

**ADAPTATION OR INNOVATION?
THE EFFECTIVENESS OF GLOBAL ENVIRONMENTAL
REGIMES**

by

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ABSTRACT

The growing importance of the discourse on climate change raises some interesting questions regarding the creation and evaluation of international regimes. When is a regime effective? Through analyzing two competing approaches to evaluating regimes, the instrumentalists and critical theorists, this project shows the deficiencies in the current discourse. Instrumentalists focus on observable means-ends standards of efficiency, while critical theorists ask fundamental questions regarding intersubjectivity. Influenced by both of these schools of thought, this project develops an analytical framework for evaluating regimes that differentiates between different *sources/levels* of change (regulative, normative, and cognitive) and *types* of change (adaptation and innovation). When this framework is applied to the cases of the Ozone regime and the Climate Change regime, interesting counter-intuitive findings emerge that offer alternative evaluative criteria for considering the effectiveness of global environmental regimes.

Keywords: Evaluative Criteria; Instrumentalism; Critical Theory; Ozone Depletion; Climate Change; Innovation; Adaptation

Subject Terms: Environmental Politics; Regime Theory; Regime Evaluation

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LIST OF ABBREVIATIONS

CDM	Clean Development Mechanism
CFC	Chlorofluorocarbons
COP	Conference of the Parties
EEZ	Exclusive Economic Zone
EU	European Union
GHG	Green House Gas
HCFC	Hydrochlorofluorocarbons
IPCC	International Panel on Climate Change
JI	Joint Implementation
MOP	Meeting of the Parties
NGO	Non-Governmental Organization
UNCED	United Nations Conference on the Environment and Development
UNCHE	United Nations Conference on the Human Environment
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organization

CHAPTER 1: INTRODUCTION

1.1 A Problem to be Considered

The environment has become a major issue in politics and policy making across the globe. Heightened awareness among politicians, industries, and civil society, has led to an understanding that policies are needed to address the realities of environmental degradation. Although environmental regimes have been around since the 1970's, they are becoming more visible to the average person: climate change is a growing challenge facing the planet. The solutions and responses to this particular regime will likely affect *all* environmental regimes, as we are learning that everything is intimately connected. However, how does one know when a regime has been effective or successful? What tools do we have to evaluate the regimes and what outcomes can be attributed to them? When we say a regime is effective, is that actually the case? The answer to this question depends on what is defined as effectiveness and the methodology used to determine this.

In international environmental politics there appears to be a deficiency concerning the criteria used to evaluate regime effectiveness. While there are two streams of focus in regime theory, one concerning creation and the other focusing on outcomes, it is evident in both that there is an overwhelming tendency to focus on instrumentalist accounts. In this view the criteria for evaluating effectiveness is biased towards concrete measures of regimes. Some of these include considerations of procedures, rules and decisions, monitoring

and enforcement mechanisms, and other means-ends institutional responses. This is inadequate when evaluating effectiveness because some regimes are able to fair well in evaluation even when no fundamental changes have occurred. Furthermore, targets need not necessarily be met for a regime to be considered effective. Rather the ability of states to cooperate and form regimes is often seen as success in itself. For the purposes of this paper, effectiveness is re-defined by the level and type of change that is influenced by regimes. What is also concerning in the present evaluation of regimes, is the uncritical implementation of mechanisms and solutions that can often contribute to the problem rather than assisting in the solution.

In discussing these issues this research project will address three questions. First, what specifically informs the current criteria for evaluating regime effectiveness and what are the strengths and weaknesses? Second, how is effectiveness defined, and to what extent does this conception inform the criteria? Third, can these criteria be improved, and once this is determined, how can the new criteria be measured and implemented?

The goal of this project is to explore a different way of evaluating environmental regimes by responding to each of the questions posed above. Specifically there are two objectives. The first is to evaluate existing approaches to regime effectiveness. The second is to develop new criteria and apply it to two case studies: the ozone regime and the climate change regime. This application is intended to be a preliminary trial of the new criteria, to illustrate how they will work and produce results. By using an analytical framework that assesses

different levels and types of institutional change, counter-intuitive findings emerge that demonstrate the need for more critical evaluative criteria, and the value lost when regime effectiveness is viewed through a narrow focus on instrumentalism. Furthering one's understanding of regimes requires the exploration of a multiplicity of perspectives. In advocating a more holistic approach to the study of regime effectiveness, I hope to show the internal inconsistencies that exist in the use of instrumentalist criteria, in which a regime is deemed effective without resulting in any real empirical changes. I propose additions to current criteria that include a common-sense dimension to determine unintended and intended outcomes that may affect citizens, local economies, and cultural practices, as well as questions about the level and types of change associated with a particular regime.

1.2 Putting the Issue in Context

Environmental politics is a hot topic in which it is both popular and profitable to be environmentally conscientious. It is important that this new wave of interest not be a passing trend and contributions by academia can help foster greater understanding of the issues. Pivotal agreements lay the foundations for the way we conceive of the environment, particularly in terms of rights and responsibilities.

A milestone in the organized adoption of environmental issues came in 1972 with the United Nations Conference on the Human Environment (UNCHE) in Stockholm. According to Busumtwi-Sam, "the UNCHE served to institutionalize

the necessity of explicit management to deal with the problem of environmental degradation.”¹ This conference produced a number of important and influential declarations and principles, specifically, the 26 principles of the Stockholm Declaration. Principle 21 indicates that states have the, “sovereign right to exploit their own resources ...” and, “the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment ...”² What has been inferred from this are competing rights and responsibilities. On the one hand, states as sovereign actors have the right to do as they wish with the natural resources within their jurisdiction. On the other, sovereign states are also expected to ensure that their national activities do not infringe on the environmental health of neighbouring states. This is inherently problematic because of the transboundary nature of most environmental degradation, such as ozone depletion or climate change.

Also of great importance is Principle 1, which asserts the existence of a universal responsibility to, “... protect and improve the environment for present and future generations.”³ This inter-generational normative principle motivates and justifies subsequent environmental proposals and agreements. Some of these include the Vienna Convention for Protection of the Ozone Layer in 1985, the Rio Declaration on the Environment and Development (UNCED) in 1992, and

¹ James Busumtwi-Sam. “International Cooperation in Sustainable Development” in *Regional Sustainable Development Reviews*, eds. Lawrence Nkemdrin and D. Drapper, 7 (Oxford: Eolss Publishers, 2002).

² The United Nations “Declaration of the United Nations Conference on the Human Environment” (1972). Stockholm. Available: www.un.org

³ Ibid.

the United Nations Framework Convention on Climate change (UNFCCC), which was also born out of the Rio conference.

There appears to exist an implicit consensus among regime scholars and policy analysts that the Kyoto Protocol has been particularly ineffective compared to the Montreal Protocol. James Gustave Speth and Peter M. Haas in *Global Environmental Governance* present a clear example of this position. Titled as the “little regime that could”, the ozone regime based on the Montreal Protocol is held as the prime example of how effective regimes are to operate, and as the standard for success⁴. Following an instrumentalist approach, the ozone regime effectively met all of the means-ends requirements necessary to result in concrete Chlorofluorocarbon (CFC) reductions. By contrast, when considering whether climate change will be the follow-up success in international regimes, Speth and Haas are pessimistic. While they do recognize the large impact that this regime will have, when it comes to concrete measurable goals and cooperation between states, Kyoto and the climate change regime in general is not expected to be a success⁵.

In focusing on these two examples of environmental regimes (Ozone and Climate Change based on the Kyoto Protocol) I will evaluate their effectiveness using both the traditional criteria and the new criteria that I am proposing. Few surprises are expected using the current criteria. However, when these regimes are evaluated using the new criteria some interesting counter-intuitive findings result. As alluded to in Speth and Haas, and echoed by others, the Kyoto

⁴ James Gustave Speth and Peter M. Haas, *Global Environmental Governance* (Washington, Covelo, London: Island Press. 2006), 88.

⁵ *Ibid.* 105

Protocol and climate change regime as a whole has been very much built on the 'successful' foundations of the ozone regime. However, this one-size-fits-all approach to addressing environmental regimes proves to be inadequate and ineffective.

Both the Kyoto Protocol and the Montreal Protocol illustrate and encapsulate serious problems in the way environmental issues are addressed and the steps taken to resolve them. As stated previously, this project is an exploratory exercise. As such, a number of intersecting and competing theoretical and conceptual issues are raised. As demonstrated in the literature review, an instrumentalist approach provides some useful insights but also suffers from limitations. This perspective, which represents the traditional mainstream (liberal and realist) approaches to evaluating and understanding international regimes, is the hegemonic, dominant, and generally unquestioned approach. To balance this perspective and call into question many of its foundational assumptions, I also look to approaches from critical theory and constructivism. In my attempt to survey these perspectives and what they have to offer, I do not wish to suggest in any way that some are more valuable than others. To repeat, one of the foundational assumptions motivating this project is that a fuller understanding is best achieved through a multiplicity of views. No perspective is complete on its own, but in conjunction with one another, they offer interesting insights.

Because each of these perspectives focus their inquiry on different areas and ask different types of questions, they all approach *regimes* with a different

conception and interpretation. This can be of great importance as instrumentalists view regimes as a mode to accomplish particular goals, a means-ends approach. By contrast, a constructivist perspective might suggest that a regime may be a forum for dialogue among intersubjective actors. Such conceptions will shape the meaning of effectiveness and by extension influence the criteria of evaluation. This raises issues regarding institutionalization. Standardization is often a goal for reasons of efficiency and reliability. To privilege one mode of evaluation over another can often result in a form of ignorance regarding less obvious consequences of particular regimes when implemented at the domestic level.

1.3 A Thesis of Pragmatism and Synthesis

Based on the dialogue that is taking place between the two ends of the regime theory spectrum, I argue that a middle ground must be forged. While the instrumentalists are far too narrow in focus, they do present a clear methodology and epistemology from which to work. The critical theorists by comparison dare to ask the difficult questions and bring environmental politics back to its grassroots beginnings. While they lack the organization and foundations of the instrumentalists, they make up for these short-comings though continually problematizing that which is assumed to be obvious and remain sensitive and inclusive to intersubjective conceptions of the issues.

I propose to build upon the instrumentalist criteria by adding two additional questions for consideration of regime effectiveness that are influenced by critical

theory. The first is to ask what both the intended and unintended outcomes were that resulted directly or indirectly from regime implementation. As will be demonstrated through the case studies offered of the ozone regime and the climate change regime, unintended outcomes often result from a regime. These unintended outcomes can be either positive or negative, and are important to take account of because despite successful and effective institutionalization of an environmental problem, the particular methods or policies implemented may result in counterproductive outcomes. This is the case in the flexibility mechanisms of the Kyoto Protocol, and will be discussed at length in the third chapter.

The second criterion is to ask whether fundamental changes took place that could be attributed to cognitive level change. Busumtwi-Sam introduces a hierarchy of levels of change⁶, they are as follows: The most elementary level is *regulative*. Here what changes are policies and procedures, regulation, monitoring, and all things associated with the instrumentalist evaluative criteria. The second level is *normative*. At this level one is concerned with ethical and moral questions concerning what ought to be and responsibility. It is also at this level that one is concerned with appropriate responses based on rules, identities, and specific situations. The third and most complex level is *cognitive*. It is at this level that changes in understanding, knowledge, and fundamental conceptions take place. Here issue definitions may alter, along with goals and general awareness. I argue that it is at the cognitive level that real *innovative change* is

⁶James Busumtwi-Sam. *International Cooperation in Sustainable Development*, 7

most likely to take place, in which individuals, business, and governments move beyond *adaptation* and reconceptualize the initial environmental problem. I suggest that this may be one reason why the climate change regime is experiencing such slow progress compared to the ozone regime. In the ozone regime, change took place primarily at the regulative and normative levels, but to address fully issues of climate change cognitive change must also take place. Because of this deepest level of change, normative and regulative alterations will follow that reinforce and support the cognitive shift. With ozone depletion consensus was reached between governments and industries that something ought to be done to minimize ozone depletion, and adaptive regulative changes resulted. By contrast, it appears that to address issues of climate change a shift in thinking must take place that realizes the foundational issue of sustainable development and encourages innovation, not merely a reduction in greenhouse gas emissions.

