

SOVEREIGNTY, AUTONOMY, AND INTERNATIONAL
ENVIRONMENTAL INTERDEPENDENCE

by

JONATHAN PATRICK KRUEGER

B.A., The University of British Columbia, 1991

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES
(Department of Political Science)

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

September 1992

© Jonathan Patrick Krueger, 1992

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Political Science

The University of British Columbia
Vancouver, Canada

Date October 8, 1992

ABSTRACT

The discipline of international relations employs two concepts - sovereignty and interdependence - as fundamental to understanding the current international system. The meaning of both sovereignty and interdependence, and their relation to each other, however, causes considerable confusion among scholars and other observers. An international system based on the sovereignty of its actors seems incompatible with the growth of international interdependencies. In particular, some observers argue that sovereignty is 'modified' or 'undermined' by the existence of international environmental interdependence, or that sovereignty is a barrier to the effective management of this interdependence. The suggested solution is to move to a post-sovereign international governing arrangement.

In international relations, sovereignty may be best understood as *constitutional independence*, the fundamental criterion required for a territorially based entity (a state) to become a member in the international community. That is, to be considered sovereign, a state's constitution must not be part of a larger constitutional arrangement. Sovereignty should not be confused with *autonomy*, or freedom of action in the international system. While states are extremely protective of their sovereignty, both in rhetoric and in practice, they are willing to sacrifice various measures of autonomy through binding international agreements (such as the Montreal Protocol) to achieve goals which are important to them, or are considered greater global goals (such as environmental protection), which could not be achieved by unilateral action.

The proposition that the sovereignty of the state is undermined or modified by international environmental interdependence, or is a barrier to the effective management of that interdependence, suffers from two defects: first, a failure to distinguish between sovereignty and autonomy; and second, a failure to identify precisely and accurately the impacts of environmental interdependencies. Despite the fact that many international environmental problems (such as air pollution, depletion of the ozone layer, and climate change) are global in scope, and that their solutions require international cooperation, the arguments about the current plight of the sovereignty of the state made by many observers are unwarranted. The existence of international environmental interdependence and the conclusion of international environmental agreements does not weaken, modify, or make obsolete the sovereignty of the state. Nor is sovereignty a barrier to obtaining multilateral regulation. Since state sovereignty is not at risk, and since solutions to serious global environmental problems are possible through the restriction of state autonomy, the prescription for a post-sovereign international governing arrangement due to international environmental interdependence is unfounded.

Sovereignty remains, currently and for the foreseeable future, the central concept around which the international system is organized. Furthermore, it is not the barrier to cooperation that some observers would have us believe. Perhaps a clearer understanding of these concepts would not only enlighten observers and statespeople, but lead to improved, and more

expeditious, cooperation on environmental issues of global importance.

CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGEMENT.....	vi
Chapter	
1. INTRODUCTION: THE SOURCE OF THE CONFUSION.....	1
2. CLARIFYING THE CONFUSION: DISTINGUISHING BETWEEN SOVEREIGNTY AND AUTONOMY.....	7
Sovereignty.....	7
Autonomy.....	13
Interdependence.....	15
3. THE MANIFEST CONFUSION: SOVEREIGNTY, AUTONOMY, AND INTERNATIONAL ENVIRONMENTAL INTERDEPENDENCE.....	20
4. SUBSTANTIATING THE DISTINCTION: EVIDENCE OF RESTRICTED AUTONOMY AND CONTINUED SOVEREIGNTY IN RHETORIC AND IN PRACTICE.....	32
Do as We Do, Not as We Say?.....	34
What to Do? Case One: The Partial Test Ban Treaty (1963).....	38
Case Two: The ECE Convention on Long Range Transboundary Air Pollution (LRTAP) and the Protocols on SO ₂ and NO _x (1979, 1985, 1988)..	40
Case Three: The Montreal Protocol and the London Amendments (1987, 1990).....	44
5. CLIMATE CHANGE AND THE 1992 UNCED: THE FUTURE OF INTERNATIONAL ENVIRONMENTAL REGULATION?.....	49
6. CONCLUSIONS.....	59
NOTES.....	65
BIBLIOGRAPHY.....	80

ACKNOWLEDGEMENT

After twelve months of study there are more than a few people to whom I am grateful for various forms of support. My first thanks go to all those, too many in name, who challenged and encouraged me in various ways throughout the year to pursue the many interesting and important avenues of inquiry that our discipline offers. For comments on this paper, I'd like to thank Professors Bob Jackson, Brian Job, and especially Don Munton. Responsibility for the content and any errors therein, of course, remains with the author. My deepest gratitude is reserved for my mother and father, whose support and encouragement provided the foundation for any of the accomplishments which I realized this year.

CHAPTER 1

INTRODUCTION: THE SOURCE OF THE CONFUSION

Two of the most fundamental concepts to the study of international relations are 'sovereignty' and 'interdependence'. Many observers currently argue that the sovereignty of the state is undermined by the interdependence of the modern world and that it is a barrier to effective management of global interdependencies. International environmental problems, in particular, are sometimes seen as textbook examples of interdependencies which challenge the notion of state sovereignty. What exactly the 'interdependent' nature of international and transboundary environmental problems refers to, and how this affects 'sovereignty', is less clear than it may appear on the surface however.

Neither term, unfortunately, lends itself easily to clear definition and both are the source of much confusion and controversy within the discipline. This is truer than ever in the 1990s when the pace of change and the sheer volume of transactions between states has created new challenges for the terms sovereignty and interdependence. Furthermore, many observers are often less than precise in their usage of 'sovereignty' and 'interdependence', not to mention that, for reasons which will be discussed later, states are particularly quick to guard their interests by encapsulating them in the sacrosanct language of 'sovereignty'. It is appropriate, then, to undertake a critical examination of these fundamental concepts of international relations, and their interaction, at a time when new and important phenomena - such as international environmental

interdependence - appear to challenge traditional interpretations.

The current awareness of international environmental problems, when viewed against the history of the nation-state, is quite a recent phenomenon. Many observers argue that the transboundary, or international, character of these problems (such as acid precipitation, atmospheric pollution, depletion of the ozone layer, and climate change) is partially or fundamentally at odds with the concept of the 'sovereign' nation-state. The conclusion of this argument is that in a world divided into sovereign states which co-exist with the fundamentally global nature of environmental interdependence, sovereignty not only is undermined by these interdependencies, but is a barrier to their effective management. It is prudent to ask, however, if these propositions are sound individually, and more importantly, to determine if they are together defensible explanations of the current state of modern international environmental relations. Do global problems such as depletion of the ozone layer undermine the *sovereignty* of the state? What evidence is there to support the assertion that *sovereignty* must be modified because it is (presumably) a barrier to international cooperation?

