues to be articulated in this document. Following this, the analysis will then turn to consider how practical limits to the technology of greenhouse gas inventory were such that the degree of correspondence between the effectiveness of the program and its ecological objectives could not be rendered knowable and amenable to calculation (DAEC 2006: 4, 27, 30). That is, until this ecological technology of government is further refined and developed, it will be impossible for *the* government to verify whether the population is undertaking the energy-diet prescribed by the One-Tonne Challenge (DAEC 2006: 2, 17). As a result, it is considered, in the final instance, as a public education and outreach program which is oriented towards market transformation through the modification of consumer conduct (DAEC 2006: 26). According to neo-liberalism, this is the extent to which *the* government can intervene in the market without becoming an impediment to economic growth (cf. Foucault 2008[1979]: 207). The final part of this section will elaborate on the exercise of neo-liberal principles in the implementation of the One-Tonne Challenge.

Articulating ecological government

In the 2004 SSCEENR review of the One-Tonne Challenge, public education and awareness was acknowledged as an important but only preliminary programmatic step towards the reduction of personal and, by implication national, greenhouse gas emissions (cf. SSCEENR 2004a: 35). The ecological critique elaborated by the senatorial committee was concerned with how the state was not deploying all the techniques of government at its disposal to ensure consumer compliance with ecological objectives, but what was viewed as particularly

problematic was that the difficult energy-diet prescribed by the One-Tonne Challenge would only be undertaken on the basis of voluntary action. Added to this, the SSCEENR review suggested that the actual effects of climate change are not presently tangible enough to serve as a motivator for large numbers of the Canadian population to voluntarily undertake, at the personal level, the energy-diet, with the commitment and sacrifices this entails. The positive aspect of this ecological critique arose when financial incentives offered by feebate programs and state regulations of energy-prices were argued to be more effective in achieving emission-reductions through increased energy conservation and efficiency. Although these ecological techniques of government are articulated to a certain extent in the 2006 evaluation of the One-Tonne Challenge, they are certainly not as comprehensive; this might be considered the first subtle indication that the One-Tonne Challenge was not necessarily tied to the ecological rationality of government.

It is important to note at the outset of analysis that ecological objectives continue to be posited in the audit and evaluation of the One-Tonne Challenge: in order to mitigate the effects of climate change, those types of conduct that produce greenhouse gas emissions must be modified and regulated (DAEC 2006: 1, 2, 13). This “*climate change goal*” is specifically linked with “*daily activities*” involved with energy consumption at the “*individual level*” (DAEC 2006: 2). Education and outreach programs like the One-Tonne Challenge are deemed “*relevant*” to this ecological objective because they provide consumers with the information needed to make the appropriate choices in the marketplace (DAEC 2006: 2). That is, as discussed in further detail below, the dissemination of information to energy consumers is expected to facilitate “*market transformation*” i.e. as the population becomes more aware of the link between climate change and energy consumption, informed consumers will make purchasing and lifestyle decisions on

account of energy efficiency, thereby stimulating the manufacture of more energy-efficient products (DAEC 2006: 2). But the crucial question is: how should this market transformation occur, given the possibility of increasingly harmful effects of climate change? Is this market transformation going to be gradual or must it be brought about as quickly as possible through more interventionist government? As the remainder of the discussion will aim to show, ecological and neo-liberal rationalities of government approach these questions very differently. To demonstrate their respective approaches to market transformation, I would first like to consider how ecological government continues to be articulated in the audit and evaluation before turning to the neo-liberal approach towards market transformation.

It is interesting but perhaps not too surprising to come across elements of ecological critique in the 2006 evaluation and audit of the One-Tonne Challenge. As this document notes, throughout the implementation of the One-Tonne Challenge, social science research on public attitudes and perceptions was conducted in order to assess the effects of the One-Tonne Challenge with some notable results:

a majority of Canadians believe that it will be difficult to personally meet such a Challenge. The perceived difficulty remains most evident among those Canadians that are emitting relatively more GHG emissions. Key barriers to actions include low interest/concern, the lack of information about how to reduce emissions and the perception that the Challenge is too inconvenient or time-consuming. (DAEC 2006: 2)

Even though a greater share of the population had become aware of the problem of climate change and their relation to it through this public education and outreach program, there continue to be barriers to action, which are “*most evident among Canadians with higher household incomes*” (DAEC 2006: 15). These barriers are not tangible: they are erected by the *mental* perceptions, attitudes, and interests held towards the proposed energy-diet, which have been assessed according to social scientific methods: telephone surveys, mailed questionnaires, focus

group-research. To be sure, the negative mental perceptions towards the energy-diet are a form of resistance to the One-Tonne Challenge, which has been codified in the archive of the program.

In an attempt to counter these cognitive resistances, the question of implementing the adequate ‘*motivators*’ arises in the audit and evaluation of the program. Indeed, “[t]he focus here was no longer about convincing Canadians that climate change was an issue. Instead, it was to encourage and motivate Canadians to take personal action to reduce GHG emissions” (DAEC 2006: 6). In order to overcome the motivational barriers, the audit and evaluation suggests the “need to complement OTC activities with additional tools (e.g., incentives, regulations) that could provide additional motivators for taking action to reduce GHG emissions” (DAEC 2006: 2, cf. 3, 14, 28, 29). In this way, the techniques for ecological government are articulated once again; in both instances, ecological government is systematically formulated in those documents that produce second-order statements concerning the One-Tonne Challenge i.e. calculated reflections on ‘*real*’ program performance.

Again, ecological critique clearly surfaces as the One-Tonne Challenge is *only* the point of departure for ecological government: “public education means alone are not sufficient to capture those who are not already on board” (DAEC 2006: 28). In order to motivate all Canadians, *the* government must do more to ensure that the population is engaging in the energy-diet at the individual level. Thus, *the* government must consider “**complementing the OTC activities with additional tools (e.g., incentives, regulations) that could enhance the impacts of the program**” (DAEC 2006: 16, emphasis in original). Although the audit and evaluation of the One-Tonne Challenges does not go into any depth as to what these “*incentives and regulations*” specifically entail, it does maintain that these “*complementary measures would enhance the degree to which Canadians citizens take action to reduce their GHG emissions*” (DAEC 2006:

28). In this way, this document is reaffirming the sequence of ecological government described in the 2004 SSCEENR review, where an ‘*intelligent combination of information, incentives, [and] regulations*’ is necessary to sufficiently motivate Canadians to undertake the energy-diet.

The audit and evaluation of the program has thus repeated the sequence of ecological government which proceeds as follows. First, the government disseminates information to the population concerning climate change and the relation of its consumption and lifestyle patterns to this ecological problem. At this point, *the* government is relying on the population to voluntarily undertake the energy-diet: the field of possible actions is structured by this information, so its success depends on a host of mental perceptions and attitudes, which could be resistant or conducive to the desired changes in conduct. Social scientific research into the mental perceptions and attitudes of the population regarding this program of government has revealed that a large segment of the population has received and understood the information the program disseminated, but refuses to modify and regulate its energy efficiency because the problem of climate change is too abstract or the energy-diet is not practiced widely enough. Subsequently, *the* government should deploy the technique of financial incentives, which would attempt to align economic interests with the desired conduct. Through this technique, the state is more actively structuring the field of possible actions in a way that it is oriented towards ecological objectives; but, again, this is premised on the liberal conception of the rational subject with economic interest – it is more or less a liberal technique of government.