For the purposes of this paper, 'success' corresponds to level of change: the deeper the level of change the greater the probability of success. I do not want to suggest, however, that adaptation is necessarily inferior to innovation. The type of change does not necessarily factor into the level of success that a regime is able to realize. While it is the case that for the particular case studies used here innovation does lead to greater success, this is not to claim that the same would hold true to other cases within or outside of environmental regimes.

The outcome variable that this research project seeks to explore and understand is the effectiveness of environmental regimes. Effectiveness will be

measured by assessing the extent to which adaptive and innovative change takes place. The explanatory variable is the level at which change takes place: regulative, normative, or cognitive. The types of change (adaptive versus innovative) I argue largely reflect the level of change. Adaptive change takes place when a substitution or alteration is made to address an issue. For instance, this is seen in the ozone regime with the switch from CFCs to Hydrochlorofluorocarbons (HCFCs). Innovative change alters the way an issue is approached. Innovation implies a fundamental transformation in the way things are done. An example here can be seen through climate change and a need for greater sustainable practices. For instance, in the 1990's Canadian municipalities created recycling programs to compliment trash removal. This required individuals to re-conceive of what they defined as garbage.

As stated earlier, it is when an issue facilitates a cognitive alteration and understanding that innovative change takes place. To change one's understanding and conception of what *is* and how things are done is more likely to result in innovative changes. It is also highly likely that changes at the cognitive level will also produce normative and regulative changes. Such deep alterations are often needed because the new conception can become incommensurable with past approaches. Changes at the regulative level, by contrast, need not be associated with cognitive changes, but may be triggered by a change at the normative level. Here, because no fundamental cognitive shift takes place, one is primarily concerned with motivating appropriate behaviour using existing frameworks, structures, policies and procedures. Adaptation,

rather than innovation is thus the more likely outcome. In order to motivate fundamental change in definitions and understanding a cognitive alteration of consciousness needs to take place. The level of change can be observed through civil, market, and industry trends in action and policy initiation.

I argue that this approach to evaluative criteria offers insights that others do not because it is more holistic and rigorous. It combines the dominant instrumentalist considerations with the intersubjective (normative and cognitive) considerations offered through critical theory. In the end I believe that I offer a common-sense approach to evaluating the real outcomes and effectiveness of regimes by taking account of the type and sources of change that takes place in addition to focusing on all outcomes that can be attributed to a regime, both intended and unintended. This will contribute to our knowledge of the far-reaching implications of international regimes, as well as suggest ways to influence the deepest level of change, which is needed for combating climate change.

1.4 The Method: A Way to Get There

This project uses a variety of methodological approaches. Qualitative analysis is the primary method used to evaluate and explore the issues raised in the project and develop new criteria. Case studies are also presented to illustrate the history of international environmental regimes and demonstrate the value added of the new evaluative criteria. They will be used both diachronically and synchronically. The use of case studies is also valuable in offering a concrete

point of reference for the issues raised and examples offered. These cases again are the ozone regime that resulted from Montreal Protocol, and climate change with the Kyoto Protocol. The Kyoto Protocol, while ratified, will fall far short of the projected goals, and discussions are already in progress for the creation of its successor. The ozone regime by contrast is hailed in environmental politics and regime theory as being one of the greatest successes. As stated previously, it will be shown that while it is deemed effective in the traditional instrumentalist view, in the enhanced criteria it becomes more problematic.

The empirical indicators used to determine or detect when change has taken place at a cognitive level will be determined through observing three important constituencies: the government, industries, and civil society. Governments are important because not only are they the signatories to international agreements they are also the ultimate regulator of industry and civil society. Government can choose what substances are legal and illegal, as well as the kinds of activities to promote and discourage. For instance, there have been on-going campaigns in various Canadian regions to limit the idle time of a motorized vehicle. Industries are another pivotal constituency. As a measure of consumer preferences and often one of the main contributors to environmental problems, industries play an important role in either the problem or solution. The last constituency is civil society. This can be used to refer to non-governmental organizations (NGOs), consumers, or individual citizens. This is important to monitor and examine as it can represent either the source of motivation for industrial or governmental change or the target group to influence.

I believe that a demonstrated convergence of the three groups is evidence for normative and cognitive change. This convergence will take place through an unintended synchronizing of cognitive and/or normative motivations and understandings. The best way to obtain evidence of this convergence, or to monitor the possibility of convergence at the industry or governmental level is through an in depth exploration and analysis of their publications, media releases, and action initiations. At the civil level the popularity of grassroots organizations and consumer preferences should be strong indicators of cognitive and/or normative change. These can be identified through popular media sources, such as local newspapers or trends in television shows, and data available through government and industry research that identifies preferences and trends.

An immediately obvious limitation in inferring change in relation to climate issues is the outside variable of rising energy costs. It is difficult to differentiate between motivations to save money, and motivations based on a cognitive shift that focuses on the environment. One way to possibly alleviate this is to argue that because they do in fact result in the same outcome, lessening one's 'carbon footprint', and the measures taken to do so require fundamental changes that we need not make this distinction. While I sense that people are primarily motivated by financial costs, I do get the sense that the environment is a close second. Civil society, industry and the government are obtaining a better understanding of the extent to which our current living standards are unsustainable.

1.5 Chapter Outline: What is to Come

This project consists of three chapters in addition to this introductory chapter. Chapter two provides a detailed literature review of instrumentalist theorists and critical theorists in an effort to understand what informs their criteria for evaluating environmental regimes. The chapter then proceeds to develop new evaluative criteria combining elements of both the instrumentalist and critical perspectives, and a framework for evaluating levels and types of change in global environmental regimes. Chapter three applies this framework and hybrid criteria to the analysis of the ozone and climate change regimes. .This serves to highlight the benefits of the hybrid criteria and the limitations of dominant instrumentalist approaches. The final chapter is a brief conclusion that summarizes the arguments presented in this project and offers some reflections on the future of the climate change regime.

CHAPTER 2: COMPETING APPROACHES:

A LITERATURE REVIEW

2.1 The Instrumentalist Perspective

Developing criteria for success or effectiveness is an important aspect of international environmental politics. A systematic and generally accepted set of questions or areas for analysis allows scholars to consider what works well and areas for improvement in environmental institutions. In outlining a framework for analysis, Jacobson and Kay offer a comprehensive list of criteria by which to measure effectiveness, consisting of five areas for evaluation. These include: 1) Whether the procedural and substantive goals were met; 2) Whether there is general satisfaction among participants that the goals were accomplished; 3) Whether the attitude of observers is positive or negative toward the results; 4) How the regime in question compares in effectiveness to others of similar nature; 5) The institutional impact on the intended subject⁷. Clearly the focus is on the details and functioning of the regime in question.

While narrow in focus, it does ask important questions regarding the structure and functioning of regimes. What is interesting in these criteria is the subjective component that considers the perceived effectiveness by both those bound by the agreement and those outside the regime. While this can be useful when considering which components ought to be replicated in future regimes,

⁷ David A. Kay and Harold K. Jacobson. *Environmental Protection: The International Dimension*, (USA: Allanel, Osmun Publishers, 1983), 18.

subjective opinions do not contribute to the empirical impact on the environmental concern targeted. Jacobson and Kay through their criteria are preoccupied with the functioning of the regime, neglecting a critical analysis of whether the problem was adequately addressed and alleviated.

Arild Underdal equates regime effectiveness with substantive problem-solving capabilities. Underdal develops criteria for measuring effectiveness based on optimistic and positively focused questions. Effectiveness is conceived in terms of net benefits resulting from the regime. Questions posed to determine this are: What are the consequences of the regime itself (to what extent was the problem solved)? What are the political and monetary costs and positive side effects of the regime? And how strongly do actors respond to incentives for compliance?⁸ Immediately problematic with this set of criteria is the framing of the questions themselves. By focusing on the instrumental outcomes of a regime, peripheral consequences, whether negative or positive, are not considered. These questions alone do not provide sufficient information to determine the effectiveness of a regime. Furthermore, implicit in the framing of Underdal's criteria is the consideration of exclusively intended or foreseeable consequences. To dismiss any discussion of unintended or unforeseen consequences results in one-sided criteria. When discussing positive side effects, Underdal provides an example of large-scale learning⁹. To be more specific this refers to the further development of epistemic communities, or knowledge based constituencies.

⁸ Arild Underdal. 'Measuring and Explaining Regime Effectiveness' in *Complex Cooperation*. ed. Helge Hveem, 94. (Oslo: Scandinavian University Press, 1994)

⁹ Ibid. 95

Based on these questions, Underdal attempts to develop a numerical scale on which regimes can be scored for their effectiveness based on relative improvements¹⁰. The fundamental problem with this particular scale is that it involves the use of counterfactuals. To assess 'relative improvements' one must undertake a comparative analysis. In this particular case the results of a regime are compared to what the environmental situation would have been without the regime, and then what the maximum possibility for effectiveness could be. While there may be some philosophical value to 'alternative universe' thought experiments, in the issue area of environmental regimes and their effectiveness this particular method offers no objective measure for the effectiveness or success of a regime.

Oran Young defines effectiveness as, "a measure of the extent to which these arrangements succeed in solving the problems that led to their formation."¹¹ While Young admits that this approach does suffer from some limitations, these limitations are methodological in so far as they are concerned with proving the causal relationship between a regime and political changes. To consider effectiveness of a regime is to analyze and consider the performance of a regime. With such a narrow focus on the components and results of a particular regime, it becomes possible for a regime to be deemed effective in cases where the empirical environmental problem is not alleviated¹². Conversely, in terms of effectiveness, in cases where the empirical results of the problem are in

¹⁰ Ibid. 103

¹¹ Young, Oran R. *Governance in World Affairs* (Ithaca and London: Cornell University Press, 1999), 109.

¹² Ibid. 110

question, there is critical scrutiny of the extent to which the regime itself was integral to this outcome. Situations of significant change can be deemed ineffective.

Acknowledging these difficulties, Young includes behavioural change in the scope of criteria for measuring effectiveness. Here the subject of change refers to any group of actors or individuals at which the regime is aimed be it corporations, governments, citizens or NGOs.¹³ Young regards behavioural change as significant when it is a direct result of the regime in place. By focusing on behaviour one is able to analyze the sources of change, not just the influences. This can be useful in further analyzing forms and the extent of alleviation of environmental problems. One possible difficulty is how the behavioural dimension of effectiveness is framed. One must consider the *reasons* or *sources* for the change in behaviour -- whether it was a result of alternatives offered to actors that allows them to change their actions (means) without altering their understanding/appreciation of the problem and the goals, or whether it stemmed from the latter. This project proposes that the former (a change of means not goals) represents a “shallower” type of *adaptive change*, and the latter (a change of goals and means) a “deeper” form of *innovative change*.¹⁴ If we differentiate between adaptation and innovation to reflect the level change, one can see that Young is focused on adaptation, which does not

¹³ Ibid. 110

¹⁴ For more on these types of changes, see Busumtwi-Sam, J. “The UN and Human Security: Institutional Inertia, Adaptation and Innovation.” Paper presented at the conference Challenges of Peacebuilding: Reconstructing Shattered Societies, February 3-5, 2006, Trudeau Centre for Peace and Conflict Studies, University of Toronto.

require any cognitive shifts. If behaviour is framed in limited terms to consider specific use of harmful agents, then the human component of the behaviour is not really measured. An example of this would be to consider the use of CFCs in the ozone regime. Effectiveness in simplistic terms was the result of an alternative that would affect change without influencing the fundamental behaviour of consumption.