It could be argued that it is not in fact the sovereignty of the state that is at risk. When the international community confronts the issues of atmospheric pollution and international environmental degradation, and recognizes the need for multilateral solutions, however, a key feature of the sovereign state *is* greatly affected. It is the freedom of action, or

autonomy that states have in the international system that is reduced. This may seem as so much hair-splitting between definitions to some, but such is not the case. It is particularly important to be precise when dealing with the meaning of such fundamental concepts to the study of international relations as sovereignty and interdependence and their relationship to important global environmental problems. As Robert Keohane has argued, "[though] definitions are not interesting in themselves...they may...lead to the identification of more or less tractable problems."¹ The confusion resulting from the misconception of equating the loss of state autonomy with a loss of state sovereignty can only lead to inaccurate assumptions and unwarranted prescriptions.

For example, there are some observers who argue that the sovereign nation-state system (that is, a system based on the sovereignty of its individual actors) is undermined by international environmental problems and thus must proceed to some other form of international political organization. Such an assertion is quite simply misleading. As this paper intends to show, the sovereignty of the nation-state is not undermined by international environmental degradation or the attempts to address these problems effectively, nor is sovereignty an insurmountable barrier to cooperation. The call for a change in the structure of the international system is therefore inappropriately based upon an inaccurate assumption. Furthermore, it is not at all assured that any other type of universal political order would be able to deal effectively with these problems.²

It is also inappropriate, it will be argued, to accept some form of pure neo-realist thought which asserts that sovereign states will not seek to cooperate on mutual regulation to achieve "low" political goals such as international environmental protection.³ States can and do seek to cooperate to achieve such goals. Nor is it necessary to 'reify' sovereignty as an ahistorical reality which exists independently of human action and history when asserting the continued sovereignty of states.⁴ As Robert Jackson has argued, "[s]overeign statehood...is only one of several kinds of international status which have existed historically. Today [however] it is virtually the only kind."⁵ Similarly, another scholar has noted that "[t]here is nothing sanctified about the idea of sovereignty. The world has got along without it in times past, and in theory it could do so again."⁶

What an examination of the attempts by states to regulate international environmental problems reveals is that sovereignty remains, currently and for the foreseeable future, the central concept around which the international system is organized. Equally important, evidence also shows that solutions to these international environmental problems are within reach of a system of 'sovereign' states, as their sovereignty is not undermined by the problems, nor is it a barrier to solutions. State *autonomy*, on the other hand, is reduced - usually through binding international agreements - when solutions to global environmental problems are sought and enacted. As one observer has stated, "it is no longer accurate to conceptualize states as having their traditional degree of autonomy" as they are willing to "tradeoff" autonomy to achieve other goals.⁷ The result, in turn, of this

restriction of autonomy could be at the least, effective solutions to some global problems such as the environment, or, at most, higher levels of international governance. Thus, if students of international relations are going to analyze, usefully, the way the international community deals with these very serious problems, more discriminating observations will be required.

It is the purpose of this paper to show that in meeting the challenge of international environmental interdependence, it is the autonomy of the state that is sacrificed and not what is broadly (mis)termed 'sovereignty'. The distinction is important because while states hold sovereignty as inviolable, especially in rhetoric, these same states have always and more easily accepted limitations on their autonomy. This observation remains true in the case of international environmental interdependence. As a result, the argument, whether made by states or by analysts, that sovereignty is undermined by environmental interdependence and is a barrier to its effective management is inaccurate.

The first section of the paper will develop definitions of sovereignty, autonomy, and interdependence to provide some distinctions and a useful basis for discussion of this issue. The second section will discuss the confusion between sovereignty and autonomy as it manifests itself in some of the current international relations and environment literature, and show why it is in fact autonomy, not sovereignty, that is at issue. The third section will consider both state rhetoric with regards to the impact of environmental interdependencies on their sovereignty and autonomy, and also state practice as they have

sought to manage these important problems. The discussion of state practice will be in the form of an examination of three selected case studies in environmental regulation to determine if there is any empirical substantiation for the claim that states are willing to trade off autonomy through multilateral regulation to achieve international environmental protection. The last section will consider the most recent international effort at managing an environmental problem: the Framework Climate Change Convention of 1992. On the strength of this case and the previous case studies of chapter four, it will be concluded that the future of international environmental protection is hopeful as sovereign states continue to sacrifice autonomy in various measures through international regulation.

CHAPTER 2

CLARIFYING THE CONFUSION: DISTINGUISHING BETWEEN SOVEREIGNTY
AND AUTONOMY

The concept of sovereignty is generally regarded as the core or constitutive organizing principle of the international system.⁸ There is hardly unanimity about what sovereignty actually means, however, and thus Stephen Krasner for one argues that "sovereignty...has lost meaning and analytic relevance".⁹ If the thesis of this paper is going to be proven correct and significant, then clear definitions and explanations - the task of academic students of international relations - is also the task of this chapter.

Sovereignty

The conventional interpretation of sovereignty, that made by F.H. Hinsley and many others, argues that the term sovereignty originally and for a long time "expressed the idea that there is a final and absolute authority *in* the political community".¹⁰ Applied to the problems which arise in the relations between political communities, however, sovereignty expresses the antithesis of this argument. That is, the principle that *outside* a given political community, or state, no supreme authority exists.¹¹ Indeed, it was suggested as early as 1577 by Jean Bodin in his *Six livres de la Republique* that there are both 'internal' and 'external' aspects to sovereignty, though the external aspect became important only after the rise of the nation-state in the 16th and 17th centuries when it became vital to examine the relationship between states and sovereigns.¹²

Any first year student of international politics will recite that the Peace of Westphalia of 1648 formally acknowledged the basic principles that underlie the relations between all states to this day, the most important of which is sovereignty.¹³ The key corollaries of the sovereignty of states in the international system are clear: firstly, that subnational units have no legal standing abroad; secondly, that no state has the right to interfere in the domestic affairs of another state; and thirdly, that all states are formally equal.¹⁴

What is the fundamental feature of the sovereign state that gives it its sovereignty? In the modern international system, that feature is *constitutional independence*. As C.A.W. Manning and Alan James have argued, a state is sovereign if its constitution is not part of a larger constitutional arrangement.¹⁵ Sovereignty, or constitutional independence, is the fundamental prerequisite to obtaining the power of independent decision, and thus becoming a member in the international community. While a state's status as sovereign or non-sovereign depends on its constitutional situation, a state must also meet the factual requirements of statehood, the most important of which is territoriality (systematic administrative control over people living within a well-defined territory).¹⁶