Ultimately, should *the* government continue to encounter ‘*barriers*’ in its attempts to produce the desired response in the conduct of the population through information and incentives, it would resort to what is a distinctly ecological technique of government: the regulation of energy-prices. Having added the regulation of energy-prices to the competence of

the state, its ability to structure the field of possible actions would be considerable. On account of ecological objectives, the state would increase the price of energy in an attempt to increase energy efficiency and decrease greenhouse gas emissions. Faced with increasing costs in everyday routine activities, the consumer would align conduct to become more energy-efficient, regardless of their attitudes or perceptions towards the ecological objectives according to which they are governed. So, at this point, the state is certainly more ambitious and interventionist in its attempt to structure the field of possible actions, particularly those in the marketplace. In the end, this ecological rationality of government might be bringing about a state of domination, as government is exercised upon the actions of consumers in a way that is not necessarily in accordance with their interests, especially when conceived as *homo economicus*, the subject whose rational economic interest is always to pay the minimum cost (cf. Miller 1987: 2). With the introduction of the state regulation of energy-prices, an asymmetrical relation would be established between the state and the consumer.

This suggests that ecological government represents, quite simply, the attempt to do more in order to bring about the necessary market transformation. Information, incentives, regulation: this is the sequence of ecological government that has so far discerned from the analysis of the archive. The following passages will indicate the impediments to this program, such that it cannot be considered to be a distinctively ecological practice of government. While the sequence of ecological government has been explicitly referred in the audit and evaluation of the One-Tonne Challenge, the technology of greenhouse gas inventory was insufficient for measuring its performance, such that the uptake of the energy-diet could not be known. As a result of this technological deficiency, the audit and evaluation would decide to discursively frame the One-Tonne Challenge as a public education and outreach program, such that it functioned only to

provide information to the population and encourage it to practice the energy-diet. When evaluated according to these limited educational objectives, the program is not regarded as a *'failure'*: it has the desired performative effects for it positively influenced public perception and attitude towards climate change.

Failure to breach the technological threshold

From the discussion above, ecological government has a response to the question of market transformation, but the effectiveness of the state-regulation of energy-prices would be inhibited by the inadequacy of its ecological technology of government: the greenhouse gas inventory. As Dean (1996) notes, government, the conduct of conduct, crosses the technological threshold when it “locks conduct into performance” (63).⁴⁹ I would like to argue that the ecological rationality of government seeks to rely upon the greenhouse gas inventory in order to lock the energy-diet with energy-efficiency. The ecological technology of greenhouse gas inventory can measure relative changes in global and national emissions; refinements and improvements in scientific instruments and methodologies have made it be capable of taking more or less precise measurements at these levels. However, because this ecological technology cannot be applied at an individual level, the uptake of the energy-diet by the population cannot be adequately measured. Until the greenhouse gas inventory can be refined so as to be capable of

⁴⁹ Dean (1996) is referring to Foucault's discussion of the disciplinary technologies of government that were deployed immediately following the onset of the Industrial Revolution, with its massive demographic changes. One of the most important insights revealed by Foucault's (1995[1975]) *Discipline and Punish* concerns how a condition of existence for the proliferation of capitalism resides in the development of the political technology of the body which links “the production of docile and obedient individual with useful and efficient ones” (Dean 1996: 61). Just as disciplinary technology was required for such a macro-sociological change, then perhaps the adequate functioning of an ecological technology of government will be a precursor for significant changes to the competencies of the state. That is, the refinement of the greenhouse gas inventory is required in order to know whether the population is performing in terms of improving energy-efficiency and decreasing personal emissions. Only once the state can obtain knowledge of the performance of the population can the autonomous practice of ecological government take place, otherwise the state will have inadequate knowledge with which to govern the population.

measurement at the individual level, the performance of programs such as the One-Tonne Challenge cannot be measured at a single point or, what is more important, compared over time. As a result, the ecological government of personal emissions has yet to cross the technological threshold although “it seeks to render some aspect of conduct continuously and systematically calculable, measurable and comparable” (Dean 1996: 63). This proves to be an enormous deficiency for the realization of ecological government. Indeed, it precludes the possibility for the audit and evaluation of the One-Tonne Challenge to consider it as a “*carbon-reduction*” program, designating it, instead, as a “*public education and outreach program*”, the importance of which will be further discussed below.

For the moment, it is important to turn to how the audit and evaluation of the One-Tonne Challenge understands the governmental inability to measure *personal* greenhouse gas emissions. As the document notes,

greenhouse gas (GHG) measurement is a young and complex area of activity; there is a need for clearer alignment between tools/approaches used and desired outcomes and overall certainty and coordination is needed when implementing initiatives. (DAEC 2006: 4)

This statement is perhaps not only an expression of the uncertainty involved with measuring greenhouse gas emission at the personal level, but also an indication that, should ecological government involve, at some time in the future, the state ‘*regulation*’ of energy-prices, as suggested in the SSCEENR review, the resultant effects from the use of this ‘*fiscal tool*’ could not be evaluated in terms of any corresponding decreases in individual greenhouse gas emissions. Without further development and refinement of the GHG inventory, its deployment does not cross the technological threshold. That is, although the technical and practical means for planning the operation of the market economy are, in principle, already available to the state

such that it could regulate energy prices, there would be no way to obtain regular and precise measurements concerning the corresponding changes in personal greenhouse gas emissions. So, how would the state know how to set the ‘true’ price for energy, such that there would be real, corresponding changes in emissions? As long as this technology of government cannot be effectively deployed to measure each and all, it cannot lock conduct into performance (the population engaging in more energy-efficient practices so that its GHG emissions decrease), meaning that ecological government will be uncertain as to its actual effects because of the failure to cross the technological threshold.

The measurement uncertainties involved with the extension of the greenhouse gas inventory to the individual level revolve around the difficulties associated with “[r]eaching consensus on what is measured, how and by whom in a program that was highly dispersed and deployed through various partners, the risk of double counting, and attribution issues” (DAEC 2006: 27). Clearly, the technical means necessary to extend this technology to the individual level have not been met, even as the state attempted to prescribe its version of the energy-diet to the population. There is currently no way to regularly and economically measure the greenhouse gas inventory of individual consumers.⁵⁰ Even if consumers attempt the one-tonne challenge, the state could not ascertain what, if any, changes in emissions had occurred. This “*measurement*

⁵⁰ However, as Dean (1996) suggests, “the thesis of technological determinism can be only partially rejected” (58). In the case of the ecological technology of greenhouse gas inventory, efforts have been made to improve measurement capacity at the individual level, so that personal emissions can be obtained more accurately and conveniently (cf. Schlumpf et al. 1999). Briefly, in the study by Schlumpf et al. (1999: 3), focus group research is coordinated with a “*personal CO2 calculator*” computer program. Participants in the focus group enter data concerning various aspects of their “*lifestyle choice*” to provide an “*estimate*” of personal CO2 emissions. By inputting this data, participants can determine their personal greenhouse gas emissions relative to the average of the national and even world population and proceed, on the basis of this information, to attempt, to “*budget*” their “*lifestyle options*” with the assistance of the computer program, which provides recommendations about what possible changes could be made in their personal everyday conduct i.e. consumption patterns and purchasing decisions (Schlumpf et al. 1999: 3).

issue” (cf. DAEC 2006: 17, 30) means that the One-Tonne Challenge cannot be evaluated as an emission-reduction program, for it would, as the SSCEENR (2004a: 35, cf. 2004b) review argues, be a failure. This assessment of program failure could be accepted given that a large segment of the Canadian population was not even aware of the One-Tonne Challenge, and only a very small percentage of the population understood what ‘*small actions*’ needed to be taken to reduce personal greenhouse gas emissions (cf. DAEC 2006: 14, 15).