Similarly in *International Cooperation: Building Regimes for Natural Resources and the Environment* Young approaches regimes through the traditional definition that focuses on procedures, rules and decisions, monitoring and enforcement as demonstrated through the instrumentalist approach. Focusing on the creation of regimes, Young identifies rights and rules to be at the core of all regimes. While he admits that real world regimes are often not clear-cut but are rather ambiguous in nature, through his analysis of prominent regimes two components are highlighted: first, the conditions for operation and second, the consequences of operation¹⁵. Young's approach too is one founded on the means-goals (ends) approach.

In the collective work by Keohane, Haas, and Levy titled *Institutions for the Earth* the central question is, "whether, and through what mechanisms, international institutions can be effective in making the environment more conducive to a healthy life for natural species..."¹⁶. The empirical focus is on "observable political effects of institutions", specifically the outcomes that result

¹⁵ Oran R. Young, *International Cooperation: Building Regimes for Natural Resources and the Environment* (Ithaca and London: Cornell University Press, 1989), 23

¹⁶ Peter M. Haas, Robert O. Keohane and Marc A Levy. *Institutions for the Earth: Sources of Effective International Environmental Protection* (Cambridge, MA: MIT Press, 1994), 6.

from the application of an institution or regime. The measure here is not whether environmental changes actually take place, but whether and to what extent political institutions alter or innovate. Three criteria are introduced by Haas et al.; 1) the extent to which regimes contribute to appropriate agendas, “reflecting the convergence of political and technical consensus about the nature of environmental threats”, 2) the extent to which they contribute to more specific and comprehensive international policies, and 3) the extent to which they contribute to national policy responses¹⁷. Again, here regimes are conceived as instruments for affecting political change. These criteria for evaluating effectiveness look for positive empirical indicators that suggest actions have been taken. It does not consider or question the type of action or the appropriateness of these particular actions. Action itself is insufficient: we must also problematize and follow up the details of policy and other such outcomes.

In many ways, this instrumentalist approach is quite useful and intuitive. One’s reasoning may be that since a regime is created to respond to an issue, it follows that when studying regimes one should focus on operations and outcomes. However, it should be pointed out that outcome in the traditional dialogue is discussed in a very limited way. Outcomes are considered in terms of political responses, cooperative organizations, and quantitative results of regime influence on the issue area. Regimes are treated as social instruments that provide a means to an end. Interestingly, prevalent in regime theory and international environmental politics specifically, is the tendency for scholars to

¹⁷ Ibid. 8.

focus on the ability of international actors to cooperate. It is often this focus on cooperation between states as the desired outcome that distracts from the substantive consequences of regimes, and certainly the consideration of unintended results. While this is adequate for a basic understanding, critical theorists suggest that this traditional instrumentalist perspective is too restrictive.

2.2 Concerns From Critical Theory

Our perspectives or approaches can either restrict or enhance our analyses. If a scholar or researcher is particularly committed to the instrumentalist approach to regimes then they will be restricted in their conception and understanding of what regimes are capable of and of their significance. However, if one explores differing approaches and perspectives they will gain a fuller understanding that may include the discovery of anomalies or inconsistencies by uncovering the foundational questions that problematize our assumptions and commitments.

John Gerard Ruggie does just this in discussing the exclusive economic zone (EEZ). He argues that approaches to systemic change are developed within a specific space/time complex¹⁸. Our understandings are intersubjective and grounded in different realities, “not only substantively but also epistemologically”¹⁹. It ought not be taken for granted that disputes of the ‘facts’ happen, and the ‘facts’ that we accept shape our interaction with the world and

¹⁸ John Gerard Ruggie. “International Structure and International Transformation: Space, Time, and Method” in *Global Changes and Theoretical Challenges: Approaches to World Politics for the 1990s*, eds. Ernst-Otto Czempiel and James N. Rosenau, 29 (Massachusetts/Toronto: Lexington Books, 1989)

¹⁹ *Ibid.* 29.

our research. This is illustrated in his work on three competing views of the EEZ. One from the perspective of the 'physicalist', one from a 'historicity' perspective, and the third is the 'international community view'²⁰. In each of these perspectives different details are emphasized and different significance is given to the state practice of EEZ. In considering international transformations, Ruggie finds that to approach international structures as both the dependent and independent variable is the most effective way to discover transformation. He states, "...the one component of international structure that is permitted to vary in the prevailing structural theories shows no variation, but it may be that change is taking place precisely in those other components of international structure that are assumed not to vary at all!"²¹. This is an example of how approaches and perspectives can be limiting and restrictive. They tell us what change is, how it should look, and where it should take place. However, as Ruggie suggests, when these assumptions are erroneous our approaches offer no suggestions for how to 'step outside' of them and examine our fundamentals.

In tracing the intellectual evolution of regime theory and the study and influence of international organizations, Friedrich Kratochwil and John Gerard Ruggie find that, "... in practice regime analysis is wracked by epistemological anomalies ..."²². These anomalies impede the ability of the discipline to achieve clarity in the concept and capacity of regimes, which, in the view of these authors, is already murky and ill-defined. Working through a primarily positivistic

²⁰ Ibid. 29.

²¹ Ibid. 27.

²² Kratochwil, Friedrich and John Gerard Ruggie. "International Organization: A State of the Art on an Art of the State," *International Organization* 40 no. 4 (1986): 764.

instrumentalist approach concerns arise with the assumption that a clear separation of functions is always possible and identifiable. Means and goals are not necessarily clearly separated and situated in a subordinate-superordinate relationship²³. This is particularly the case where international institutions and regimes overlap and exist inside larger structures. To respond to the ontological/epistemological tension Kratochwil and Ruggie suggest an alteration take place that includes the communicative functions of social norms rather than restricting focus solely to referential functions. One possible result of this shift toward a more interpretive approach is to include intersubjective epistemologies that may contribute to the integration or exploration of informal mechanisms²⁴. It is through these informal mechanisms that one asks new questions and redefines concepts and their applications.

Eivind Hovden takes a critical stance in analyzing the lack of academic capacity in international relations (IR), and more specifically regime theory, to deal adequately with issues regarding environmental preservation and degradation. The positivist epistemology that is dominant and largely unquestioned in international relations is argued to be a major contributor to the narrow focus of the instrumentalist approach in regime theory²⁵. Hovden outlines the positivist position in three propositions: 1) the social sciences can be value free, 2) social scientific inquiry revolves around questions of instrumental rationality, and 3) inter-subjective meanings are inescapable background

²³ Ibid. 770.

²⁴ Ibid. 774.

²⁵ Eivind Hovden. "As if nature doesn't matter: Ecology, regime theory, and international relations," *Environmental Politics*, 8 no. 2 (1999): 58.

features of inquiry²⁶. It is argued that ecological thought does not operate in accordance with these assumptions. As such in order to overcome the peripheral position that environmentalism has in regime theory and IR a 'reorientation' in the dominant theoretical traditions are critically addressed²⁷. Hovden appears to be seeking a way to gain theoretically productive knowledge of nature from outside empirical analytical sciences²⁸. Such an orientation would include a strong ethical foundation. While the goals that Hovden outlines are questionable in their likelihood and plausibility, the criticisms offered are of great value. Many of the issues raised in this piece respond directly to the works of Underdal, Young, and Haas et al. While a reorientation is needed, Hovden may go too far, leaving students and scholars without substantive methodology and epistemology to work with. Environmentalism is profoundly ethical, and positivism requires further questioning and deconstruction, but to work from completely outside the current system or paradigm is infinitely difficult and may prove to be fruitless.

Matthew Patterson explores many of the same issues as Hovden, and reaches similar conclusions in what he terms 'Green political thought'. Specifically he argues that environmental problems based in regime theoretical approaches depoliticize the problems that they work to engage and in so doing regime theory attempts to reduce issues to technical problem solving.²⁹, This is seen in the instrumentalist view presented earlier where there is an emphasis on means-ends rationalism through positivistic methodologies. Patterson further

²⁶ Ibid. 58.

²⁷ Ibid. 67.

²⁸ Ibid. 68.

²⁹ Matthew Paterson. "Radicalizing regimes? Ecology and the critique of IR theory". in *Boundaries in Question*, eds. A. Linklater and J. Macmillan, 212 (London: Pinter, 1995).

observes that in the traditional regime theory approach, a particular notion of 'effectiveness' is assumed to be unproblematic³⁰. This notion according to Patterson requires only that state behaviour be shown to have altered. This particular conception of effectiveness is attributed to Haas et al. Again, as I argued earlier, this does not necessarily imply that any positive changes have been made with respect to the environmental problem in question. Also imbedded in Patterson's criticism is the state-centric conceptions which are foundational in regime formation. From a position of critical theory versus mainstream IR or regime theory, this is a legitimate concern. However, this is not an obvious problem in relation to evaluating effectiveness. As state sovereignty is recognized and upheld in the declarations in which regimes are founded, it is implicit that the state as legitimate exploiter of nature be the focus for reform and change at some level. This alone is inadequate, but it appears to be an important part of the puzzle. One must account for the reality in which regimes emerge. As they are largely born out of UN initiatives, a state-centric position should be expected, it is here that criticism may be best directed.

Critical theorists are particularly sensitive to the intersubjectivity and interpretation of reality. By asking probing questions and introducing perspectives outside of established paradigms, critical theorists force students and scholars to rethink their interaction with the popular and easily accepted theories. Through the works discussed above it becomes clear that the instrumentalist view, while valuable in its own right, is too narrow in its scope and capabilities. Regimes can

³⁰ Ibid. 213.

be much more than means to particular ends. At times they can be symbols or represent emerging consciousness. Critical theory encourages unique approaches and creative problem solving that problematize that which is comfortable and easy.

Hybrid Criteria a Proposal for Revised Evaluative Criteria

2.3 Instrumentalist Contributions

As has been argued, an instrumentalist approach to evaluating regime effectiveness is insufficient when taken alone. However, the meaningful contributions of this approach ought to be acknowledged and made use of. For this reason, I propose to include two instrumentalist concerns in a revised evaluative criteria. When evaluating a regime it can be useful to consider the extent of institutional influence and capability. One should be able to determine if a regime in fact does what it was created to do.

The first of the two instrumentalist criteria is to ask to what extent substantive goals were met. This question appears to be the starting point for all of the instrumentalist scholars examined in the literature review, and it is there for good reason. As can be observed in the short history of international regimes of almost any variety, their creation and structure is copied presumably with the intention that the 'right' structure and rules will result in the desired outcomes. Whether or not this is actually the case is of little consequence. With precedence set on instrumentalist means-ends approach to regime creation and evaluation, one's inquiry into effectiveness will necessarily begin with the question: were the

explicit goals set out by the creation of the regime met and with how much proximity?

Jacobson and Kay ask this fundamental question, but in their elaboration of what this entails they are clearly focused on the procedural rather than substantive goals. Concerned primarily with timetables, meetings and committees³¹ this approach does not consider the extent to which real changes take place with relation to the issue area itself. Underdal is slightly more sensitive to this issue and focuses on the 'substantive problem-solving' capabilities of a given regime. Underdal observes that when working within a discourse focused on procedural goals, "[o]ne is simply equating success with the establishment of *any* kind of cooperative arrangement would lead us to focus on formal rather than substantive achievements."³² While Underdal's observation does speak to some of the concerns that have been introduced, one further point of contention with his approach is the emphasis and focus on 'problem-solving' that ultimately leads him to the creation of a quantitative model for evaluation. This is problematic in my perspective because any quantification of levels of success not only raises questions regarding the arbitrariness of designation, but also because not everything can be quantified. Some examples of this may include motivation and/or level and types of change that result or inform a regime. Using a collaboration of institutionalist thinking, such as that of Jacobson and Kay with Underdal, one is able to build upon fundamental notions and ideas of what evaluation ought to include. While I do not take their criteria at face value, I have

³¹ David A. Kay and Harold K. Jacobson, *Environmental Protection*, 18

³² Arild Underdal. *Measuring and Explaining*, 93

taken the sentiment behind some questions and re-conceived them to address inescapable issues that need to be addressed in an evaluation of a regime.