Once a territorial entity has achieved constitutional independence, the political act of recognition by like entities acknowledges that a new sovereign state has entered the community of nations and that recognizing states are ready to enter into relations with the recognized state. The process of recognizing entities as sovereign is not automatic, however; states follow

political convenience and commercial considerations, as well as law, in deciding which entities to regard as sovereign.¹⁷ While the status of a state's borders (or other attributes, such as its internal policies) may play a role in the *recognition* of that entity, the character of sovereignty itself rests on constitutional independence. A state exists regardless of whether it has been recognized by other states.¹⁸ Sovereignty - or constitutional independence - is the key property which must be possessed by a territorial entity before it can be accepted as a sovereign member of the international community.¹⁹

Sovereignty, or constitutional independence, has three fundamental characteristics. Sovereignty is legal, absolute, and unitary.²⁰ These characteristics should not to be confused with what Robert Jackson has termed the "constitutive rules of the sovereignty game", or those elements which are the corollaries of sovereignty such as legal equality, mutual recognition, and non-intervention, as noted above.²¹ Each characteristic requires greater discussion, however.

That sovereignty is a legal condition, or status, is widely accepted, though sometimes overlooked. As Robert Keohane notes, "[s]overeignty refers to a legal status, a property of an organized entity in world politics".²² To say that sovereignty is based on law, and not on physical characteristics such as size of population or extent of natural resources, is an extremely important point in terms of understanding this paper. As Alan James explains:

To achieve this condition [sovereignty] a state does not have to meet criteria relating to such matters as the number of people it contains, the extent of its territory, the fire-power of its armed forces, the

value of its natural resources, or the amount of its gross national product. What it has to do is to satisfy a specific requirement of a legal nature. It has to show that, in terms of constitutional law, it has no superior, that there is no other state to whose constitutional set-up the first state is subordinate.²³

Sovereignty stems from a constitutional position which results in Tuvalu, an island-state of 9000 people, being regarded as a sovereign entity in the international system while denying this status to the 14-million individuals that make up the state of Texas. Tuvalu is, in terms of its constitutional law, an independent entity, whereas Texas is a part of the wider constitutional arrangement of the United States. Constitutional independence is what states themselves treat as the content of sovereignty.²⁴ That is, a state must be constitutionally independent before it can be accepted by the international community as sovereign member. That condition is fulfilled by Tuvalu but not by Texas.

The second characteristic of sovereignty, or constitutional independence, is that it is an absolute condition, that is, it is either present or absent. When someone is appointed Professor of Political Science, the position is held absolutely; there is no question of relativism, of being '70 percent professor'. The individual concerned is a professor, and the department lecturer is not. The office is held absolutely; the condition of professorship is either present or absent.²⁵ Unfortunately, 'absoluteness' is perhaps the most contentious of the elements as it is usually interpreted to mean that the sovereign state can have its way, without restraints, in its activities. Thus, many feel that sovereignty is morally questionable on this basis, equating sovereignty with a Hobbesian state of absolute coercive

power.²⁶ Such an interpretation, however, is a gross misunderstanding of the absoluteness of sovereignty. Being sovereign has never meant being above all rules of behaviour; it is not a question of sheer power.²⁷

Sovereignty as an absolute condition means that it does not exist in degrees. Indeed, it would seem difficult to attempt to understand sovereignty in relative terms. How would one measure whether state X is more or less sovereign than state Y? And how can this then be posited as the constitutive organizing principle of the international system when one is constantly re-evaluating the degree to which certain units are or are not sovereign? It certainly seems much more reasonable, and it has also been the practice of states in international relations, to view sovereignty in the international system as an absolute condition which derives from the constitutional independence of its units.²⁸ As will be noted below, however, there is nothing inconsistent with asserting absolute sovereignty while being open to the normal pressures and opportunities of international life.

The third and last characteristic of sovereignty is that it is a unitary condition. When properly understood as constitutional independence, the basic qualification for membership in the international community, it becomes clear that sovereignty is all of a piece. As James argues:

The control of both internal and external policy, therefore, flows from the same source: constitutional independence, or sovereignty. By virtue of this condition a state can decide what to do in respect of matters which take place within its own frontiers just as it can decide what line to take regarding events which occur beyond them...Thus the internal and external aspects of sovereignty are inextricably bound up with each other. The one goes along with the other,

and the absence of one means that the other is absent too.²⁹

The unitary characteristic of sovereignty clarifies the more conventional definitions of sovereignty discussed above which differentiated between 'internal' and 'external' sovereignty. The definitions of internal and external sovereignty, the differences between them, and the confusion they engender by suggesting that sovereignty has two separate meanings, seem less relevant when the internal and external aspects of the nation-state are understood to stem from a *single* condition. Internal and external sovereignty are simply two sides of the coin that is constitutional independence.

Two brief examples will serve to substantiate the case for sovereignty as constitutional independence. A first example, the transformation of the Solomon Islands and Tuvalu from non-sovereign territorial entities (British protectorates) into sovereign states, is used by James to demonstrate the importance of constitutional independence. What transformed these islands from non-sovereign entities - part of the British constitutional set-up - to ones possessing sovereignty was a change in their constitutional situation. That is, their constitution became independent from that of the United Kingdom. The result is that the Solomon Islands and Tuvalu acquired the essential feature needed for acceptance into the international community - sovereignty. Their new sovereign status was recognized by other states and so these new states took their place on the international stage, with all of its derivative opportunities and responsibilities:

[I]n international relations [as well as in domestic policies] it is now up to both states to decide what

they wish to do. That is not to say that they, any more than any other, have legal freedom to do what they like. They have obligations under international law, just as they have rights, and they may add to both by treaty. But decisions regarding their international situation are now theirs alone.³⁰

A second example which supports this definition is that of sovereignty for Quebec. Although it is clear to most that a sovereign Quebec may not be the most autonomous state in terms of economics or security, it is also clear that the sovereignty sought by separatists is defined in terms of *constitutional independence* from Canada. Such independence would then assure Quebec the status of a sovereign state. Nothing less than constitutional independence would qualify Quebec as a sovereign state.³¹ Recognition by others of Quebec's new status would clear the way for its participation in the international community as a *sovereign* member.