A liberal program in practice

The inability to measure the relative change over time in personal emissions did not prevent the audit and evaluation of the One-Tonne Challenge from advancing personal action as the immediate objective of the program, but it probably did impact how this document would view this objective. After all, the very first articulation of the one-tonne challenge in the Government of Canada’s 2002 *Climate Change Plan* stressed that Canadians should attempt to reduce their personal emissions by one-tonne per annum. This personal emission reduction goal surely gave rise to the official title of the program: the *One-Tonne Challenge* (cf. DAEC 2006: 6). However, as noted in the audit and evaluation four years later, “*the OTC was, in practice, treated more as an opportunity for Canadians to set a personal goal for action than an actual emission reduction target*” (DAEC 2006: 17).

This reflects a general tendency in the audit and evaluation: to regard the One-Tonne Challenge as a public education and outreach program instead of an emission-reduction program (cf. DAEC 2006: 16). By discursively framing the program in this way, the audit and evaluation established that “[t]he OTC was found to be on track to achieve its public education outcomes” (DAEC 2006: 2). Further, when the document is seeking to peg the program to a particular rationality of government, public education and outreach is not explained to be the first of a

string of emission-reduction programs of ecological government, with its attendant combination of information, incentives, and regulation techniques. As a public education and outreach program, the audit and evaluation of the One-Tonne Challenge maintains that it was intended to be a precursor to “*market transformation*”, wherein changes in consumer preferences will result in the production of more energy-efficient goods and services (cf. DAEC 2006: 2, 13, 14, 21, 26).

Following Foucault’s research on the liberal rationalities of government, the following passages will argue that, when posited as a public education and outreach program oriented towards market transformation, the One-Tonne Challenge is a formal state program that is adhering to market principles that are more or less neo-liberal. According to Foucault (2008[1979]), liberal rationalities of government all have in common the maxim that “government must not intervene on effects of the market” (145). However, neo-liberal principles of the market can be distinguished from earlier classical liberal principles in that the former are ‘constructivist’ in orientation, whereas the latter are ‘naturalist’. For the neo-liberals, the market does not reflect, above all else, the natural mechanisms of exchange but the constructed mechanisms of competition (Foucault 2008[1979]: 120). These latter mechanisms have been provided through the state government of society, which ensures that the “anti-competitive mechanisms of society” are kept to a minimum (Foucault 2008[1979]: 160). In this way, the state actively constructs the central mechanisms of the market economy. Once in place though, neo-liberals maintain that the state should then occupy a different role: “not to intervene on the mechanisms of the market economy, but on the conditions of the market” (Foucault 2008[1979]: 138). By adding the regulation of energy-prices to the competencies of the state, ecological government is intervening directly on the mechanisms of the market economy, preventing

competition from fixing the price of energy such that it tends towards the lowest cost on account of the mechanism of competition.

For its part, the audit and evaluation of the One-Tonne Challenge does not explicitly address the market economy in these terms, thereby necessitating some degree of interpretation for its analysis. Unlike the 2004 SSCEENR review, the audit and evaluation offers a vitiated ecological government, noting its sequence – information, incentives, regulation – but not elaborating in any detail as to what is intended by incentives or regulation (cf. DAEC 2006: 2, 3, 18, 20). Further, there is no discussion of the mechanisms of the market principles of competition in the audit and evaluation. Nevertheless, it does indicate that the One-Tonne Challenge was a part of “*the market transformation equation*” (DAEC 2006: 13).

Finally, by stimulating consumer demand for new and more energy efficient products, one is directly contributing to the market transformation that is called upon to effectively achieve Canada's short-term and longer-term climate change goals. Indeed, supporting the development and diffusion of those GHG-reducing consumer products involves a market demand component in addition to a market supply one. (DAEC 2006: 13, cf. 26)

Stimulating consumer demand through public education and outreach is only altering the conditions of the market, not the mechanisms or operations of the market economy itself; that is, it is not a challenge to the mechanism of competition, where economic freedom will determine the price of energy. From this, I would argue that the audit and evaluation of the One-Tonne Challenge represents the program as a neo-liberal practice of government pursuing ecological objectives. If the argument is accepted, this neo-liberal program, with its pursuit of market transformation and ecological objectives, does not constitute a significant rupture in the government of the state.

Indeed, as a result of its adhesion to neo-liberal market principles, the One-Tonne Challenge is very far from the practice of ecological government, which continues to remain in

abeyance. Indeed, if ecological government were put into practice, market transformation *might* occur instantaneously, as the operation and ends of the market would be planned and decided by the state – this would be antithetical to the arguments raised by the central theoreticians of neo-liberalism (cf. Foucault 2008[1979]: 139). The state could attempt to transform the conditions of the market economy but never its very operation. Through ecological government, the state would control one of the most important aspects of the market economy with the setting of ‘*price-signals*’, for what is among the most strategic economic commodities, energy. This exercise of state power is, of course, linked with the idea that price is in an inverse relationship with demand, where increases in one will result in decreases in the other. By factoring in the environmental in addition to the economic cost to produce energy, prices would increase, thereby triggering a decrease in energy demand i.e. a decrease in the overall consumption of energy. Further, the discourse of the archive has repeatedly emphasized the reciprocal relationship between energy consumption and greenhouse gas emissions, where increases in one correspond to increases in the other. When considered overall, if the ecological rationality of government were to become influential in the government of the state, the operation of the market economy would be fundamentally transformed.

This leads to the question of the pace of this ‘*market transformation*’. With the implementation of the ecological government of the state, as suggested above, this market transformation would occur rapidly, such that one might want to call it radical as its effects would perhaps be more noticeable on account of the pace of the transformation. Although the market transformation discussed in the audit and evaluation of the One-Tonne Challenge recognizes that regulation would “*motivate timely action*” (DAEC 2006: 20), the document does appear to endorse this radical market transformation noting that “*the issue of how the tools may*

stimulate, for example, the demand for new GHG-emission reducing products and hence contribute to the transformation of the Canadian economy also merits closer investigation” (DAEC 2006: 29-30). Nonetheless, it argues that “*a program like the OTC directly contributes to the market transformation*” (DAEC 2006: 2). This statement suggests that market transformation is already occurring, even without state regulation of price of energy. Such a view of market transformation is argued to be a liberal one, where ecological objectives are accepted in principle but are not urgent enough to warrant state intervention in the market economy, which, in any case, would be excessive given that the market economy is already undergoing transformation through information programs like the One-Tonne Challenge.