The second instrumentalist criterion is more complex and speaks to the ongoing shortcomings of regime theory that scholars are forced to address: to what extent was the regime itself responsible for the outcomes? If one cannot account for the extent to which outcomes can be attributed directly to the influence of a regime, then there is no way to be certain of its actual effectiveness. To answer this question one may look for empirical indicators. While a positivist or institutionalist approach may seek quantitative indicators such as the number of policy initiatives regarding that specific issue, Dimitrov also points out that symbolic indicators can also be of great relevance³³. Such an indicator may be the shift in practices of industries, governments or individuals with regard to purchasing preferences or participation in an emerging dialogue.

In a collective work of Young, Breitmeier and Zürn, the issue of the causal influence of regimes is raised. Upon reflecting on the history and future of regime theory they admittedly write, “[o]ngoing difficulties hamper efforts to demonstrate the causal significance of regimes.”³⁴ They also find that in measuring the effectiveness of a regime there is implicit causal judgment or inference imposed on the relationship between outcome and regime. This difficulty is further complicated by the likelihood that other outside factors may influence regime outcomes and thereby detract from the influence or role of the institution itself.

³³ Radoslav S. Dimitrov, “Hostage to Norms: States, Institutions and Global Forest Politics” *Global Environmental Politics* 5 no. 4 (2005): 6.

³⁴ Helmut Breitmeier, Oran R. Young and Michael Zürn. *Analyzing International Environmental Regimes: From Case Study to Database*. (Cambridge, MA: MIT Press, 2006), 2.

This is indeed an important issue to be addressed. The solution found by Breitmeier et al. is to develop an international regime database. This highly complex and nearly inaccessible database is unattractive for the purposes of my project. Furthermore, while inductive inference may not be optimal in the positivist perspective, I am not seeking certainty. This causal relationship based on appropriate and convincing evidence is sufficient. Since it is the case that institutions do not exist in a vacuum, and as such there is continuous interaction between outside factors and the institution itself, it appears unreasonable to seek this explicit confirmation. In fact, as subsequent criteria are introduced, these outside factors become of great importance to the evaluation of regimes and their overall impact.

2.4 Two New areas for Concern

In working toward creating a more holistic perspective from which to evaluate regimes, two criteria rooted in critical theory have been included. For reasons discussed above, by including critical concerns one is able to work from outside of dominant frameworks and this should lead to asking new and insightful questions. By doing this, one is able to move away from a strict consideration of whether and how formal procedural goals were met to assess the success of the institution itself. The critical concerns offered here focus on the 'real world' implications and the level of change that occurred.

Thus, the third question in our new criteria, and the first derived from critical theory, is to ask what the intended and unintended outcomes of the

regime were and to what extent these outcomes either undermined or supported the regime goals. Too often regime structures and mechanisms undermine the very goals that they are created to fulfil, this specifically will be discussed in chapter 3 with regard to the climate change regime. Moreover, the specific implementation of regime influenced policy can often have unintended results. These results can be both positive and negative and may in the end reinforce the regime goals or detract from their realization. Consistency appears to be an issue and, at times, common sense as well, through the policy creation and implementation process where politicians and scholars lose sight of the original purpose of the regime.

A continuous theme found in critical critiques of instrumentalism is that the focus is too narrow. In keeping with this sentiment it reasonably follows that if the focus at the institutional level is too narrow then it is likely that it is also too narrow when considering outcomes or consequences. To revisit Patterson, he argues that effectiveness and success need to be considered beyond the ability of a regime to affect state behaviour or impact a specific item. He writes, “[e]ven if the responses can be shown to be effective in reducing individual pollutants, or managing particular resources, then it is highly probable that these achievements will only be offset by deteriorations elsewhere in the overall ecological system, and are limited precisely by their focus only on one pollutant.”³⁵ This, as will be discussed in detail in chapter three, is illustrated by the case of the ozone regime. Patterson’s concerns are shared by Hovden, who describes regime

³⁵ Matthew Paterson, *Radicalizing Regimes?* 215.

theory as operating within, “self imposed boundaries”³⁶. These boundaries not only constrain the areas of focus, but also work to frame the way individuals conceive and categorize issues, sometimes in such a way as to hinder opportunities for drawing meaningful connections. In international environmental politics there is a great deal of interdependence between issue areas as well as a great deal of policy overlap. Policies in one area affect the situation or outcome in another. Unintended outcomes are important to consider along with intended outcomes. Unintended outcomes may impact other regimes, as well as civilians, local and national economies, and diversity in the environment.

The fourth criteria, and the second informed by critical theory, is concerned with types and levels of change. This particular consideration speaks to both instrumentalists and critical theorists. While instrumentalists are concerned with changes in state behaviour, this criterion goes further in analysis and asks whether fundamental changes take place that can be attributed to cognitive level changes. In asking this, one is concerned with the level at which change is taking place, or needs to take place to adequately address the issue. The level of change will often influence the type of change and the framework from which solutions will be sought. To fully understand the implications and motivations of this question, an in depth discussion of a framework for change is needed, which is discussed in the subsequent section.

To summarize, the hybrid criteria consists for four considerations: 1) To what extent were substantive goals met? 2) To what extent was the regime

³⁶ Eivind Hovden, *As If Nature Doesn't Matter*, 61.

integral to the realization of the outcomes? 3) What were the intended and unintended (direct and indirect) outcomes of the regime and to what extent to these undermine or support the regime goals? 4) Did fundamental changes take place that can be attributed to cognitive level change? Amalgamating the two approaches and applying my framework for analyzing types and forms of change should provide useful insights on the capabilities of a regime, and a better understanding on how it operates to realize its goals.

2.5 Bridging the Gap: Framework and Implementation

It is one of the arguments of this paper that when working within the dominant instrumentalist evaluative criteria regimes are able to fair well without resulting in meaningful changes or outcomes. While this is not an inherent problem, when working within some issue areas deep level change appears to be the only way to support a successful and effective regime. Working within a framework of change allows one to better understand and discuss how regimes are influencing behaviour as well as suggests what might be done to support success. This framework of change is built on two interacting pillars of levels and types of change.

2.5.1 Pillar One: Levels of Change

Pillar one, representing levels of change, is hierarchical. This hierarchy illustrates deeper versus shallower levels of change. Also contained in this structure is the order of influence. Regulative changes are informed by normative

changes and, normative changes are influenced by cognitive changes. Through this chain of influence, it is fair to presume that when a cognitive change takes place regulative changes will follow. These are all connected. However, regulative change does not necessarily require a change in cognition.

2.5.2 Regulative

This level can be easily paired with the instrumentalist approach. At the regulative level the focus is on formal and procedural changes, how the 'rules of the game may change' or the mechanisms to enforce compliance. Through W. Richard Scott's perspective on regulation as a form of institution, regulation is best understood to be legalistic in its foundations, and requires this for legitimacy³⁷. The concern is with the instrumental ability of a regime to create the environment needed to meet the formal goals set up in a regime. When regulative change takes place the goals, conceptions, and norms stay the same. There is simply a change in the formalities associated with a regime. Changes only at the regulative level, I would argue, are the most common and easiest to accommodate. Changes here may result from the discovery of a more efficient way to achieve the same goal.

2.5.3 Normative

It is at the normative level where motivations for change may emerge. Here is where one determines or prescribes what ought to be or should be.

³⁷ Richard W. Scott. *Institutions and Organizations* (Thousand Oaks: Sage Publications. 1995), 35.

Powell and DiMaggio view the normative aspect of institutions to inform, "... standards of behaviour [which] are defined in terms of customs and obligations ..."³⁸ At this level changes take place because there is a moral or value based obligation to do so. Environmental regimes may emerge because there is a sense of an overarching responsibility to protect and preserve nature. Powell and DiMaggio also suggest that part of the influence at the normative level is to determine identifiable roles through which institutions are created and maintained³⁹. It is through roles that expectations and duties are determined. Scott argues that it is at the normative level that goals and objectives are defined, as well as the appropriate way to pursue them⁴⁰.

Change then at the normative level may take place when goals or objectives change, but more likely is because of a change in the view of how to appropriately achieve these goals. I would venture to suggest that if there is a complete change in goals that this change has been influence by a deeper cognitive change. However, if there is simply a normative reorientation then the change is beginning at the normative level and roles, obligations, and the logic of appropriateness are shifting. To differentiate clearly the regulative and normative levels - the normative informs the regulative on the structure and motivations for the regime, while the regulative fills in the formal and procedural voids.

³⁸ Walter W. Powell and Paul J. DiMaggio, *The New Institutionalism In Organizational Analysis* (Chicago: University of Chicago Press.1991), 8.

³⁹ Ibid. p.8.

⁴⁰ Richard W. Scott. *Institutions and Organizations*. 35-36.

2.5.4 Cognitive

Cognitive level change is the deepest. When there is a change in cognition there is a change in the way that something is conceived and/or defined. When this takes place, it would most likely follow that normative and regulative changes result to reflect this cognitive change. I would suggest that this type of change is the most difficult to bring about and occurs the least out of all of the levels. This particular form of change can be associated with critical theorists. A theme common to critical writing is that of the need to question foundations and conceptions. John Ruggie provides a good example of this in his article discussed above, in which he illustrated how differing conceptions of the EEZ altered the way it is understood and approached. To use the environment as a further example, if it is viewed from a capitalist perspective then one's definitions may be focused on exploitation and resources. However, to discuss the environment from the perspective of an ecologist, definitions may focus on the diversity in nature and interdependence. Based on the competing understandings particular sets of normative and regulative implications follow.

For Scott this cognitive level also deals with the importance of symbols and how they are to be interpreted. He writes, “[m]ediating between the external world of stimuli and the response of the individual organism is a collection of internalized symbolic representations of the world.”⁴¹ Symbols are words, signs and gestures and it is through these that we create our social realities in which our conceptions are shaped and play out. This is important for change in that

⁴¹ Ibid. p.40.

new symbols denote different sentiments and then in turn result in specific outcomes or reactions. To offer a concrete example of this in an environmental context, consider the symbolic value of a large SUV. Depending on one's cognitive orientation it may represent a socio-economic status, while in another of equal validity it represents a gluttonous consumption of unrenewable resources.

Powell and DiMaggio discuss the pervasiveness of cognition, and point out that our understandings, conceptions, and definitions are so engrained in us that we often take them for granted and are unable to reflect objectively upon them. They write, "[i]nstitutionalized arrangements are reproduced because individuals often cannot even conceive of alternatives ... Institutions do not just constrain options: they establish the very criteria by which people discover their preferences."⁴² With this in mind, it becomes clearer why international regimes are all created from a similar blueprint. They operate within the same cognitive orientation, and this may help account for why some are able to fair far better than others despite the fact that they all work from the same institutional blueprint. If this is actually the case, then one must re-evaluate the instrumentalist project. With their focus strictly on the regulative level, they are unable to evaluate the appropriateness of the framework within which they are working.

⁴² Walter W. Powell and Paul J. DiMaggio, *New Institutionalism*. 11.

2.5.5 Pillar Two: Types of Change

To accompany the pillar for levels of change is the pillar for types of change. The type of change expresses the way in which the level of change is implemented and expressed. This pillar is also constructed in a hierarchical arrangement. The hierarchy here implies that a deeper transition takes place through innovation than through adaptation. What is different in this pillar is that there is little connectedness between the two types. One does not influence the other.