Autonomy

The sovereign state, as indicated above, is not isolated. It is open to the pressures and opportunities of international life. It seeks to achieve various goals such as wealth, security, and more recently, international environmental protection. If sovereignty is the fundamental pre-condition for a state to obtain the power of independent decision in the international community, and thus membership, then autonomy is the condition which represents the ability, or freedom of action, that states have in the international system to carry out objectives. Several observers of international relations, such as Oran Young, and Robert Keohane and Joseph Nye, have acknowledged this principle.³² Richard Cooper in his 1968

examination of economic interdependence among the Atlantic community argued that:

National *autonomy*, as used here to mean the ability to frame and carry out objectives of domestic...policy which may diverge widely from those of other countries, should not be confused with the notion of *sovereignty*, which represents the formal ability of countries...to make their own decisions - and to renounce decisions previously made - but not necessarily to achieve their objectives.³³

In addition to widening Cooper's definition of autonomy to include the ability to carry out objectives of external as well as domestic policies, K.J Holsti notes that while sovereignty provides the *legal basis* for autonomy, sovereignty does not reduce the constraints that operate on states as they seek to secure or maximize their goals.³⁴ Indeed, as Holsti argues, "it appears that other values...cannot be maximized or achieved except by voluntarily relinquishing complete freedom of action".³⁵ This does not mean *completely* relinquishing autonomy, but relinquishing *some* of that *total* freedom of action. In contrast, the principle of sovereignty cannot be undermined by anything that is external to the state, except the voluntary or forceful subjugation to another state's constitution which would effectively result in that state ceasing to exist. The 'survival' rate for states in this respect, however, has been extremely high since 1945.³⁶

Sovereignty is a qualitative concept; it is either present or absent. Autonomy, on the other hand, is not a matter of status, but of abilities or freedoms. It can be present in greater or lesser quantities, and be sacrificed, eroded, enhanced, or exercised without detriment to sovereignty. Autonomy is a quantitative concept.

Interdependence

Many observers contend that the dynamics of the international system are not the same as they were in 1648 or even 1968, largely due to the relatively recent rise of economic, social, and environmental interdependencies which, in turn, resulted from the development of transportation and communications technology and the 'internationalization' of many spheres of human interaction. It is also generally considered that the level of interdependence in the international system has increased, especially since 1945.³⁷ The result, they argue, is that the principle of sovereignty is at odds with the reality of interdependence in the modern world.

Interdependence as a concept refers to "the extent to which events occurring in any given part or within any given component unit of a world system affect (either physically or perceptually) events taking place in each of the other parts or component units of the system".³⁸ The conceptual inverse of interdependence is effective autonomy, not sovereignty.³⁹ A non-interdependent state system, for example, could still be based on the sovereignty of its units, the actions of these units would simply have little effect on the others. As the level of interdependence grows, the level of effective autonomy, or freedom of action, may be, and is often, reduced.⁴⁰ This is particularly true, as will be discussed in chapters four and five, of international environmental interdependence. Autonomy can be reduced by interdependence in three ways. First, an interdependent relationship which limits the choice of actions which a state can take reduces autonomy; second, autonomy can be reduced voluntarily when a state signs a binding multilateral

agreement which explicitly limits certain activities; and thirdly, it can be reduced by a state ceding to another body (such as a UN organization) the freedom to monitor and enforce compliance with multilateral agreements. The existence of environmental interdependence has led to the first two kinds of autonomy restriction thus far (see p. 19 and chapters four and five).

Also worthy of note is that, as a quantitative concept, autonomy can be enhanced as well as reduced. This is especially true in a case where a multilateral agreement is signed preventing certain activities. While the freedom to undertake certain activities (eg. pollution emission) has been restricted, it could also be argued that the result of restricting autonomy in this area enhances the autonomy of a state in another area (eg. the greater goal of environmental protection). For example, an environmental agreement which stops or reduces the harmful emissions coming from another state increases the ability, or autonomy, of the recipient state to protect its environment.⁴¹

Regrettably, the significant effect of interdependence on autonomy is not always clearly stated, and often overlooked. Many observers, cited in chapter three, mistake the effect that interdependence has on state autonomy for an effect that it does not have on state sovereignty. As Oran Young notes:

The conceptual implications of the state-centric world view often obscure discussions of interdependencies in world systems. Above all, the formal independence and equality implied in the doctrine of sovereignty tend to *become confused* with effective autonomy. And since it is difficult to square the constraints placed on states by the operation of systemic interdependencies with the imagery of state sovereignty, limitations on autonomy in interdependent world systems are often simply

ignored in rhetorical affirmations of the formal prerogatives of sovereign states.⁴²

For international relations, global environmental issues - such as depletion of the ozone layer and climate change for example - present classic cases of *interdependence*. That is, the actions of one state (such as the production and consumption of CFCs) affect many, or all, other states in the system (through depletion of the ozone layer), just as that state is affected by the actions of the others (the degree of the depletion is exacerbated by the wide-spread use of CFCs by other states). The riveting feature of environmental interdependence is that there is virtually no way to avoid the impacts of these actions because they affect the fundamental environment upon which all states depend.⁴³ In one sense, then, the relationship between human beings and the environment is one of *dependence*. On a global scale, humanity is completely dependent upon the environment to sustain life. There are no viable alternatives.⁴⁴ The relationship between states with respect to global environmental problems, though, is not only a classic case of *interdependence*, but also an especially serious one involving, arguably, the continuation of life on earth as we know it.

What needs to be understood is that sovereignty and autonomy are conceptually different, and that interdependence, environmental or otherwise, does not affect state sovereignty.

As Alan James argues:

No matter how far this process [of interdependence] has gone, it cannot by itself have any influence upon a state's constitutional independence, or sovereignty. It may be of vast significance for a state's political life and future, in that the state may be much more restricted than hitherto - although it may also on account of the same process be much better off. But

interdependence cannot infiltrate a state's sovereignty...45

To argue that interdependence modifies or undermines the principle of sovereignty is to commit what is termed a 'category mistake'. As Robert Jackson has understood, "constitutional independence differs categorically from physical separation [as] colonial status is not the same as economic dependency. Sovereign states are legally but not necessarily physically insular and today most of them are...interdependent".46 That is, in an interdependent international system, a physical condition cannot affect a legal status. The discipline of international relations is particularly vulnerable to the problem of category mistakes, due to the wide range of sub-fields - and their subsequent vocabularies and conceptualizations - which it incorporates; it should, therefore, be especially aware of inviting such conceptual confusion.47 Unfortunately, this is not always the case, as will be demonstrated in chapter three.

Others have been forthright in their condemnation of making such 'category mistakes' with regard to sovereignty and interdependence. Dennis Kavanagh, for example, states that:

[M]uch of the discussion about the decline or loss of sovereignty is ill-informed and highly speculative... Discussions of such features as the interdependence of states, the growth of international actors like multinational corporations, and the crude projection of recent socio-economic trends all too easily elide into a statement of the erosion of a carelessly or ill-defined concept of sovereignty.48

Kavanagh goes on to note, however, that "the autonomy of governments has been limited".49 Such a limitation or erosion of autonomy as a result of interdependencies would entail limiting the actual freedom of action that states have on a given issue; with regards to the environment, the concept of autonomy is made

somewhat more complicated. After all, effective autonomy is easier to maintain when "the boundaries of states mark qualitative shifts in the nature of human activity than in those where effective boundaries vary and there are intrusions of external influences".⁵⁰ Environmental problems, of course, are of the latter type, as the by-product of human activity - pollution - fails to respect state boundaries and 'intrudes' on others. As a result, environmental interdependence poses a major challenge to maintaining effective state autonomy.