Diagnosing radical market transformation

In Canada, despite the election of a ‘Conservative government’ that privileges economic growth over sustainable development, one might still argue that this market transformation is still ongoing, as ecological programs of government percolate throughout society even without extensive state support. In regards to the government of the state under the Conservative regime, ecological principles of government largely remain in abeyance, although there are some residues of the One-Tonne Challenge program that continue to echo in what is now known as the ‘Education and engagement branch’ of Environment Canada.⁵¹ Nevertheless, it is highly

⁵¹ This is the name of the branch that the representative of Environment Canada had under her e-mail signature. In line with the practitioners of environmental education, she was very helpful in answering my requests, and provided me with an important document that was not accessible publicly on the internet, because the Government of Canada’s official climate change plan had been updated and replaced in 2005 (respectively GC 2002, 2005).

doubtful that ecological critique enjoys as much influence as it once had.⁵² Energy prices continue to be fixed by the mechanisms of competition instead of state regulation.

But what if the ecological rationality of government were to become ascendant over and above the market principles of neo-liberalism? I would like to conclude this chapter by reflecting on the desirability of the radical market transformation advanced by the ecological rationality of government. When carrying out this interpretation, I would like to also reflect on the effects that the programmatic deployment of an ecological rationality might have on the everyday practices of the consumer. So, this section will attempt to perform a specific critical task, one that involves interpreting the previous findings of analysis. This interpretation will consist of the utopian envisioning of ecological government, where its effectivity could be successfully evaluated through the technology of greenhouse gas inventory in order to determine whether consumers are increasing their energy efficiency and decreasing their personal emissions. Further, when carrying out this diagnostic interpretation, I will attempt to make ecological government appear less familiar. Following the suggestion of Dreyfus and Rabinow (1983: 256) concerning the dual-capacity of interpretative analytics, the kaladeoscope of analysis can be turned to make the object under analysis appear more or less familiar. This study has sought to render the ecological government intelligible through the analysis of the archive of the program; now, it will make it

⁵² I am referring to the election of Conservative Prime Minister Stephen Harper. He has yet to deny producing a document that continues to cause outrage among the practitioners of ecological government, who see it as a testament to his unwillingness to open a rational dialogue, one that accepts as its basic premise the incontrovertible scientific fact, that is, the reality of climate change and the consequent possibility for government, in the broadest sense of the term, to come to terms with mitigating the environmental harms produced by human activities and practices. To give an idea of the brevity of Harper's (Canadian Press 2007) understanding of climate change consider the following passage: "*It's based on tentative and contradictory scientific evidence about climate trends*". It will be interesting to see the position taken by the Government of Canada at the upcoming Copenhagen talks, particularly in terms of whether it accepts the scientific paradigm of climate change as many European and Asian nations do. If so, it would then be able to make positive contributions to these international discussions on climate change, where rational solutions might be put forward that reflect the principles, objectives, technologies, and techniques of ecological government.

less familiar so as to accentuate the dangers of this rationality of government, which has objectives that are so easy to accept and difficult to criticize: the mitigation of human-induced climate change through the reduction of anthropogenic greenhouse gas emissions.

This study has focused primarily on the articulation of an ecological rationality of government, with its distinctive principles, objectives, techniques, and technologies. Following the rigorous application of this rationality of government, the state would become the arbiter of energy-prices, ascertaining the real environmental costs of energy and fixing its price accordingly (cf. SSCEENR 2004a: 35). It would almost certainly continue to disseminate practical knowledges concerning how one should practice the energy-diet, consisting of the many small actions that one can do to improve energy-efficiency and lower emissions. But for those who continue to consume energy without adequate concern for their relation to climate change, they will ultimately bear a heavier cost, which is perhaps *just* given that “[o]verloading the environment with GHGs and other pollutant has **not** historically carried a direct cost to the offender” (SSCEENR 2004a: 10, emphasis added). These juridical notions aside, the imposition of higher energy costs by the state would elevate what economists refer to as the ‘cost of living’ for the entire population, but these are, after all, only economic costs. The ecological rationality of government would, of course, have ‘us’ always already consider the *environmental* costs, which are much more expansive but, at the same time, more difficult to properly calculate. Hence the need to further refine the technology of greenhouse gas inventory, so as to devise a way to routinely measure personal greenhouse gas emissions, such that it becomes economical i.e. convenient to administer and applicable to the population *en masse*. Finally, there is the political question of supplanting the emphasis on ‘voluntary action’, a term which has been taken in this study to be equivalent with the distinctively liberal principle of autonomy. Higher costs of

living through the state regulation of energy prices, the regular measurement of personal greenhouse gas emissions, and the erosion of the principle of autonomy – these are among the possible effects associated with the deployment of an ecological rationality of government as it has been articulated in the archive of the One-Tonne Challenge program. How these effects translate into the messy actualities of the everyday life of the consumer is beyond the scope of this discussion.

Nevertheless, if the articulation of an ecological rationality of government can appear so dangerous and uncertain in terms of its effects, it is partly on account of the continued ascendancy and influence of liberal principles and practices, especially with constitution of the subject of government as ‘consumer’. The model of the consumer that was repeated throughout the archive was that of *homo-economicus*, the rational economic actor. Consumers always want to pay the least possible cost. This economic interest can be regulated through the governmental technique of incentives, so that they can be made to purchase specific goods; it can also be manipulated by the governmental technique of regulation which would increase the cost of goods, such that the consumer will have to always be ‘wise’ or ‘efficient’ in its choices and practices. So, when articulating the ecological rationality of government, the documents of the archive posited *homo-economicus*, such that state price formation of energy appeared as a rational solution for the government of the consumer. If state price formation were to be implemented as a program of government, it would be necessary to continually monitor how greenhouse gas emissions are affected by the modulations in energy price, that is, whether higher prices were resulting in the desired gains in energy efficiency. Thus, the ecological technology of greenhouse gas inventory would help determine the ‘best’ price for energy, one that would reflect environmental and economic costs.

With the government of the consumer regularly reinforced by the ecological technology of greenhouse gas inventory, the market economy might eventually become ‘post-carbon’, to quote the title of a recent conference held by the European Commission (EC 2007). When consumers become so efficient that they no longer produce any emissions through their everyday life-conduct, the ecological rationality of government would no longer be utopian in its aims. Until then, the crucial question that has been raised in the course of this study and that must be addressed for *our* present is: how will the necessary market transformation come about? Liberal understandings maintain that market transformation is already occurring through programs like the One-Tonne Challenge, a public education and outreach program that provides consumers with the information that they need to voluntarily choose to become energy efficient.

However, ecological government would have this market transformation occur as quickly as possible given the existential threat that climate change poses to all life on the planet. If sustainable practices cannot be inculcated in the population through ecological education, radical market transformation through the state regulation of energy is an indispensable technique of government. To offset climate change, ecological government will perpetually strive to modify and regulate all those human activities that produce carbon emissions; in the process, however, ecological government could exhaust human existence of its capacity for breath.