2.5.6 Adaptation

Through adaptation superficial change takes place. This type of change is associated with regulative changes and instrumental frameworks. Through adaptation goals remain the same, but the method used to achieve them may alter. For Busumtwi-Sam adaptation occurs in response to external stimuli⁴³. Adaptation is reactionary and typically is expressed through formal changes in policy or action plans. Busumtwi-Sam further explains that through adaptive changes, "... one interprets the problem in such a way as to make the solution consistent with existing policies and programs."⁴⁴ Adaptive changes do not necessarily result in more efficient or effective outcomes. They are simply a revised way to reach pre-existing goals.

⁴³ James Busumtwi-Sam, International Cooperation. 9

⁴⁴ Ibid.

2.5.7 Innovation

Innovative change is the deepest level of change. It is through innovation that new means and ends are realized and pursued. Busumtwi-Sam argues that it is for this reason that, “innovative change is both instrumental and substantial.”⁴⁵ A foundational shift occurs in which learning has taken place that reflects a greater understanding of an issue and results in new formal and procedural means. Issue areas are redefined and approached from a different perspective based on a fundamental change influenced by learning. With innovative change comes a new way of doing things. I argue that innovative change is most likely to arise as a result of cognitive change. When there is a significant cognitive shift that reorients the fundamental conceptions, definitions, and understandings, innovative change is likely to result and reflect this shift through the creation of new theories and regime approaches.

Working within this framework I further argue that the climate change regime has done much better than previously thought. I would like to suggest that perhaps the reason that the climate change regime is experiencing such difficulty is because a cognitive change is taking place in response to the environment and issues affecting climate change. To adequately deal with these issues new learning needs to be completed, as adaptive solutions of instrumentalists will be ineffective. While the ozone regime has worked at the superficial level of regulation and adaptation, the climate change regime may play out through a cognitive change leading to innovative change.

⁴⁵ Ibid.

2.6 Summary: Bringing it all Together

Based on current scholarship of instrumentalists and critical theorists, a new framework and set of criteria for evaluating regimes has emerged. These integrated criteria consist of both instrumentalist concerns and questions that appeal to critical theorists. An amalgamation of the two approaches I believe will be valuable in offering a better assessment of effectiveness and a focus on questions that appeal to common sense. I believe these criteria also resolve a problem that plagues instrumentalist approaches and that is regimes that do not result in real innovative change may not do very well. Innovative change is important because it is at this level that people and civil society become more aware of the issues and make appropriate changes. Adaptation does not require any awareness at this level, and as a result, destructive behaviours and policies may persist. This is particularly a problem when evaluating criterion number three, which steps back and considers all outcomes, positive and negative, unintended and intended. Too many negative outcomes can detract from a few positive ones.

In the next chapter, the framework and criteria will be applied to two high profile environmental regimes: the ozone regime and climate change regime to illustrate in detail the inadequacy of the existing instrumentalist criteria, and the benefits of criteria focused on change and outcomes. It must be stressed however, that these findings are not conclusive, and are merely suggestive that an alternative way of doing things may exist.

CHAPTER 3: ENVIRONMENTAL REGIMES: THE CASES OF OZONE DEPLETION AND CLIMATE CHANGE

3.1 The Ozone Regime

Hailed as the great success of international environmental politics, the ozone regime has been used by instrumentalists to demonstrate the strengths of contemporary regime formation and effectiveness. As the standard on which subsequent regimes were modelled after, the ozone regime provided a framework from which to replicate successful future regimes⁴⁶. Embedded in this approach is the presumption that the structure of the regime is primarily responsible for the outcomes. It is with this thinking that one can begin to see the use of the 'one-size-fits-all' approach to international regime formation.

In 1974 a pair of scientists from the University of California developed the hypothesis that a number of man-made chemical compounds led to the destruction of stratospheric ozone molecules⁴⁷. The results of such destruction would lead to the disappearance of the earth's natural shield against UV radiation, thus leading to harmful levels of exposure to living organisms on earth. Of particular concern was the chemical CFC, which had been developed in the

⁴⁶ Owen Greene. "The System for Implementation Review in the Ozone Regime" in *The Implementation and Effectiveness of International Environmental Commitments: Theory and Practice*, ed. David G. Victor, Kal Raustiala, and Eugene B. Skolnikoff, 89 (Cambridge: The MIT Press, 1998).

⁴⁷ Radoslav S. Dimitrov, *Science and International Environmental policy: Regimes and Nonregimes in Global Governance* (Lanham: Rowman & Littlefield Publishers, Inc. 2006), 45.

1930's and became popular in the use of coolant systems⁴⁸. What set this chemical compound apart from others was discovered by an independent pair of scientists from Michigan University, who coincidentally were also working in 1974, and determined that CFCs are only broken down at higher levels of the stratosphere, which resulted in large amounts of chlorine being released⁴⁹. Eventually an indisputable connection would be drawn, confirming that CFCs were responsible for ozone depletion.

Through the combination of imperfect and unconfirmed scientific speculation, with strong resistance from powerful corporate interests, issue recognition and regime formation proved to be a difficult and lengthy process. In 1977, the United States, Canada, Norway, Finland, and Sweden collaborated and urged the United Nations Environment Programme (UNEP) to consider regulation of CFCs. With this, international recognition came about despite the existence of unconfirmed scientific evidence, which remained so until 1985⁵⁰. Following this there were numerous legal instruments created, beginning with the 1985 Vienna Convention for Protection of the Ozone Layer, followed by the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer and then regular meeting of the parties (MOP). The Vienna Convention specifically requires that parties to the agreement must take appropriate measures in accordance with, “the means at their disposal and their capabilities” to co-operate in research,

⁴⁸ Pamela S. Chasek, David L. Downie, and Janet Walsh Brown, eds. *Global Environmental Politics*, Fourth Ed. (Colorado: Westview Press, 2006), 107.

⁴⁹ Tora Skodvin, “The Ozone Regime”, in *Science and Politics in International Environmental Regimes*, ed. Steinar Andresen, Tora Skodvin, Arild Underdal and Jorgen Wetteland, 122 (Manchester: Manchester University Press, 2000).

⁵⁰ Chasek et al. *Global Environmental Politics*, 110.

legislative, administrative, and policy measures, the formulation of measures and procedures of standards for implementation, and finally to work with other “competent international bodies”⁵¹. All of this is to be done in the effort to, “protect human health and the environment against adverse effects resulting or likely to result from human activities which modify or are likely to modify the ozone layer.”⁵² With the goals clearly defined in terms of what actions states are to take rather than specific environmental outcomes, it becomes clear how instrumentalist accounts are so highly valued and how the ozone regime is able to fare so well. The instrumentalist perspective I would like to suggest is shared throughout international politics as the current paradigm, which I believe has been demonstrated through the specific wording and goals set out in the Vienna Convention.

The companion agreement Montreal Protocol was a binding agreement between 24 states to commit to a fifty percent reduction of 1986 levels of ozone depleting substances by 1990⁵³. Included in this agreement was the clause that parties to the protocol meet at least every four years. A ten-year delay of action was given to developing states that agreed to sign on to the protocol⁵⁴. Through the subsequent meetings of the parties, the regime built strength and flexibility by encouraging an ongoing dialogue and continued research. It was in 1989 that the first MOP was held in Helsinki Finland, that the mandate of the Montreal Protocol was expanded to include other ozone depleting substances not named in the

⁵¹ United Nations Environment Program, “Vienna Convention for the Protection of the Ozone Layer”, UNEP, Article 2, www.unep.org/ozone/viennaconvention2002.pdf

⁵² Ibid. Article 2.

⁵³ Dimitrov, *Science*, 46.

⁵⁴ Skodvin, *The Ozone Regime*, 124.

original agreement⁵⁵. At the second MOP held in London England, the multilateral fund for the implementation of the Montreal protocol (MFMP) was created to respond to the needs of developing countries; and then at the fourth MOP target deadlines were accelerated and two more damaging chemicals were added to the discontinue list⁵⁶. Included in the design of the ozone regime was a panel for scientific and technological assessment, strengthening controls through amendments and adjustments, reporting requirements, the potential for trade sanctions against countries that refused to ratify, and a procedure for reviewing the effectiveness of the regime⁵⁷. It can be suggested that through the mechanism of regular meetings, the ozone regime demonstrates a strategic method of beginning with a broad general agreement and then over time, and with the development of new scientific findings, the participating states expanded the scope and level of commitment. It is through the composition of this institutionalized approach that the regime is seen to gain much of its effectiveness.

The ozone regime, however, did not reach its level of success without struggles. The coalition that first presented the issue to the UNEP was itself viewed as a positive element in overall effectiveness of the regime. The United States, as the greatest consumer of CFC and home to the highest concentration of corporate interest for the continued use of CFCs, has been highly praised for taking a leadership role in the creation of the regime⁵⁸. Also, notable in this

⁵⁵ Ibid. 124.

⁵⁶ Chasek et al. *Global Environmental Politics*, 111.

⁵⁷ Ibid. 110.

⁵⁸ Dimitrov, *Science*, 44.

discussion is the creation and impact of epistemic communities. Initially, despite a strong blocking coalition (Japan, the European Community, Indonesia, India, China, Brazil and Mexico), the confirmed and continued scientific research and monitoring of the ozone hole, eventually led to widespread agreement. Lastly, due to the growing rate of consumption in developing countries it was pivotal to the regime's effectiveness that they became party to the agreement. As a result of a 540 million dollar fund being created by donor countries, developing countries were given the incentive they needed to sign the agreement. This fund was created to respond to the financial burden that the blocking coalition would face as the result of binding obligations to replace harmful substances with less damaging substitutes. It has been estimated that as a direct result of the regime, the consumption of CFCs, which was measured at 1.1 million tones in 1986, was reduced to 100,000 tones in 2003⁵⁹. In fact, it is very much through the resolution of the impediments discussed above that the regime has been widely evaluated as the standard at which to set the criteria for success.

3.2 The Ozone Regime and Institutionalism

It is generally accepted by instrumentalists that much of the success of a particular environmental regime can be attributed to its institutional composition. From this account a brief summary of the development of the ozone regime is as follows. The regime was started through an international convention recognizing the environmental issue and thus defining the problem. From here, states

⁵⁹ Chasek et al. *Global Environmental Politics*, 114.

became involved in negotiation and bargaining to develop a framework convention that would include specific goals and targets. Once this framework was agreed upon, special provisions were made to ensure regular meetings of the parties involved in the agreement to continually strengthen the regime. Also included in this framework are mechanisms for reporting, monitoring noncompliance, and financial and technical assistance⁶⁰. The focus here is on the institutional developments and legalistic results. Using this perspective, the ozone regime has been said to be effective because of its specific composition. In analyzing the ozone regime through an instrumentalist lens, I will use the criteria outlined in chapter two. The first is the strength of state response and compliance. The second is the extent to which procedural and substantive goals were met.

State response in this case has been considered to be very strong. States that initiated the regime did so in such a way as to strongly motivate others to become a party to the agreement. What should also be noted in this understanding, however, is that in most accounts of international environmental regimes, there generally exists a strong dichotomy in the response of developed states and developing states, for a number of reasons. For instance, developing states argue that the bulk of contemporary environmental problems are the direct result of activities that take place primarily in the developed world. Secondly, a cost-benefit analysis from the perspective of developing states is generally not calculated to be worthwhile. In the case of ozone depletion, for example,

⁶⁰ Ibid. 197.

developing states argued that in addition to not having access to the needed funding to implement such a regime, historically CFCs were used much less in developing regions where fewer people have refrigerators, air conditioners and so on. However, with many of the big developing states (such as China and India) rapidly industrializing, their consumption of CFCs and other environmentally harmful practices are accelerating fast.