On the other hand, an elimination of sovereignty (as it is a condition either held or not held absolutely) at the international level would mean the incorporation of previously sovereign states into a wider, and likely global, constitutional arrangement. Only the elimination of the independent authority of the state to make decisions (or the principle that there is a decision-making authority higher than the state) can eliminate a sovereign state. Such an elimination of sovereign status cannot be accomplished by the mere existence of interdependence.

Later chapters will give evidence that states can in fact cooperate to manage global environmental interdependencies, as these interdependencies are serious concerns. What is *actually taking place* is an erosion of the autonomy of virtually all the states in the world by the placing of constraints on their freedom of action (usually through treaties such as the Montreal Protocol).⁵¹ The immediate concern, however, is to substantiate the claim that some scholars are guilty of confusing these issues.

CHAPTER 3

THE MANIFEST CONFUSION: SOVEREIGNTY, AUTONOMY, AND INTERNATIONAL ENVIRONMENTAL INTERDEPENDENCE

The preceding chapter sought to clarify the concepts of autonomy and sovereignty and show that though related, they are distinct conceptually as well as distinct in practice. Additionally, interdependence was argued to be a challenge to state autonomy, though it does not affect state sovereignty. Unfortunately, this distinction is either lost upon, or purposefully overlooked by, many of the current observers of the international system when the problem of international environmental degradation is discussed. Many, first of all, fail to distinguish between autonomy and sovereignty. Second, they fail to identify explicitly the impacts of international environmental interdependence on the state. They fail to show that *sovereignty* is affected.

Consider, for example, the work of Jessica Tuchman Mathews. In her 1989 *Foreign Affairs* article on "Redefining Security" and in the (edited) 1991 volume, Preserving the Global Environment, Mathews is guilty of the conceptual confusion made by several observers.⁵² She argues that the post-postwar era is characterized by, *inter alia*, "diverse invasions of sovereignty", and that:

The nature of national sovereignty is changing. The global environmental trends...all pose potentially serious losses to national economies, are immune to solution by one or a few countries, and render geographic borders irrelevant. By definition, then, they pose a major challenge to national sovereignty.⁵³

Similarly, David Newsom asserts that "because the solutions to the problems of the environment must be global, they will present

an unprecedented challenge to concepts of national sovereignty".⁵⁴

Consider also the argument of Marvin Soroos. He begins by stating that "pollution is a problem that must be dealt with internationally because air currents and river systems carrying harmful substances move unimpeded across international frontiers from one country to another". He then jumps to the conclusion, however, that "states will not be willing to compromise their sovereignty to the degree necessary" to deal with this type of problem.⁵⁵ This analysis is echoed in the authoritative and popular World Commission on Environment and Development report (WCED), Our Common Future. In their report, the WCED argues that:

...the idea of national sovereignty has been fundamentally modified by the fact of interdependence in the realm of economics, environment, and security... The nation-state is insufficient to deal with threats to shared ecosystems.⁵⁶

All of these critics share one of two similar problematic propositions. Firstly, there is the argument of Mathews and Newsom, and also that of the WCED, that in an environmentally interdependent world the concept of sovereignty is challenged, and perhaps made obsolete altogether. Secondly, there is the proposition of Soroos and the WCED that sovereignty is a barrier to, or at least insufficient to manage, solutions to these problems, presumably because it minimizes or prevents the effective multilateral cooperation needed to achieve solutions. If either of these propositions were true, then the prescription for a post-sovereign system (likely one which is organized around a single global authority), implied by these arguments and

discussed at length by Richard Falk in his important book, This Endangered Planet, would be warranted.⁵⁷ As Stephen Krasner has noted, "the alternative to sovereignty is either a world in which there are no clear boundaries [eg. an empire] or a world in which there is no final authority within a given territory [eg. a feudal system]".⁵⁸ However, if global environmental problems are shown *not* to be antithetical to the concept of sovereignty and sovereign states can deal effectively with these problems, then both the premise and prescription of such critics are unfounded.

Consider first the proposition that sovereignty is changed or modified due to global environmental interdependencies. It is certainly true that the interdependent nature of many environmental problems will affect states, though it is not clear that it is the *sovereignty* of the state that is affected. Depletion of the ozone layer, for example, will affect virtually all states (although in varying degrees), since all states exist below it.⁵⁹ However, to assert that sovereignty is undermined as a result of this interdependence is to misunderstand the nature of sovereignty when it is properly understood as constitutional independence. It is categorically impossible for a physical reality to affect a state's (legal) sovereign status. In other words, sovereignty cannot be challenged, undermined, or modified by the mere existence of pollution that does not respect borders.⁶⁰ This does not mean that the problems of transboundary air pollution or depletion of ozone layer are not important concerns for the state, for they certainly are. As a result, states seek solutions to deal with international environmental degradation.

The second proposition, though, is just as problematic. Because environmental problems, and therefore the solutions thereto, are international in character, it is argued that state sovereignty is somehow a barrier to obtaining these solutions. Depletion of the ozone layer, for example, is a problem which is beyond the capability of any individual state to solve, for unless many or all states cease producing and consuming CFCs and halons, the ozone layer will continue to be destroyed by these chemicals regardless of what country they came from. However, as will be shown in chapter four, states are willing to take cooperative action as it is not sovereignty, but autonomy which must be restricted through multilateral regulation to achieve environmental protection. As states choose to involve themselves in agreements to solve international environmental problems and impose mutual restrictions on state behaviour, they choose to trade off autonomy, or freedom of action, to achieve the goal of environmental protection.

The state, as the supreme constitutionally independent authority, agrees to a course of action which impinges on its activities and on the activities of all other states involving themselves in the solution. The evidence presented below (see chapter four), for example, supports the argument that the state, while continuing to have the formal ability to choose freely (such as to continue policies of CFC use or to sign an international environmental agreement) has exchanged or limited the actual ability to carry out policies (such as the production or consumption of CFCs) for a goal that is important to it, or is considered a greater global goal (protection of the ozone layer),

that is not achievable in any other way. Sovereignty is not a barrier to this process. The state remains constitutionally independent after the agreement, though its freedom to carry out activities (its autonomy) has been restricted.