Of course, it is very unlikely that liberal concerns for personal autonomy will simply give way. Further the actual exercise of the One-Tonne Challenge involved the application of neo-liberal principles of the market economy, even though it espoused ecological objectives and sought to extend the technology of greenhouse gas inventory to the levels of the individual and population. As mentioned above, this program was then terminated following the election of the current Conservative government. Still, even though the state is no longer codified into this

ecological program of government, this does not mean that the program no longer exists, for *the* government is not epicentre of all government. Programs to reduce personal greenhouse gas emissions by modifying practices to increase energy-efficiency or, to put it in slightly more ecological terminology, to decrease carbon-footprint persist, albeit through more informal channels i.e. on the internet, in the mass media, etc. There are so many practical guides on the energy-diet which endorse a more calculative consumer, one which takes into consideration, above all else, environmental costs. They generally maintain that sustainable consumption, the practice of which involves so many forms of conduct, will *help* mitigate climate change, but not alleviate it altogether. In order to do that, surely nothing more than the ascendance of ecological government is required to come to terms with the ‘challenge’ of climate change. Would the ascendance of this ecological government be accompanied by a response from the exponents and practitioners of liberal discourse and practice? At the very least, the outcome will be interesting, as it involves transformations in the way that government, the conduct of conduct, is systematically thought about and practiced.

The discussion has now reached a point where it becoming entirely too speculative to be of any enduring value as an experiment. In any event, hopefully the interpretation of ecological government has exposed its possible dangers. It may never come to this point, but the potential threat of climate change, if it is accepted as real, does not permit one to entirely exclude the possibility that the programs proposed by the practitioners of ecological government will never come to be put into practice. To this enduring danger, then, it is reassuring to recall that there is always the opportunity for resistance in every power relation, even in states of domination. When considered overall, the implementation of the One-Tonne Challenge certainly does not, at superficial level at least, merit much concern. But, in its failure, this program revealed the

agonism between ecological and liberal rationalities of government. I think that it is important to remain alert to the events that bear witness to this agnostic struggle, especially should the most threatening effects of climate change come to be realized. Indeed, if the community of the governed does not voluntarily restrict its energy consumption, “*then governments must be ready to implement other policies that will truly bring change*” (SSCEENR 2004a: 11). These may no longer be liberal policies and programs, in which event the practice of resistance may become a very pertinent and difficult issue for the governed.

CHAPTER 6: FINAL REFLECTIONS ON THE STUDY

National Socialism failed because we could not develop enough biological teaching – it was not possible to educate people sufficiently in biology. (Nazi doctor cited in Bernauer 1992: 274)

The ecological domain is the ultimate domain of being, with the most critical forms of life that the state must now produce, protect, and police in eliciting bio-power. (Luke 1996: 150)

Studies in governmentality attempt to perform a very specific critical task. Instead of advancing prescriptive arguments concerning their object of study, they offer empirical accounts of government programs, so as to identify and describe the rationalities and technologies that are assembled and deployed through this discursive practice. Following this empirical component, studies in governmentality attempt to diagnose and interpret the potential dangers that appear, even in the most innocuous of programs i.e. those that are advanced as apolitical or technical. In this way, their intellectual lineage with the “parrhesiast” Foucault (2001[1982]) becomes evident, as he once declared, during a debate with Noam Chomsky (and Foucault 2006[1971]), that, as opposed to envisioning a future utopian society, “the real political task in a society such as ours is to criticize the workings of institutions that appear to be both neutral and independent” (41).

The present study in governmentality took as its object only a specific instance, albeit a relatively formal and cogent one, of an increasingly widespread program of government, which aims to modify and regulate consumer conduct in relation to the problem of climate change. To be more specific, this study analyzed the One-Tonne Challenge; it was devised by the Government of Canada and officially implemented from March 2003 to June 2006. While there were several other programs of government elaborated in its ‘*climate change plans*’ (cf. GC 2000, 2002, 2005), the One-Tonne Challenge was particularly significant because it was the only

one that addressed the conduct of *each and all*, that is, the individual and population. Indeed, its “*ultimate strategic objective*” entailed the construction of a new “*societal norm*” for this population, namely, that of a “*low intensity greenhouse gas lifestyle*” (cf. DAEC 2006: 32-33; Appendix E). The purpose of this study was to analyze *how* this governmental objective, consumer conduct, and climate change became linked through this specific program, and then to play a certain ‘parrhesiastic game’ i.e. to interpret and diagnose the political and ethical dangers that could arise from the deployment of an ‘ecological’ rationality of government. Thus, this study in governmentality was an attempt to elaborate a rational critique of ecological government.

Through this undertaking, the study sought to sensitize ‘green’ criminologists to how theoretical objects of knowledge such as ‘environmental harm’ or the more common ‘climate change’, become implicated in totalizing state programs such as the One-Tonne Challenge. This program of government pursued utopian objectives and contained numerous technical and practical elements; in many ways, inflecting the positions and themes debated by the radical green and liberal ecological theoretical frameworks in green criminology. However, the One-Tonne Challenge was not entirely liberal or ecological. This study interpreted an ongoing ‘agonism’ between the liberal and ecological rationalities of government: the coalescence of their truth games articulated the rational solution, specifically consisting of the radical transformation of the market economy through the state regulation of energy. That is, as these rationalities came into increasing contact with one another throughout the documents of the archive, the liberal elements of the program were made problematic by ecological reason. The ecological critique maintains that the liberal emphasis on government through voluntary action is *necessary but insufficient* to address the problem of climate change: ecological government will fail unless it is

complemented by more interventionist government. As these programs are articulated by state officials and authorities, ecological political reason would eventually come to have the state regulate energy – one of the most important economic goods. To be sure, this is not currently among the competencies of the Canadian state. Under the Harper conservative government, ecological politics is no longer as popular as it once was. However, when carrying out the analysis of the One-Tonne Challenge, I have been attempted to interpret the operation of an ecological rationality of government, one which would become so elaborate as to address the relation of the state to the market economy. On account of the difficulty of modifying the conduct of each and all, this ecological rationality would seek to structure the market economy in ways that explicitly counter the interests of the population of consumers – thus it would bring about a state of domination through the government of this collective power relation. Of course, in contemporary Western societies, neo-liberal principles of the market remain ascendant in practice. But, one might wonder whether this specific interpretation of an ecological rationality of government might not be yet “another example of a discourse that emerged long before its practical effects” (Rabinow 1989: 197).

According to the principle of sustainable development, despite the relative absence of its most severe and pronounced physical and material effects, climate change must still be taken as a serious political (and almost as if by implication ethical) problem in the present: the very survival of the human species has been put into question by this ecological problem, some might say ‘*catastrophe*’. To counter the inertia of the ‘*massive global [political] system*’, this normative principle has ensured that this problem of the future is addressed in the present; climate change continues to necessitate government, so the Government of Canada and other nation-states will deliberate, plan, and program in relation to it (as in the upcoming Copenhagen talks, which are

supposed to produce an international climate change treaty that will be the successor to the Kyoto Protocol).

Main empirical findings

This study followed the historical trajectory of the problematization of climate change through the principle of sustainable development, as it was applied to the government of nation-states; they formally accepted climate change as a global political problem by becoming signatories to the UNFCCC in 1992. Moreover, nation-states were legally obligated to regularly fulfill the governmental tasks associated with this international treaty. One of these tasks consisted of regularly deploying the ecological technology of greenhouse gas inventory to annually measure national emissions (cf. Appendix C). This technology became particularly important with the ratification of the Kyoto Protocol, which set mandatory emission reduction targets for individual nation-states. The growing importance of this ecological technology and the obligation of nation-states to routinely deploy it would ensure that it became an institutional practice throughout most of the world – the 194 signatories of the UNFCCC constitute the vast majority of nation-states on the planet. This study investigated how the Government of Canada applied this technology of greenhouse gas inventory at a domestic level, where it quickly became apparent that this ecological technology has been extended in several ways, where it was first used to measure the different sectors of the economy such that individuated emission reduction targets could then be specified. With the One-Tonne Challenge, this ecological technology of government would be further extended to measure and average the greenhouse gas emissions of the Canadian and compile an inventory of the sources of personal emissions.