In this particular case, an unconfirmed scientific hypothesis encouraged the strong action of a few states to initiate a political discourse on ozone depletion. As the motivations for regime development were strong and pursued by even stronger states, this momentum was carried throughout the development, implementation, and expansion of the regime. Interestingly, it is also a characteristic of this regime that a substantial amount of progress was made prior to the existence of scientific certainty. This fact reveals that epistemic communities were major contributors to the success of the ozone regime. State motivation was so strong that the United States initiated a multi-million dollar fund that was used to sway and support developing countries into agreeing to greater commitments. From the perspective of instrumentalists and realists it is intriguing that states would agree to unequal costs and burdens. However, it does illustrate the level of commitment and support that the regime was able to create. Because of this, the ozone regime is considered to be effective.

Next, we consider the extent to which procedural and substantive goals were met, and here it will be demonstrated that the ozone regime was effective. What instrumentalists evaluate here is whether the regime was able to create

formal agreements and arrangements that provided a framework and binding commitments. They then consider the extent to which the specific goals were met. The ozone regime was able to create binding agreements and obtain the required amount of signatures. This can be seen as quite an accomplishment as ratification required the cooperation of a large number of states with competing interests. In fact, it is reported by the Ozone Secretariat that as of June of 2008, 193 states had either ratified, accessed, or approved the Montreal Protocol⁶¹. Part of the institutional strategy implemented in the ozone regime was the two-step approach. Here states gradually eased into binding agreements over a series of conferences that took place over a number of years. This worked so well in this case that states not only committed to numerous agreements, but these agreements subsequently increased the range of banned harmful chemicals.

The Montreal protocol quantified specific targets and set concrete deadlines. To reiterate, the initial goal was a fifty percent reduction of 1986 levels by 1990. While the regime did face serious complications during the mid-1990s, such as lack of data reporting and noncompliance from states in transition across Eastern Europe⁶², by 2003 CFC levels were reported to be at 100,000 tones, compared to the 1.1 million tones that were measured in 1986 (a ninety percent reduction). While it is not clear if the goals were met, the goal of CFC phase-out was certainly realized eventually. Today these goals continue to be strengthened. Chasek et al. are even optimistic enough to suggest that the

⁶¹ United Nations Environment Programme: Ozone Secretariat, "Evolution of the Montreal Protocol: Status of Ratification," UNEP, http://ozone.unep.org/Ratification_status/

⁶² Greene, 'System for Implementation Review', 120.

possibility exists for the ozone layer to fully regenerate during the current century, if and when a complete ban of CFCs is enforced⁶³.

For instrumentalists, the ozone regime often serves as the great success story of international regime theory in environmental politics. The regime for all intents and purposes did what it was created to do. It created an overarching framework institution based on legalistic agreements. Subsequent protocols and agreements then led to the successful realization of quantifiable goals. In the instrumentalist criteria effectiveness is something that is to be measured. As Jacobson and Kay's criteria points out, a regime's effectiveness is only meaningful when compared to the measured effectiveness of similar regimes⁶⁴. Regimes therefore are not simply evaluated on their own merits, but how well they score in relation to others. While there are areas in which this is helpful or desirable, it does not necessarily take into consideration that each individual regime faces unique circumstances. Some environmental efforts are more palatable to states than others. The ozone regime was considerably straightforward. There existed a clear problem, with a clear cause and led states were able to encourage widespread engagement on the issue. As will be illustrated in the following section, while it is the case that this form of criteria does have its value, it is rather superficial and does not take into account the level at which change has taken place.

⁶³ Chasek et al. *Global Environmental Politics*, 114.

⁶⁴ Harold K. Jacobson and David A. Kay. *Environmental Protection*, 18.

3.3 A New Perspective on the Effectiveness of the Ozone Regime

When evaluating the ozone regime in accordance with the new hybrid criteria much different results emerge. Under the new considerations it does not fare quite as well suggesting the ozone regime has been uncritically praised by instrumentalists. To reiterate, the four criteria are: 1) To what extent were substantive goals met? 2) To what extent was the regime integral to the realization of the outcomes? 3) What were both the intended and unintended (direct and indirect) outcomes of the regime and to what extent to these undermine or support the regime goals? 4) Did fundamental changes take place that can be attributed to cognitive level change? *The evaluation of the ozone regime based on this new criteria the questions will be dealt with in two sections. The first will briefly consider questions one through three together, and the second will focus on the fourth question, which is of greatest importance and requires the most attention.

The first criterion was discussed at length in the instrumentalist section above. Substantive goals were met as articulated in the ozone regime. Second, due to the creation of the multilateral fund and strong compliance, it can be reasonably inferred that the regime was responsible for the favourable outcomes. According to Dimitrov, the multi-lateral fund alleviated the two strongest impediments compromising the successful outcome of the ozone regime⁶⁵. First, along with the money, developing states were given equal representation on the committee responsible for allocating the funds. This alleviated the concerns of

⁶⁵ Dimitrov, *Science*, 51.

developing countries with regard to Western intentions. Second, the donor states were able to view the money as market investments intended to support technology they were developing⁶⁶. This technology led to the creation of CFC substitutes, which ultimately led to the widespread switch to HCFCs and the overall reduction levels measured above.

In considering the third criteria (intended and unintended outcomes), one particular negative outcome that stands out is that the goals were achieved through adaptation. In this specific case, this is negative because the chemicals that made adaptations possible are still harmful to the environment. HCFCs continue to deplete the ozone layer they simply work at a slower rate. As it is the case that they are also dangerous to the ozone layer, they are an unsustainable alternative. This is recognized by the UNEP and Montreal Protocol signatories as indicated by the fact that HCFCs are now on the chemical phase-out list, and appear to be a top priority⁶⁷. Of more concern are recent reports from 2006 and 2007 that find production of HCFCs is “dramatically increasing” and they may be linked to global warming. Through adaptation, Montreal Protocol signatories were able to substitute technologies that allowed consumers to continue daily practices, while presumably responding to changing environmental needs. What in turn appears to have happened is that we are back where we initially started; with a need for more change to address an ongoing problem of environmental degradation.

⁶⁶ Ibid. 51.

⁶⁷ United Nations Environment Program, “Ozone Action Branch” UNEP, <http://www.uneptie.org/ozonAction/topics/hcfcqa.htm>

This leads directly into a discussion of the fourth criterion. Clearly a cognitive shift did not take place in the case of the ozone regime. Rather there was a regulative change that was informed by a normative re-focusing. The Vienna Convention clearly states that human life and the environment are to be protected from human activities that threaten their well-being. With this foundational value the ozone regime was mandated to address the conditions and activities leading to the depletion of the ozone layer. In this particular case it may be too strong to suggest that a complete normative change took place, I would rather suggest that a normative reorientation took place in which environmental concerns were expanded to include the ozone regime and the specific activities that contributed to its disappearance. The norm of environmental responsibility was further asserted in which industries and governments were expected to do something to address this new challenge. Inactivity was no longer acceptable.

Interestingly, however, is that this mandate did not appear to include any responsibility on the individual citizen. Change took place at the regulative level, where constraints and regulations were placed on industries and governments. Rather than a reconsideration of the way in which we preserve food and cool our homes, the specific chemicals used to achieve these ends were analyzed. Certainly it appears that adaptation in this case would be much easier than innovation. To re-evaluate the methods of modern living and standards by which the developed world has become accustomed would not be received with much popularity. Regulative changes were instituted in which there was a change in

the 'rules of the game'. Research efforts were made to find or create new ways to continue the same behaviours. CFCs were simply substituted by HCFCs and this was legally reinforced and legitimized.

3.4 The Climate Change Regime

Climate change, also known as global warming, is the phenomenon in which the earth's average temperature increases. This trend is a result of rising levels of greenhouse gasses being emitted into the earth's atmosphere. The most common of these gasses is carbon dioxide. It is widely accepted that this is the direct result of human activity. The consequences are both speculative and substantial. An increase in the earth's temperature will produce outcomes that will vary by region, form, and intensity. The most commonly identified result is that coastal areas will experience rising sea levels as a result of melting icecaps, while some non-costal regions will have greater periods of draught, in some cases leading to the spreading of desertification. The effects will be vast and spread across numerous issue areas, such as other environmental issues, energy, the economy, inter-generational responsibility, and development. It is speculated that this trend began because of the industrial revolution, in which developed states experienced a boom in industry growth and fossil fuel consumption.

It had been known to the scientific community for some time that increased levels of carbon dioxide in the earth's atmosphere could lead to climate change. However, the process of issue recognition did not take place

until 1985⁶⁸. At that time the World Meteorological Organization (WMO) and UNEP initiated the process that led to the creation of the Intergovernmental Panel on Climate Change (IPCC) in 1988⁶⁹. The mandate of the IPCC included the tasks of detection and attribution. They were to determine if a warming trend could in fact be detected and then the extent to which human activities could be attributed to that trend⁷⁰. An IPCC in a 2001 Assessment Report found that global average temperatures over the next hundred years will parallel the rate of change experienced during the ice age ten thousand years ago. Even more disturbing is their projection that ocean levels will continue to raise after green house gas (GHG) emissions are cut⁷¹. The damage has already been done. Even if all of the earth's inhabitants were to completely cease all harmful activities from this day forward, the earth's average temperature will continue to rise.

From the early work of the IPCC came global consensus that climate change was in fact a serious threat, and after years of difficult and divided negotiations the United Nations Framework Convention on Climate Change was formed in 1992 at the Rio Conference⁷². The convention did not outline any specific targets or commitments. What it did do was divide countries into their respective annex groups, mainly based on their level of economic development. From here states made general commitments regarding the support of non-

⁶⁸ Chasek, et al. *Global Environmental Politics*, 118.

⁶⁹ Yamin Farhana and Joanna Depledge, *The International Climate Change Regime: A Guide to Rules, Institutions and Procedures*, (Cambridge: Cambridge University Press, 2004), 21.

⁷⁰ Ibid. 21.

⁷¹ Ibid. 21.

⁷² Joanna Depledge, *The Organization of Global Negotiations: Constructing the Climate Change Regime* (London: Earthscan, 2005), 21-22.

annex countries and the overall aim of the convention⁷³. In retrospect, one of the most important agreements that was made was that members would continue to meet regularly at Conferences of the Parties (COP) to maintain an open and continued dialogue about climate change and efforts to address it.

The most widely known and successful COP took place in 1997 in Kyoto, Japan. It was here that the Kyoto Protocol was adopted and the division between supporters and non-supporters widened beyond repair, with the eventual withdrawal of the U.S. Kyoto called for binding overall reductions of six greenhouse gasses of at least 5.2% of 1990 levels by 2012⁷⁴. Differentiated national targets were accepted, ranging from the European Union (EU) having to reduce by 8% and Iceland accepting credit to increase emission of 10%⁷⁵. Due to the need for 55 parties to ratify the protocol for it to enter into force, it took 8 years before the Kyoto Protocol became fully binding, when Russia ratified the agreement in 2005. To create incentive and alleviate high costs, three controversial flexibility mechanisms were also adopted: clean development mechanism (CDM), joint implementation (JI), and emission trading⁷⁶. CDMs and JI allow states or companies to offset their emission consumption by investing in emission neutralizing activities or technologies in other places. An example of this could be the support of protected forests, or the creation of new carbon consuming plantations. Emission trading allows states to commodify carbon

⁷³ Ibid. 21.

⁷⁴ Chasek, et al. *Global Environmental Politics*, 122.

⁷⁵ Ibid. 123.