Both the assertions that sovereignty is undermined by global environmental problems and that it is a barrier to their solution - and the prescriptions that the world must therefore move beyond the sovereign state system - are flawed because they misunderstand the nature of sovereignty and fail to recognize autonomy as the condition at stake, a condition which states will willingly, although perhaps grudgingly, restrict to achieve international environmental regulation. Though it is invoked by both observers and state leaders - for different reasons - as being at stake (see below), sovereignty is not undermined by environmental interdependence, nor is it a barrier to cooperative international action to manage that interdependence.

Other analysts are also guilty of confusing the sovereignty-autonomy issue, usually because of an ill-formed definition of sovereignty, or because it is not defined clearly at all.⁶¹ Mathews attempts to correct this oversight by arguing that '*by definition, global environmental trends pose a major challenge to national sovereignty*'. What is being defined as '*national sovereignty*', however, is not that which states consider sovereignty to be, that is, the fundamental property needed by a territorial entity to join a community of other sovereign states - constitutional independence. Mathews' unclear definition of national sovereignty apparently includes the environmental trends that pose losses to economies, are immune to unilateral

solutions, and render geographic borders 'irrelevant'. As shown in chapter two, sovereignty is not understood by any of these criteria. National sovereignty, defined as constitutional independence which is the formal ability to make (authoritative) decisions and the essential criteria for membership in the international community, is not challenged by the economic and other difficulties resulting from environmental change, nor does it preclude solutions by more than one country. Geographic borders, furthermore, are 'irrelevant' only to the pollution and not to the possible ways of finding cooperative solutions, which Mathews would, correctly, like to encourage. The confusion of many of these observers "lies in identifying the sovereignty of states with their ability to do as they wish".⁶²

National autonomy, on the other hand, defined as the ability to carry out various objectives, is at stake in the solutions needed for economic problems and environmental protection. Many of these problems require states to sacrifice, to greater or lesser degrees, their ability to carry on certain activities. Unfortunately, it would seem that Mathews' 'post-postwar era' is also characterized by 'diverse definitions of sovereignty', most of which misrepresent the fundamental character of sovereignty and ignore the important role of autonomy.

Additionally, the suggestion by the WCED that the state is no longer able to deal effectively with these international environmental problems is written in the context of calling for 'joint management' of these problems (presumably by states!).⁶³ This contradiction serves to confuse the issue further. One is left with the impression that it is the inherent quality of

sovereignty which precludes effective action. Sovereignty has not clearly been defined, yet is suggested to preclude effective action and cooperation on the environment. More accurately, it is the purely autonomous nation-state (the state that desires and is able to carry out its objectives without being influenced by or needing to involve itself with others), not the sovereign nation-state, which is likely to be a barrier to dealing with these problems. Such a high degree of autonomy, as discussed in chapter two, is unlikely to exist in the interdependent international system of the 1990s. Global environmental interdependence, in particular, makes it extremely difficult to maintain complete and effective autonomy.

It is also worthy of note that many of those who argue that sovereignty is reduced or challenged by international environmental problems also argue that 'national security' must be reformulated or redefined in this era of environmental interdependence.⁶⁴ There seems to be something strangely inconsistent about simultaneously arguing the reduction or restriction of sovereignty due to environmental problems and for a newly defined notion of 'national security' that encompasses resource and environmental threats. Perhaps this confusion results, again, from a broad and undefined use of 'sovereignty'. How easily does the diminution or extermination of state sovereignty co-exist with a new national security mindset? More importantly, however, is this 'new thinking' going to result in successful management of these international problems?⁶⁵

These inconsistencies are not only representative of the confusion over the nature of sovereignty, interdependence, and

autonomy, but are unlikely to prove useful in the successful resolution of these problems. Being clear about the nature of both state sovereignty and state autonomy, however, and understanding that autonomy can be and is sacrificed to achieve other goals, will be a more fruitful way to approach the issue of international environmental interdependence. Since the argument for drastic change to the sovereignty of states in the international system is based on a faulty premise - that sovereignty is undermined by environmental interdependencies or is a barrier to their management - then effort would be better spent on further examination and explication of how solutions can be improved or expedited given existing conditions. That is, sovereign states are willing to sacrifice some of that autonomy to "deal" with the threats to the international environment; they have shown, not surprisingly, no interest in establishing a non-state system and bringing an end to sovereign statehood.

Not all observers of international relations and global environmental problems are as comfortable as those cited above about stating the degree to which the sovereignty of the state is modified by these global problems. Though the differentiation between sovereignty and autonomy is still not always made explicit, an attentive reading of their discussion suggests a similar interpretation to the one which is made in this paper.

Lynton Caldwell has written extensively on international environmental issues since 1972, including his widely read and cited book, International Environmental Diplomacy. Caldwell argues that the "defacto sovereignty of the 'sovereign national state' is being modified".⁶⁶ He seems uncomfortable with his

definition of sovereignty as he refers to the *defacto* sovereignty of the state, as if *de facto* sovereignty is somehow different from *sovereignty* simply stated.⁶⁷ This uncertain use of sovereignty could be improved by making the definition of sovereignty clear and explicit, while differentiating it from autonomy. Such a distinction would add greater clarity and force to Caldwell's arguments. Unfortunately, other than the passages above, Caldwell does not address this issue directly.

Another passage is more instructive in its analysis about the differences between sovereignty and freedom of action:

Rhetorical assertions of national sovereignty continue to be heard, but the imperatives of geophysical hazards to all nations are pushing their governments toward modification of their asserted freedom to act as they please in relation to...the environment.⁶⁸

Here, Caldwell distinguishes between the assertion of national sovereignty (the importance of the "rhetorical" aspect will be addressed below) and the states' "freedom to act", or autonomy. Secondly, Caldwell also argues that international environmental problems ("geophysical hazards to all nations") will lead states to modify or restrict their autonomy. For example, states may sign treaties to manage depletion of the ozone layer which restrict their ability to produce or consume CFCs. These nations, it will be argued, remain as sovereign as they were before they signed the Montreal Protocol. It is clear, though, that Caldwell's discussion of the issues is not the same as those who argued without qualification that sovereignty and international environmental problems are not compatible.