These personal sources, though diverse and heterogeneous, all produced greenhouse gas emissions on account of the consumption of energy. Through the practice of energy

conservation, they could be decreased. Ultimately, the documents of the One-Tonne Challenge consistently stressed the need to make consumers more ‘energy-efficient’, generally excluding any consideration of conservation. (Radical green criminologists would certainly be critical of this on account of its perpetuation of the capitalist mode of production). Such an interpretation aside, the One-Tonne Challenge was a public education program oriented towards national climate change objectives; it challenged the population to reduce their personal emissions by one-tonne, where this personal goal was to be attained through improved energy efficiency. With the analysis of the documents of the archive, two divergent rational interpretations concerning the functioning of this program of government emerged.

The liberal rationality of government would be restricted to viewing the One-Tonne Challenge in terms of public education and outreach outcomes, where a successful program increased consumer awareness about climate change and its relation to energy consumption. As consumers became educated about the relation of sustainability–efficiency, they would make ‘wise’ choices in their energy consuming practices. This is not only done in the interest of survival, but it is thought that consumers will want to make improvements in energy-efficiency, as it will reduce their financial costs. Liberal economic reasoning maintains that the government of the consumer will be effective on account of these two factors, where the latter is arguably the more abstract and contentious. That is, assuming consumers to be a variant of *homo-economicus*, where they will all pursue their rational economic interests is a tenuous foundation from which to then make statements concerning the gradual ‘*transition*’ of the market economy towards efficiency and sustainability.

The ecological rationality of government appeared to tacitly reject this assumption through its criticism of the One-Tonne Challenge. That is, ecological critique rejected the notion

that consumers will voluntarily commit to the energy-diet prescribed by this program in ecological education. According to the critique, although educating the public about climate change and energy consumption should remain within the competencies of the state, the practice of government cannot exclusively rely on voluntary action. It then advances the governmental techniques that will ensure that the Government of Canada achieves its ambitious emission reduction target as set out by the Kyoto Protocol. Put differently, this ecological critique argues that simply educating the population about ecological problems is not going to change consumer conduct for the better unless *more* is done.

To ensure that societies become sustainable by having the population adopt low-emissions lifestyles, ecological government must be applied to present and future needs. Foucault argued that the most pressing modern *political* need is ‘biopolitical’, where “power is situated and exercised at the level of life, the species, the race, and the large-scale phenomena of population” (Foucault 1990b[1976]: 137). Climate change is a biopolitical problem in that the survival of human and non-human species is put into question by its possible effects. If nation states cannot govern energy consumers, so as to bring about the necessary transformation in the market economy, greenhouse gas emissions will continue to dramatically rise in tandem with the Gross Domestic Product. The resulting effects of climate change are such that the very survival of human societies and the natural ecosystems on which they depend would both be threatened. If the solutions required to address this biopolitical problem are not implemented in the present, the future ability of the ‘*massive global [political] system*’ (WCED 1987: 176) to react to the devastating effects of climate change will be compromised. The collective responsibility of nation-states to govern this biopolitical problem in the ultimate domain of being, the ecological, will have proved to be a complete failure.

As this study has shown, the ecological rationality of government would have public education complemented with incentives and regulation, but these techniques of government are not distinctively ecological. Indeed, the technique of ‘*incentive*’ is premised on the subjectivation of the consumer; the liberal model of *homo-economicus* is used, such that the subject of government always chooses to pay minimum cost and state ‘*feebate*’ programs would be set according to the relative energy efficiency of a product. What is decidedly more in line with the ecological rationality of government is the notion of state regulation. As a political rationality, ecological government would have the state form the price of energy, ensuring that environmental costs are added to extant economic ones, so as to reflect the ‘*true price*’ of energy. Nonetheless, obtaining radical market transformation through the state regulation of energy prices is not necessarily an *autonomous* ecological program: the subject of government remained the consumer, but the assumptions common to *homo-economicus* were appealed to for entirely different reasons. That is, whereas *homo-economicus* could bring about a gradual economic transition as cost-conscious consumers modified and regulated their routine and everyday practices at home, at work, and on the road, ecological government would have the state regulate the consumption of energy through price formation, thereby *compelling* *homo-economicus* to practice energy-efficiency on account of the increased cost of energy.

Ethical and political stakes

While this ecological rationality might appear to pose a formidable challenge to liberal government, the One-Tonne Challenge was, in practice, a public education and outreach program that attempted to educate the population about the relation between sustainability–efficiency in the consumption of energy. In short, the state attempted to educate the population about an ecological problem and what can be done about it. As this study has shown, the commitment and

sacrifices entailed by the energy-diet are vast. If the prescriptive statements of this program were to be put into action, the subject of government would have to consciously modify and regulate a range of mundane and everyday practices tied to energy consumption. Governing oneself in relation to the ecological domain of being thus already involves a quite expansive range of practices (cf. Appendix D). The practice of freedom, even in the consumption of energy, is a complex question, but one that is increasingly addressed through the elaboration of systematic practical guides (cf. Goodall 2007; Greenpeace 2007).

Through the implementation of the One-Tonne Challenge, many Canadians did become more aware of the energy-diet and its relation to the problem of climate change (DAEC 2006: 13). When considered overall, the practice of an ‘ecological ethic’ is arguably becoming more pervasive in Canada and elsewhere, such that the energy-diet is now more widely practiced among the population. What is perhaps less clear is whether the government of the ecological domain of being is going to be among the competencies of the Canadian state. The archive of the One-Tonne Challenge indicated what the political government of this ecological domain might entail. But constituting the subject of government as consumer represents the inability of ecological reason to completely detach itself from liberal economic notions and assumptions. Added to this, the technology of greenhouse gas inventory cannot be routinely and economically deployed to measure the performance of the consumer in terms of their personal emission reductions.

The persistence of liberal elements and the lack of technological refinement proved to be enormous obstacles for the articulation of an *autonomous* ecological rationality of government. The proponents of ecological government who would deem the One-Tonne Challenge to be a failure, almost immediately following its formal implementation. It is ironic that the declarations

of program failure would provide the basis for their proposals to increase governmental action and intervention. Studies in governmentality have noted the recurrent use of this ‘trump card’, where the intersection between utopian objectives of conduct change and the practical failure to construct the desired ‘social norms’ serves to reinforce the exercise of government. In the case of this study, it is the failure of the population to obtain an ecological education that causes its practitioners to play this ‘trump card’ in the games of truth, specifically in terms of abandoning the liberal emphasis on voluntary action.