⁷⁶ Carlo Carraro, Christian Egenhofer, and Noriko Fujiwara, "Bottom-up Approaches Towards a Global Climate Agreement: An Overview", in *Climate and Trade Policy*, edited by Carlo Carraro, Christian Egenhofer, and Noriko Fujiwara, 3 (UK: Edward Elgar).

credits and sell or trade them with states that will have difficulties meeting their national targets. In theory the overall reduction rate will remain the same, but states can trade their individual responsibility levels. This can have both positive and negative consequences.

Today the Kyoto protocol is widely considered to be a failure. States that ratified the agreement have openly abandoned their responsibilities and commitments. The climate change regime has been plagued with diverging cleavages between veto blocks and leadership coalitions. There have also been systematic divides established within the protocol itself, as seen through the Annex 1, Annex 2 and non-Annex parties⁷⁷. From the beginning the EU played the main leadership role and was supported by Norway, Australia, the UK and Japan. The dominant veto states were the U.S., China, India, and Brazil⁷⁸. It is important to note, however, that these positions have not been static and states have shifted positions throughout the process. The EU, which was strongly opposed to the emission trading has come to be the greatest endorser of it, and used the mechanism within the EU to meet and accelerate emission reduction targets.

In December of 2007, the COP met once again for two weeks in Bali, Indonesia. There were over ten thousand participants and delegates representing 180 countries. The Bali Action Plan resulted from this meeting. This

⁷⁷ Note: Annex 1 refers to parties that are industrialized and members of the OECD, as well as states that have transition economies such as Russia. Annex 2 refers to industrialized members that are part of OECD, but not states with economies in transition. It is Annex 2 parties that would shoulder the greatest burdens. Non-Annex parties refer to states that do not fit into the categories outlined in either Annex 1 or 2 requirements. This mostly refers to developing states.

⁷⁸ Chasek et al. *Global Environmental Politics* 118

agreement focuses on the immediate need for states to cooperate in long-term efforts to address ongoing and deepening effects associated with climate change, while further reiterating past commitments⁷⁹. To support this action plan an ad-hoc working group has been established to ensure the objectives of emission cutting, as agreed to in the Kyoto protocols and subsequent conventions, will be met by 2012. This meeting indicates an ongoing commitment to addressing the challenges of climate change.

The climate change regime to date has been highly complex. Issues that continue to maintain priority include the role and responsibilities of developing states, the level of scientific knowledge and a reduction of greenhouse gas emissions. Interestingly, however, while the overarching regime has not seen any substantive success, a growing trend is emerging in which states and subnational groups, and locales within states are taking leadership roles and implementing “home grown” policies and values toward issues dealing with climate change. There appears to be an awakening or cognitive-shift taking place.

3.5 The Climate Change Regime and Institutionalism

The climate change regime has been built using the same institutional framework as the ozone regime, this being the Convention-Protocol method. While there have been some important similarities in terms of institutional design and the type of environmental issue area, there are some unique obstacles to

⁷⁹ United Nations Framework Convention on Climate Change, “Decision -/CP.13 Bali Action Plan” UNFCCC <http://unfccc.int/adaptation/items/4159.php>

creating an effective climate change regime. Climate change is an inherently complex issue area. While ozone molecules can be viewed and measured, climate change is a trend that takes place over decades (or even centuries). Climate change cannot be seen, but is rather inferred based upon global changes such as the melting of the glaciers.

To recapitulate: the instrumentalist criteria used to evaluate the climate change regime include the strength of state response and compliance, and the extent to which procedural and substantive goals were met. From the beginning climate change has been faced with powerful impediments, including skepticism from influential political circles. In June of 2005, The Washington Post reported that the U.S. delegates attending the G8 annual meeting were committed to altering key documents regarding proposals for joint action on climate change. Their goal was to emphasize the continued lack of sound scientific findings to support the existence of the trend of global warming⁸⁰. The statements made on the floor of the American Senate further illustrate this skeptic position. In particular those of Republican Chair Senator James Inhofe in 2003, "With all the hysteria, all the fear, all the phony science, could it be that manmade global warming is the greatest hoax ever perpetrated on the American people? I believe that it is."⁸¹. While there was certainly a strong response to the climate change regime, it was not necessarily positive. This position however, represents an

⁸⁰ James Gustave Speth and Peter M. Haas, *Global Environmental Governance* (Washington: Island Press, 2006), 28.

⁸¹ David Demeritt, "Science Studies, Climate Change and the Prospects for Constructivist Critique," *Economy and Society* 35, no. 3 (2006): 453-579. www.jstor.org

extreme response. Generally the climate change regime has had mixed results when considering the strength of state response and compliance.

Early successes include the level of participation at the 1992 Earth Summit and the eventual ratification of the Kyoto Protocol. However, as the Rio Declaration recognized the 'right to develop', developing states refused to accept binding agreements that required them to cut emissions. Working within the traditional paradigm that development equals industrialization, developing states are unwilling to compromise the betterment of human lives to address climate change. The precedent that has been set by developed states is one in which the cost of attaining development is rather high for the environment. As a result of this position the Kyoto protocol did not require non-Annex states to reduce emissions, or even stabilize current levels. This has resulted in a great weakness of the agreement, and has been the main point of contention for the U.S. that refused to ratify if burdens would not be more evenly spread across the globe. Conversely, it has been the position of the developing world that they should not be held responsible for the state of the environment today as the emissions in the earth's atmosphere has overwhelmingly been the result of the activities of developed states.

For those that did ratify Kyoto and are committed to concrete targets compliance has been compromised. Canada for example, under the Harper Government has continued on a "business as usual path"⁸². In Stephen Harper's address to the Canada-UK Chambers of Commons in London, he indicated that

⁸² Stephen Harper, 29 May 2008 London. Available online:
<http://pm.gc.ca/eng/media.asp?id=2131>

Canada has continued to significantly increase the level of GHG emissions consumed and we are not alone in our lack of compliance. Various states within the EU, according to Harper, are also continuing to increase consumption such as Spain, Italy and Ireland. These examples indicate from an instrumentalist perspective that while all of the necessary legalistic agreements and mechanisms are in place, state response has been less than optimal.

When considering the extent to which procedural and substantive goals were met the results are also mixed. Procedural goals were replicated from the ozone regime. The UNFCCC led the way for the Kyoto protocol, which also established regular conferences of the parties. All of the appropriate institutional elements are present. Substantive goals are more difficult to assess. According to the findings presented at the 13th conference of the parties in Bali, the data collected from 1990 to 2005 indicates that overall there is a slight downward trend in the consumption of GHGs⁸³. However, approximately half of the states measured have continued to increase their consumption levels. This is only mildly offset when balanced against the numbers and intensity of states that have reduced consumption. An interesting observation that accompanies these findings is that the Annex 1 countries that are not economies in transition are doing much worst compared to the Annex 1 countries not considered to be in economic transition. There are of course a number of reasons why this is the case. It is becoming increasingly clear that the 5.9% reduction of 1990 levels of GHG by the year 2012 goal, which was initially set out in the Kyoto protocol, will

⁸³ United Nations Framework Convention on Climate Change, " GHG data from UNFCCC" UNFCCC http://unfccc.int/ghg_data/ghg_data_unfccc/items/4146.php

not be realized. According to Young's standards, the climate change regime has not preformed very well, as supported by the facts that compliance has been relatively low by key states and outcomes have not been realized.

From the instrumentalist perspective the Kyoto protocol presents some interesting points for discussion. While it can be generally concluded that the regime was unsuccessful, it did succeed in becoming a regime in the first place. This for strict institutionalists is a feat in and of itself. While it was able to reach minimum standards for existence such as achieving the needed signatories for ratification and the creation of necessary institutional and legalistic structures and mechanisms, it has done so with great levels of resistance. Issue recognition from the beginning was problematic and compliance is an ongoing struggle. Worth mentioning is the consequences of the United States leaving the bargaining table early on in the process and opting not to ratify the Kyoto protocol. As one of the world's greatest contributors to the consumption of GHG, not having the U.S. be a party to the agreement may seriously undermine the level of success that can be reached in the area of substantive goals. Similar to ozone depletion, climate change is a tragedy of the commons: in order to reach quantifiable goals all states must participate and cooperate. This sentiment was the focus of the last conference of the Parties.

3.6 A New Perspective on the Climate Change Regime

When considering the climate change regime under the new criteria some interesting results emerge when compared to the instrumentalist evaluation. By

including some questions informed by critical theory it becomes more apparent that success is more than what can be measured. In response to question one, of the extent to which substantive goals were met, I refer the reader again to the above discussion of instrumentalist evaluation, in which it was found that they have not yet been met. In fact, as stated, many developing states continued to increase emissions. While the first deadline for reductions is still in the future, one can speculate with confidence that the 2012 goals will not be realized.

Responding to question two, the extent to which outcomes can be attributed to the regime becomes complicated with the climate change regime. As the substantive goals have yet to be met, one can perhaps attribute the lack of measurable success to particular aspects of the Kyoto protocol. I assert as a point of consideration, lacking any certainty, that it is possible that the flexibility mechanisms contributed to this current state of instrumentalist disappointment. JI, CDM, and emission trading allowed for states to meet emission reduction targets without actually curbing emission levels domestically. As well states such as Iceland were given permission to increase GHG emissions, due to the fact that they were already so low. By providing mechanisms and loopholes through which states can legitimately avoid emission reduction, it is likely that the regime facilitated the conditions that make such an outcome possible.

The third criteria can be considered in two parts, the negative and positive outcomes. Of which there are many. In first considering the negative outcomes of the regime I return to arguments rooted in critical theory. An extreme example is illustrated in the findings of Heidi Bachram. She argues that particular projects

implemented under the CDM mechanism, “exacerbate environmental and social injustice”, through the creation of carbon colonialism⁸⁴. Bachram argues that the flexibility mechanisms of the Kyoto protocol deeply weaken the climate change regime and actually become part of the problem itself. Some of the ways that this particular mechanism can be carried out is through creating ‘carbon sinks’, which typically take the form of forest plantations, as well as engaging in renewable energy projects, generally involving solar and wind sources⁸⁵. It is through the unintended results of tree plantations that one begins to see the re-emergence of old colonial relationships between North and South. Indigenous communities are perhaps the most affected by climate change and the implementation of CDMs as they rely on the natural resources of forests to survive. Bachram discussed the numerous negative impacts on the environment through the over-development of tree plantations,

Now the World Bank is funding eucalyptus plantation in Brazil run by an existing plantation company called Plantar, with the intention that it be approved as a CDM project. While plantations have their own ecologically destructive qualities such as biodiversity loss, water table disruption, and pollution from herbicides and pesticides, their social impact is equally devastating to a local community. Lands previously owned by local peoples are enclosed and in some cases they have been forcibly evicted. This was the case in Uganda when a Norwegian company leased lands for a carbon sink project, which resulted in the eviction of 8,000 people in 13 villages⁸⁶

The social impact of CDM projects also contributes to the overall negative impacts that result from the climate change regime. This particular example

⁸⁴ Heidi Bachram, “Climate Fraud and Carbon Colonialism: The New Trade in Greenhouse Gasses,” *Capitalism Nature Socialism* 15, no. 4 (2004) 5-20, www.jstor.org

⁸⁵ *Ibid.* 8.

⁸⁶ *Ibid.* 12.

illustrates the importance of considering both the unintended and intended consequences of a regime. Surely the drafters of the Kyoto protocol could not foresee this kind of outcome, but when they arise they should be acknowledged and addressed. Environmental regimes are complex in their ability to impact much more than the environmental cause they were created for.

However, to dismiss the climate change regime as a complete failure would be rash. In considering the positive outcomes and the level at which change is taking place leads one to believe that the climate change regime may still have a positive future. One of the more obvious positive outcomes is the awareness of environmental sensitivity that has emerged. The Kyoto protocol has been quite visible in the mass media. The positive outcome of awareness leads directly into the discussion of the fourth criteria that considers the level and type of change that has taken place.