Another example of an observer who treads lightly when discussing sovereignty and the environment is Maurice Strong, who

was Secretary-General of the landmark Stockholm conference and the recent UNCED in Rio. It would appear that Strong is less convinced than some of those quoted above about the demise of sovereignty due to the rise of global environmental problems. It is worth quoting him at length. Strong's perceptive argument is that:

[T]he development of new international machinery to deal with the complex problems of an increasingly inter-dependent technological civilization will not come about through the surrender of sovereignty by national governments but only by the purposeful exercise of that sovereignty. It is only when nations find themselves incapable of exercising their sovereignty effectively or advantageously on a unilateral basis that they will agree - reluctantly - to exercise it collectively by agreement with other nations. It is seldom that nations enter into arrangements which restrict their ability to exercise their sovereignty until circumstances compel them to do so.⁶⁹

This argument for 'merged sovereignty', as Strong terms it, is instructive for several reasons. Firstly, Strong correctly notes that solutions will not come about through the surrender of sovereignty, because nations will seldom enter into arrangements which restrict their *sovereignty*. Secondly, and this is important for purposes of this paper, it is more than plausible that Strong, by suggesting his idea of a collectively exercised or 'merged' sovereignty, understands that what is involved is the restriction of autonomy and not the demise of sovereignty. Indeed, Lynton Caldwell believes that "Strong has interpreted...sovereignty in a positive and innovative manner."⁷⁰

Given Strong's position as the chair of two important world conferences on the environment, and his experience in trying to achieve solutions and gain cooperation from so many separate states, perhaps it is not surprising that he assumes the

continued existence of sovereignty. In fact, he explicitly argues that "there is no need for a renunciation of, or a wholesale retreat from, this principle [of sovereignty]".⁷¹ He certainly recognizes how states react when faced with situations that are seen, whether by would-be patriots or by critics like Mathews and the WCED, to involve a loss of national sovereignty. Sovereignty cannot be 'sacrificed', for good or for ill, and thus the state will balk at any agreement or compromise. If, however, the nature of the problems and their solutions can be suggested, by diplomats such as Strong, to involve an 'exercise' of sovereignty, then the state may be more willing to accept agreements.

Astute observers of international relations, nevertheless, are responsible for clear definitions and explanations of certain phenomena, so dodging diplomatic dialogue should not be allowed to obscure the issues. The problem is that 'merged sovereignty' is an analytically vague, if not inaccurate, usage. Though creative, Strong's argument would be clarified and strengthened by explicitly stating that it is the autonomy of the sovereign state which needs to be 'exercised', or restricted.

While Strong would clearly like to initiate and encourage cooperation, and likely to have states accept restrictions on their behaviour (their autonomy), he has political reasons for making the notion of 'exercised sovereignty' sell in the world community. As will be discussed in greater detail in the following chapter, the term sovereignty has high emotive content and is often used by states simply as a semantic weapon to oppose a given issue or situation.⁷² Strong is attempting,

though in a constructive manner, to use the rhetorical appeal of sovereignty in another manner. If sovereignty has negative 'defensive' connotations, perhaps it has positive practical uses as well, which could be used to further international cooperation on multilateral environmental regulation. It may be asserted, however, that a clearer statement about the important differences between sovereignty and autonomy, and the impact of interdependence on autonomy, would allow the arguments and debate about the 'modification of sovereignty' and the 'barrier of sovereignty' to be superceded by more constructive work on the actual creation and implementation of international environmental regulation.

CHAPTER 4

SUBSTANTIATING THE DISTINCTION: EVIDENCE OF RESTRICTED AUTONOMY
AND CONTINUED SOVEREIGNTY IN RHETORIC AND IN PRACTICE

The preceding discussion has sought to clarify the important distinction between the concepts of sovereignty and autonomy, and show that the current debate over international environmental problems often confuses the issue by arguing that state *sovereignty* must be modified or sacrificed in the face of these global problems. The fundamental point is that sovereignty, or the constitutional independence of states, is not reduced, changed, or made obsolete by the existence of global environmental problems. Nor do the solutions to these problems - as they are currently being enacted - impinge upon the sovereignty of the state, or need somehow to surmount sovereignty to be achieved. The *autonomy* of the state, however, or the freedom of action that any state has, is restricted by the measures which states are taking to tackle global environmental problems. States are willing to trade off measures of this autonomy to achieve the desired solutions. The invocation of sovereignty as a barrier to, or victim of, solutions to environmental problems is a misuse of the term on the part of some observers.

The purpose of this section of the paper is to examine the empirical evidence for the existence of solutions to international environmental problems which have restricted the autonomy of states while leaving their sovereignty intact. The discussion will be in two parts: first, a brief discussion of sovereignty as a term which states continue to use in their rhetoric to either support or oppose certain policies or

political positions and/or to reaffirm their constitutional independence. That is, what are states *saying* about the impact of global interdependencies on their sovereignty and on their autonomy?

Second, three case studies in international environmental regulation will be examined to determine if there is evidence to support the propositions of this paper. That is, what have states *done* about managing environmental interdependence, and how do these actions affect their sovereignty and autonomy? These actions, of course, may or may not be consistent with what states have said about sovereignty, autonomy, and the environment. The cases - the Partial Test Ban Treaty of 1963, the European Convention on Long-Range Transboundary Air Pollution (LRTAP) of 1979 and its Protocols of 1985 and 1988, and the Montreal Protocol on Substances that Deplete the Ozone Layer of 1987 and its subsequent amendments - are a sampling of multilateral agreements which span thirty years of international environmental regulation. Though others could be chosen (such as the 1989 Basle Convention on Hazardous Waste), these cases clearly demonstrate the degree to which environmental issues have grown in importance since 1963, as well as the degree to which states have increased their commitment to managing environmental problems through greater restrictions of their autonomy. That is, these case studies are illustrations of state autonomy being reduced - as a result of environmental interdependencies - through the voluntary acceptance of restrictions on certain activities.

Do as We Do, Not as We Say?

As pointed out by Lynton Caldwell (see p. 28), "rhetorical assertions of sovereignty continue to be heard". Similarly, Oran Young noted that limitations on autonomy are often "simply ignored in rhetorical affirmations of the formal prerogatives of sovereign states". It certainly is not surprising that sovereignty should continually be used as a rallying cry. It is so emotive a term, on account of its ability to appeal to and muster nationalist sentiment, that it naturally finds a definitive place in international rhetoric: "'on no account must the sovereignty of the state be infringed' is a theme which in political circles, only the foolhardy would oppose".⁷³ Long practiced and formally encapsulated in the 1934 "Convention on the Rights and Duties of States" of the League of Nations, the status of sovereignty is proclaimed such that "[n]o state has the right to intervene in the internal or external affairs of another".⁷⁴

Indeed, the history of state rhetoric, even, if not especially, within international organizations, is understandably full of examples of similarly 'protective' sentiments. Both the 1962 and 1973 U.N. Resolutions on Permanent Sovereignty Over Natural Resources declare the "right of peoples and nations to permanent sovereignty over natural wealth and resources", with the provision that sovereignty is exercised "in the interest of their national development and of the well-being of the people of the State concerned".⁷⁵ Perhaps the use of the word 'permanent' is not insignificant here. Even the Stockholm Declaration of the 1972 Conference and the more recent Rio Declaration of the United Nations Conference on Environment and Development (UNCED),

despite encouraging environmental responsibility, acknowledge that "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources".⁷⁶

What do states say about autonomy? Current trends suggest that states guard less jealously - both in rhetoric and in practice - their political independence and freedom of action, or autonomy. For example, the absolutist nature of state declarations with regards to how much freedom of action can be sacrificed, though cloaked carefully in the rhetoric of 'sovereignty', has moderated to some degree recently. The Amazonian states, heavily implicated in several global environmental problems (such as deforestation, loss of biodiversity, and release of CO2 leading to global warming), are a case in point.