There are definitely political dangers to be attentive to here. First, if the practitioners of ecological government are correct and governing through voluntary action is insufficient to address the problem of climate change, then the state will have failed to properly administer the conditions of life. Second, even if we concede that its practitioners are correct about the failure of governing through voluntary action, ecological government would attempt to bring about a radical market transformation through state formation of energy prices, where this ongoing regulatory intervention would probably have considerable effects upon everyday life, the realization of which cannot be known in advance. What can be known, however, is that a state of domination would result from the implementation of this ecological program. To be sure, this might be a productive state of domination, one that induces the individual and the population to modify their energy consumption practices such that “*a low intensity GHG emission lifestyle becomes a societal norm for Canadians*” (DAEC 2006: 36). However utopian this objective might appear to be, it is one that must always be pursued; otherwise government will not even be able to meet the needs of the present let alone those of the future.

When considered overall, the programmatic documents of the One-Tonne Challenge evince the elaboration and operation of what has been argued to be an emergent ecological

rationality of government. Without directly referring to it, Rose (2008[1996]) correctly pointed out that “[t]he desire to bring the future into the present, so as to manage it better, has now assumed a new scale both geographically and temporally, as attempts to manage the planet and its sustainability into the distant future are coming at last to be taken seriously, albeit reluctantly” (216). If this ecological rationality is going to become even more coherent, systematic, organized, influential, and persuasive in its attempts to structure and order the conduct of each and all, innocuous programs such as the One-Tonne Challenge remain an important object of study through which to critically diagnose the potential dangers that accompany the exercise of ecological government. While its objectives are noble, studies in governmentality must interpret how this rationality and the technologies to which it is linked operate throughout government programs.

This study in governmentality has sought to play a certain ‘parrhesiastic game’ with the ecological rationality of government, discerning its statements of truth and error and how its truth game comes into contact with others. It has sought to “know the truth” about ecological government in order “to convey such truth to others” (Foucault 2001[1982]: 15). Beyond this function of telling the truth, it has attempted to avoid the blackmail of ‘choosing sides’. It has sought to make our government in relation to the problem of climate change difficult for thought, so that we—the community of the governed—can ask critical questions of those who would attempt to govern us according to the noble principles and objectives of ecological government.

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APPENDIX A

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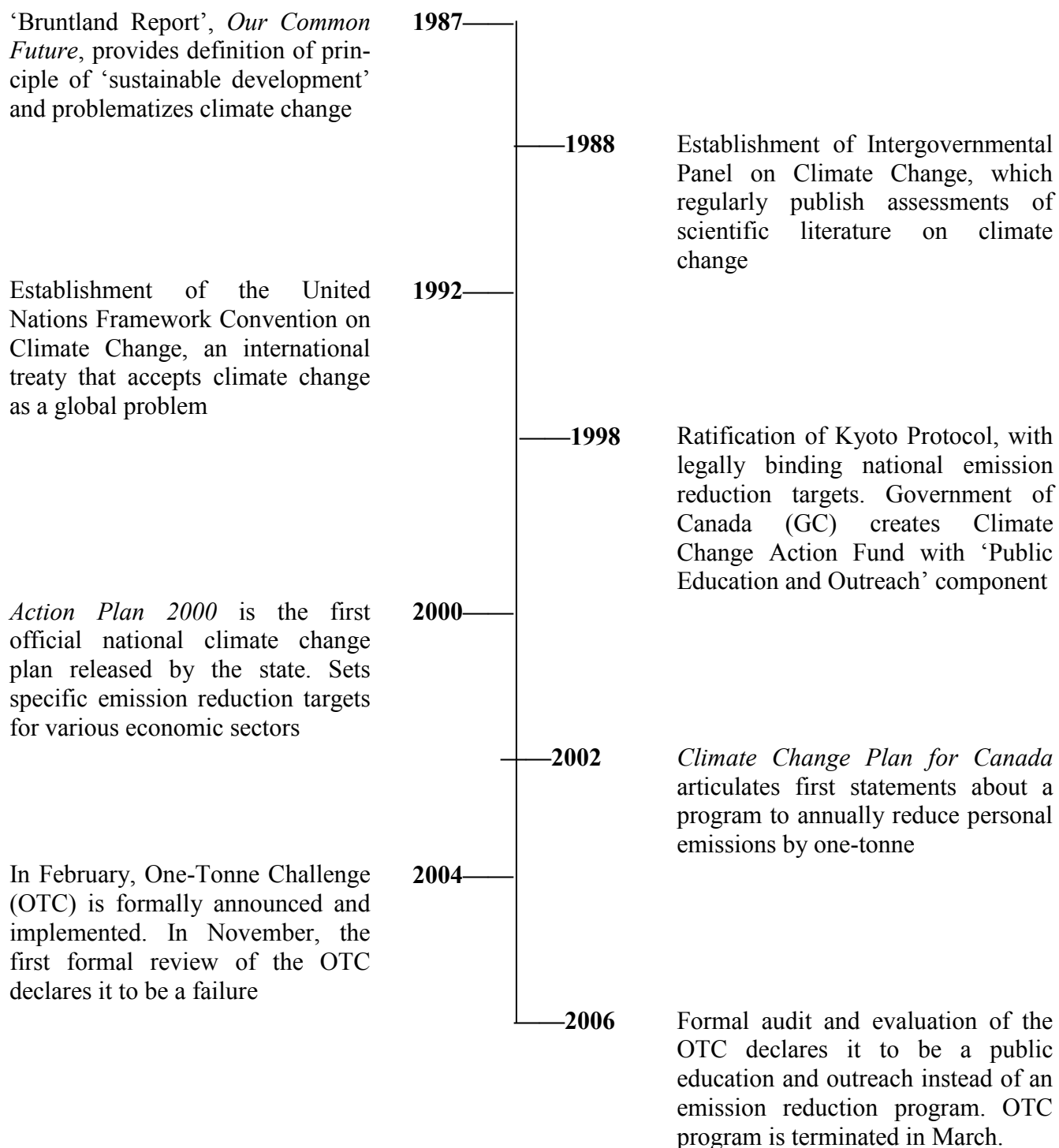
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APPENDIX B

Chronology of historical events and documents in the archive



APPENDIX C

Greenhouse gas inventory of Canada 1990-1999⁵³

	1990	1994	1995	1996	1997	1998	1999	% change 90-99
CO ₂ Reference Approach (Mt of CO ₂)	421.34	440.61	452.39	463.96	479.93	487.95	489.20	16.1
CO ₂ Sectoral Approach (Mt of CO ₂)	430.21	450.01	461.20	476.75	493.07	496.61	503.55	17.0
GDP (billion 1995 US\$ using exch. Rates)	531.62	563.79	579.23	588.09	613.90	634.17	663.30	24.8
GDP (billion 1995 US\$ using PPPs)	616.98	654.31	672.24	682.52	712.48	736.00	769.80	24.8
Population (millions)	27.70	29.04	29.35	29.67	29.99	30.25	30.49	10.1
CO ₂ / GDP (kg CO ₂ per 1995 US\$)	0.79	0.78	0.78	0.79	0.78	0.77	0.74	-6.3
CO ₂ / GDP (kg CO ₂ per 1995 US\$ PPP)	0.68	0.67	0.67	0.68	0.67	0.66	0.64	-5.9
CO ₂ / Population (t CO ₂ per capita)	15.21	15.17	15.41	15.64	16.00	16.13	16.04	5.5

⁵³ Adapted from International Energy Agency (2001: II.183).