In North America the Kyoto protocol has resulted in little to no regulative changes. The rules of the game have not changed and new laws and regulations are introduced on only trial periods. On the surface there has been little success. However, there is overwhelming evidence to suggest that change at a deeper level is emerging. I argue that a cognitive shift has begun, which in turn is beginning to change norms and values. Civil society, industries, and governments, at all levels, are awakening to a new consciousness of the devastating impact that human activity has on the earth. Sustainable development, carbon footprints, and eco-friendliness are all popular concepts that are emerging with this cognitive shift. There is a new dialogue and approach

to accompany this shift. To illustrate my point with empirical indicators I first turn attention to examples in civil society.

Individual citizens are becoming more aware of their rates of consumption and waste products. Consumption of electricity, gas, water, and non-renewable products is all being noticed. Consumers are purchasing low-flow showerheads, energy efficient household machines, and light bulbs. Outside the home consumers are also changing the way they shop. One example of this is the new trend of bringing re-usable grocery bags. All of this fits into what Mark Roseland has termed eco-city living⁸⁷. Eco-city initiatives are based on a movement of urban ecology, and evidence that this movement is taking place is everywhere. This movement toward more sustainable living includes a critical reconsideration of modernity. Rather than widespread suburban communities, large gas consuming vehicles, and over-consumption and consumerism, the eco-city movement espouses smart cities that are based on ten principles. Some of particular interest are, to “revise land use priorities to create compact, diverse, green, safe, pleasant, and vital mixed-use communities near transit nodes and other transportation facilities” to “revise transportation priorities to favour foot, bicycle, cart and transit over autos, to emphasize ‘access by proximity’” and to “restore damaged urban environments, especially creeks, shore lines, ridgelines, and wetlands”⁸⁸. In Vancouver alone there are examples of initiatives taking place that reflect each of these points. New building developments are

⁸⁷ Mark Roseland, “Dimensions of the Future: An Eco-City Overview” in *Eco-City Dimensions: Healthy Communities, Healthy Planet*, edited by Mark Roseland, 3 (Gabriola Island: New Society Publishers, 1997)

⁸⁸ *Ibid.* 3.

experimenting with garden roofing, public transit lines are continuously being expanded and improved, and lastly there exist various grassroots organizations who focus on the protection and clean-up of threatened environments such as the British Columbia Environmental Network⁸⁹. Modernization, as a concept and practice in living and development, is being questioned and re-evaluated. Sustainable development movements are often reflective of a re-consideration of past ways of living off of the land and a return to a more 'simple' and holistic approach to living.

To turn attention to industries one needs only to look at transportation and entertainment to find an abundance of examples of an emerging cognitive shift. Auto industries are perhaps one of the most obvious examples of this green shift: all manufacturing companies include in their philosophies and research and development statements a commitment to produce more environmentally friendly vehicles that rely less on fossil fuels and emit lower levels of harmful GHGs. To provide a couple of examples Toyota Canada has adopted a Earth Charter that supports, "efforts at continuous improvement—from reducing the use of resources and energy in our manufacturing processes to making sure we give something back to the people of the Earth."⁹⁰ Ford, too, has adopted a mantra of "Leading the charge toward an earth-conscious way of life". In their list of achievements Ford includes eliminating energy waste through improving every

⁸⁹ ecoBC, <http://www.ecobc.org/>

⁹⁰ Toyota Canada, "Environment" <http://www.toyota.ca>

vehicle system and they were awarded the gold prize in the Canadian GHG registry⁹¹.

Likewise, the entertainment industry has become reflective of this cognitive shift. A good example is seen on television with the House and Garden station. This channel, that focuses on programming on almost anything to do with houses and housing properties, has committed specific blocks of time to air shows with a green or sustainable focus, e.g. such as The World's Greenest Homes, Organic Gardening, and Eco-Friendly Design Ideas. Clearly a shift is taking place in many industries where there is a need to become green either in their products or their philosophies.

Governments are the last constituency in which I look for cognitive convergence through actions or press releases. In Canada, while all levels of government have much to say on the environment and sustainable development, municipal and provincial governments are the ones whose action most reflects their ideals. At the Federal level there is an office for the greening government operations (OGGO). This office was created in 2005 with the mandate to accelerate the greening of operations through a number of initiatives such as, reducing resource consumption, green procurement, and an environmental performance vehicle fleet⁹². While these efforts are minimal, they are an effort nonetheless and parallel the actions taken by individual citizens. At the provincial level the Government of British Columbia has developed a Climate Action Secretariat that provides policy recommendations to the Premier regarding

⁹¹ Ford Canada, "Leadership" <http://www.ford.ca/app/fo/en/environmental/leadership.do>

⁹² Public Works and Government Services "Office of Greening Government Operations" OGGO <http://www.tpsgc-pwgsc.gc.ca/greening/text/index-e.html>

environmental agreements such as the Western Climate Initiative, The Climate Registry, The Energy Efficient Building Strategy, and multiple other agreements and action plans adopted by the BC Government. Governments are taking actions and responding to a growing consciousness regarding the environment and climate change.

As a result of the above examples I infer that convergence is taking place between industries, governments, and civil society that reflect a greater shift in cognition around the environment. Change is taking place through a bottom-up approach, as opposed to a top-down one in which the government imposes changes. Citizens are demanding and consuming eco-friendly alternatives to previous options. Industries and lower level governments are responding in turn. The environment is less defined by how it can be exploited than how it needs to be nurtured and respected. The symbol and term to accompany this shift is 'green'. 'Green' is a term that has been developed in response to this cognitive shift and is widely used and understood. People's motivations are also changing with this cognitive shift, to influence a normative shift as well. Individuals finding additional value in justification in activities they love such as gardening, bicycling, supporting local farmer's markets and so on. People have a new sense of responsibility toward the environment and future generations.

Innovative change has begun to accompany this cognitive shift. But this type of change it is difficult and slow, and perhaps can be attributed for the slow progress in the climate change regime. Examples such as new recycling practices and new approaches to developing cities and homes are all reflective of

innovation. However, as innovation is associated with learning, there are many developers and researchers still looking toward adaptive changes to respond to climate change. The hybrid vehicle is an example of adaptation, not innovation. While hybrid vehicles may emit less GHGs, they do not require individuals to make any changes in their transportation habits. On most fronts true innovation is yet to come and it will be something completely new and different. Rooted in a cognitive shift the innovative change will be a new approach to living that re-conceptualized the way we live, move, and interact within our environments. Perhaps in looking back, or to the methods used in the developing world, the developed world will be inspired to truly learn and develop green innovative alternatives to our current 'modern' way of living.

3.7 Conclusion

This chapter has moved away from the heavily theoretical focus of the second chapter and put theory to practice. First, the case of the ozone regime was presented including its history, challenges, successes, and where it stands today. Following this was an evaluation of the regime based on an example of instrumentalist criteria. It was found by these standards that the ozone regime was indeed a success having met the goals it was created to accomplish. By comparison the regime was then evaluated in accordance with the hybrid criteria that I am proposing, which integrates questions informed by critical theory. By these more rigorous standards the ozone regime was not to be deemed such a

success as it relied heavily on adaptation and regulative changes, which resulted in re-emerging threats to ozone depletion.

In the second half of the chapter the same process was applied to the climate change regime in which the history was presented, along with evaluations by both instrumentalist criteria, and the new criteria. In the case of the climate change regime it is considered to be less than successful by the narrow scope of instrumentalist concerns. By contrast, when evaluated by the new hybrid criteria the climate change regime is viewed to indeed face deep-rooted challenges, but maintain much promise for future success. As effectiveness has been slow to be realized there is evidence that a cognitive shift is taking place that will result in innovative changes based on learning and new conceptions of the environment.

CHAPTER 4: IMPLICATION AND CONCLUSIONS

This project began with the premise that the dominant instrumentalist approach to evaluating international regimes is facing some serious problems. The research project suggests that there remains work to be done, and I have proposed an alternative approach and evaluative criteria. While the focus of this paper has been on environmental regimes, the critiques of instrumentalism and proposal for hybrid criteria are intended to be general enough that they could be applied to almost any other type of regime. This project adds tools to our evaluative toolbox.

Chapter two provided a detailed review of prominent instrumentalist writings. Beginning with the dominant school, this approach has had a common focus on means-ends concerns regarding how well regimes did what they were designed to do. While the concerns expressed in this approach are important and meaningful, they also tend to be more superficial in nature. They are concerned with that which can be measured directly (usually quantitatively) and focus on the state and political responses. To contrast these concerns with those expressed from a more critically informed consciousness reveals that serious implications of regimes are being overlooked. The contributions from critical theory allow evaluators to question foundations, and expand the scope of study to include a broader range of actors affected by regimes. However, critical theorists are not without their issues, through their commitment to continuously question, they often leave those who studying them with few solutions.

Building on this literature review, I adopted a framework for evaluation based on the analysis of institutional change, drawing insights from sociological intuitionism, organizational analysis, and constructivism in IR. This literature suggests that institutional change occurs in terms of both *level* and *type*⁹³. The different levels are *regulative* as the most superficial, *normative*, with *cognitive* as the deepest form. Further building on insights provided by Busumtwi-Sam (2006), I argued that depending on the level at which regime changes occur, one of two types of change would result: *adaptation* or *innovation*. Cognitive changes are most likely to result in innovative change. Through cognitive shifts, foundations are questioned, new knowledge is acquired, and an appetite emerges for a complete reorientation in the way solutions are designed. By contrast, adaptation allows science or technology to address a problem, without necessarily requiring changes at the normative or cognitive level. In both of the cases presented, it has been argued that innovative change is the most desirable to achieve the environmental goals and social awareness required in each of the regimes. I would like to reiterate, that I do not intend to suggest that innovation is necessarily always the more desirable solution. Certainly cases can be offered as examples where adaptation is all that is required to reach a goal, in a sustainable manner.

The third chapter took the theory presented in chapter two and put it into practice, evaluating the ozone regime and climate change regimes. It was found that the two sets of criteria yielded divergent results. Through the instrumentalist

⁹³ See Scott (1995), Powell and DiMaggio (1991), and Busumtwi-Sam (2002, 2006).

lens the ozone regime fared very well, as it was able to meet its targets. However, the climate change regime is seen to be a failure. It has been unable to ensure compliance and the 2012 targets remain out of reach. Interestingly, when both of these regimes were evaluated in accordance with the hybrid criteria, the findings were contradictory when compared to the instrumentalist results. When evaluated based on a criteria focused on types and level of change, the ozone regime has been found to produce minimal changes. While regulation has been altered and technology adapted, harmful substances continue to be emitted into the atmosphere, and the daily practices of citizens is unaltered. The climate change regime, while slow to produce measurable results, appears to be influencing a deep cognitive shift, in which sustainability and the environment are front and centre. Through demonstrating a convergence among government, industries, and civil society, I have argued that this shift is taking place. People's way of conceiving of the environment and climate change, and the direct linkage to human activity is going through a fundamental transition. Individuals, governments, and industries are internalizing the norms resulting from this cognitive shift, and innovative solutions are emerging to address climate change. While this process is slow, I believe that it is sustainable and will result in optimal outcomes. Real change will result, in government regulation, consumer and industry focus and preferences, and a general awareness of our individual impacts.

Climate change is inherently complex and involves multiple issue areas. In order to fully address the consequences of climate change, innovative and

intersubjective solutions must emerge. Through integrating critical theory into the way we generate solutions and criteria, we are able to factor in intersubjective considerations. To focus on change allows questions to emerge that reveal the true impact of a regime and its overall contributions. To ask, 'what have the changes been?' ought to yield a more in depth analysis of regime outcomes, than to ask, 'did it do what it was made to do?'

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