APPENDIX D

Actions to be taken at home prescribed by the One-Tonne Challenge

<i>Aspect of the home</i>	<i>Specific action to be taken</i>	<i>Emission reduction Level</i>
Heating your space (GC 2004: 11)	– Install one of today’s energy efficient furnaces.	A
	–Use caulking and weather-stripping to seal air leaks.	A
	–Look for the ENERGY STAR® label on windows and sliding glass doors	A
	–Install storm windows	A
	–Replace exterior doors	A
	–Keep your furnace well maintained.	C
	–Seal and insulate warm-air ducts.	C
	–Upgrade your insulation in walls, the basement and attic.	A
	–Lower your thermostat.	A
	–Keep window curtain open during the day in winter.	C
Home cooling (GC 2004: 13)	–Remove window air conditioners for the winter.	C
	–Shut off the pilot light of your natural gas fireplace during summer months.	C
	–Install a ceiling fan.	C
	–Use fans as your first line of defence against summer heat.	B
	–Set your air conditioner at 24°C and raise it when you go out.	B
	–Clean the air conditioner’s filter every month.	C
	–Turn off all sources of heat, such as lights, appliances, and electrical equipment, when not in use.	C
In the kitchen (GC 2004: 14)	–Maintain your refrigerator and freezer for better energy use.	B
		B
	–Look for an ENERGY-STAR® qualified refrigerator.	B
	–Unplug that second refrigerator or freezer.	C
	–Select the dishwasher’s no-heat or air-drying cycle.	C
In the laundry room (GC 2004: 15)	–Increase the efficiency of your refrigerator and freezer.	C
	–Rinse in cold water and wash in warm.	B
	–Avoid over-drying clothes.	C
Lighting (GC 2004:16)	–Install outdoor automatic timers.	C
	–Use more-efficient light bulbs.	B

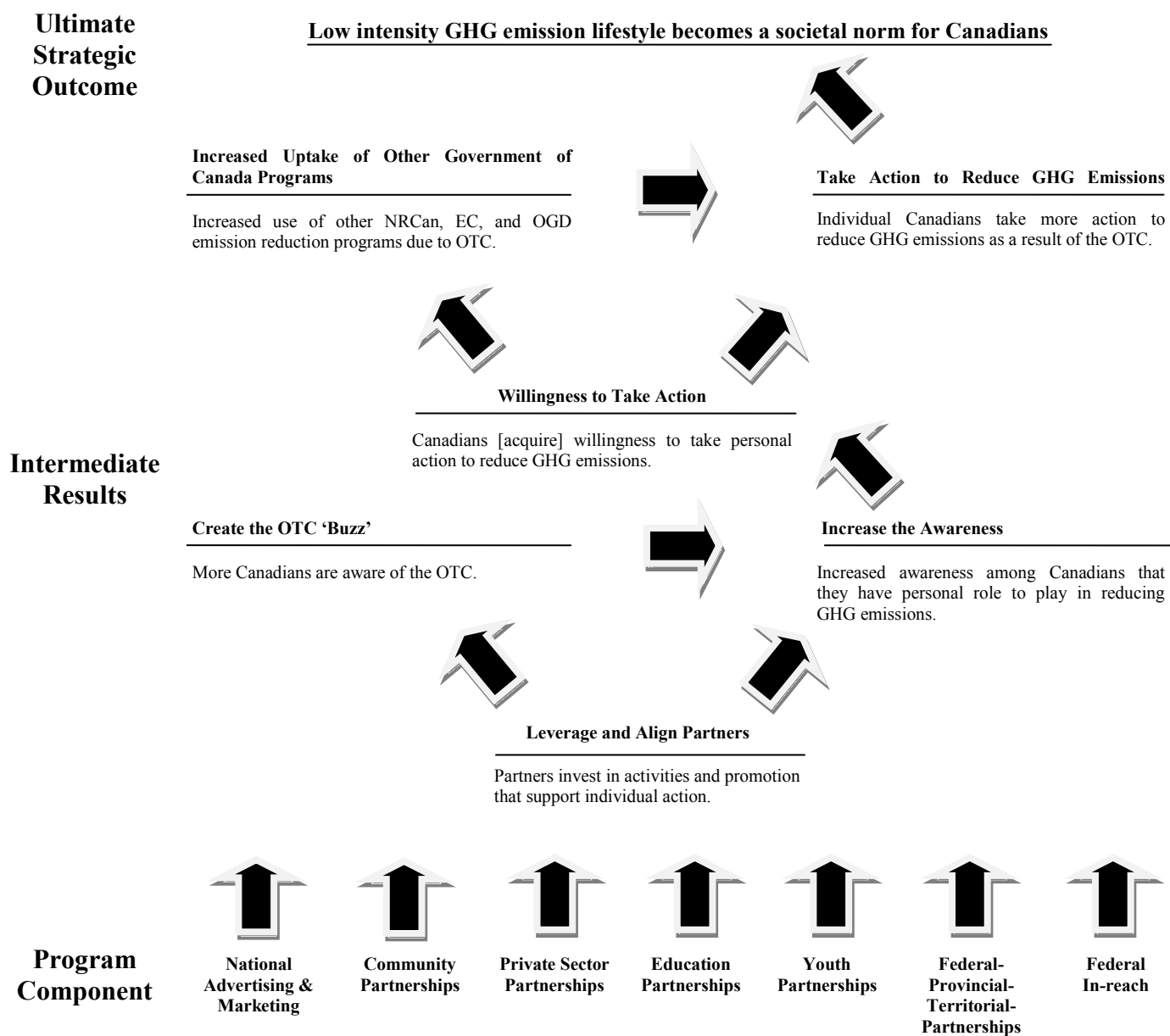
APPENDIX D (continued)

Actions to be taken at home prescribed by the One-Tonne Challenge

<i>Aspect of the home</i>	<i>Specific action to be taken</i>	<i>Emission reduction Level</i>
Home office (GC 2004: 17)	–Look on the box for ENERGY-STAR® qualified equipment.	C
	–Use as little paper as possible.	C
	–Ensure your computer system is set up to use its energy-saver option.	C
	–Turn off lights and equipment when a work area isn't being used.	C
	–If you are buying a laser printer, look for energy-saver features.	C
	–Buy a monitor that is the right size for your needs.	C
Outside maintenance (GC 2004: 18)	–Water your garden or lawn early in the morning after the dew has dried, to reduce losses due to evaporation.	C
	–Capture rainwater for your garden.	C
	–Limit your use of gas-powered lawn mowers.	C
	–Practice 'grass cycling'	B
	–Avoid using chemical pesticides or fertilizers.	C
	–Plant trees.	C
Water heating and use (GC 2004: 19)	–Maintain your pool efficiently.	C
	–Avoid running the tap while shaving, brushing your teeth, or doing the dishes.	C
	–Go for a high-efficiency water heater unit.	B
	–Take a quick shower instead of a bath.	C
	–Install a low-flow shower-head with a shut-off lever.	B
	–Insulate water pipes to reduce heat loss.	C
Waste and recycling (GC 2004: 21)	–Turn off your cottage's water heater.	C
	–Recycle all recyclable materials.	B
	–Pay attention to goods and packaging.	C
	–Compost your organic kitchen waste.	B

APPENDIX E

‘Results Model for the One-Tonne Challenge’⁵⁴



⁵⁴ This table has been reproduced from DAEC (2006: 36).