In 1978, article IV of the Treaty for Amazonian Cooperation declared: "The exclusive use and utilization of natural resources within their respective territories is a right inherent in the sovereignty of each state...".⁷⁷ Article IX stated that participation and cooperation with international agencies would take place "whenever they deem it necessary and convenient". State 'sovereignty' was clearly strongly guarded in the declarations of these governments. However, the acceptance of restricted autonomy, though not explicitly stated, can be read in more recent statements from the same group of states. The May 1989 Declaration of Brasilia declared that:

The Ministers endorse the principle that each State has the sovereign right to administer freely its natural resources. This does not, however, exclude the need for international cooperation at the subregional,

regional, and world levels; rather, it reinforces it.⁷⁸ This position was supported by the Manaus Declaration a few weeks later. After reaffirming sovereign rights over natural resources, it stated that:

In the exercise of our sovereign responsibility to define the best ways of using and conserving this wealth and in addition to our national efforts and to the cooperation among our countries, we express our willingness to accept cooperation from countries in other regions of the world, as well as from international organizations.⁷⁹

Neither of these recent declarations, not surprisingly, accept any diminution of sovereignty. The possibility of restricting autonomy - through enhanced cooperation with other states or international organizations, perhaps resulting in the signing of binding multilateral agreements and protocols - is implied, however. Not only was this possibility not even considered in 1978, these declarations reflect the understanding that the exercise of autonomy, whether in cooperation with other states or international organizations, is based in the sovereignty which they continue to declare. Additionally, Principle 2 of both the Stockholm Declaration and the Rio Declaration charge states with the responsibility to "ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or areas beyond the limits of national jurisdiction".⁸⁰ Clearly, such a directive could only be met by a state restricting its freedom of action - its autonomy - in relevant activities, such as eliminating CFC production and consumption or curtailing CO₂ emissions.

State rhetoric, as expected, sends mixed signals. Since sovereignty is a sacred property for the state, it allows them to disguise their 'dislike' for a particular policy or regulation by

terming it an 'infringement of sovereignty'. Should a state seek a goal which requires the cooperation of other states, the rhetoric may be more accomodating. Examples of both were noted above, though neither should disguise what is taking place with regards to environmental interdependence; that is, the acceptance of the possibility of restricting autonomy. States are interested, of course, in the preservation of their sovereign status, as they are beneficiaries of the international system. The result, Oran Young argues, is that in a situation where a rising level of interdependence increases the *probability* of transformation in that system, states will contribute to the development of mechanisms designed to manage the rise of those interdependencies.⁸¹ That is to say, the dynamics of increasing interdependence (see p.15-19 above) will lead states to manage those interdependencies (eg. create regulations to manage environmental interdependence) if they *suggest the possibility* of a change in the international system (whereas those cited in chapter three argued that a change *is* taking place or *must* take place). Thus, we should not be surprised if states become more flexible in areas of potential cooperation and mutually agreed regulation. Their constitutional independence, however, remains intact even if they are willing to accept restrictions through the development of certain mechanisms (such as binding protocols) on their freedom of action - on their autonomy.

The key question still remains, however. Have states accepted actual restraints on autonomy, or created mechanisms to manage the rise of international environmental interdependence, that do not undermine their sovereignty? Has the nature and

scope of these commitments, furthermore, changed as global environmental problems become increasingly important? Three case studies will be considered below.

What to Do? Case 1: The Partial Test Ban Treaty (1963)

The Partial Test Ban Treaty (PTBT) of 1963 would seem at first glance, and is usually interpreted as, an arms control treaty, not an environmental treaty. It prohibited "any nuclear weapon test explosion, or any other nuclear explosion...in the atmosphere; beyond its limits, including outer space; or underwater, including territorial waters or high seas" as well as explosions "in any other environment if such explosion causes radioactive debris to be present outside the territorial limits of the State under whose jurisdiction or control such explosion is conducted."⁸² The agreement was initially signed only by the United States, the Soviet Union, and the United Kingdom. By 1987 there were 116 adherents. There were, of course, several important exceptions. France and China never signed and did not adhere to the treaty until after they had conducted more atmospheric nuclear tests.

It has been argued that the main goal and benefit of the PTBT was to stop the pollution of the atmosphere with radioactive debris and subsequent nuclear fallout, and not to make a great contribution to slowing the nuclear arms race. Thus, it is considered by some to be the first global agreement to protect the environment and human health.⁸³ There are two main reasons for regarding the PTBT as an environmental agreement more than an arms-control agreement. Firstly, it had little negative

effect on the arms race. The number of nuclear weapons tests conducted after 1963 actually increased, with the only difference being that the tests were underground and of limited allowable yield.⁸⁴ It is clear that the ability to move the tests underground was an important factor in even getting the Treaty to a working stage in the first place, let alone having it signed by the superpowers. Furthermore, it has been argued that with the fears of the public about atmospheric radiation relieved due to the achievement of a partial ban, the political momentum for a comprehensive ban, which has yet to be achieved, was diffused.⁸⁵

Secondly, the PTBT may be conceived as a global environmental agreement because that was in fact a major objective of the Treaty. The preamble seeks "to put an end to the contamination of man's environment by radioactive substances", though it was also the cross-border diffusion of radioactive debris that was explicitly prohibited (see art. 1, para. 1(b) cited above).⁸⁶ The Treaty did result in greatly decreased levels of atmospheric fallout from the peak year of 1963, and then in even further decreases after France and China ceased atmospheric testing in 1974 and 1980 respectively (without joining the PTBT).⁸⁷ However, it has been argued that the PTBT was explicitly based on the notion of sovereignty; it allowed states to test as they liked, so long as the impact was confined to state territory.⁸⁸

The first somewhat indirect attempt at a global environmental agreement may be seen as a significant beginning for environmental protection, but one which resulted only in a partial restriction of state autonomy. Radioactive material in

the atmosphere as a result of nuclear weapons tests has decreased dramatically since 1963, yet the ability of states to move the tests underground only resulted in a partial diminishment of their freedom to test. As an arms control agreement, then, it was militarily insignificant.

Sovereignty, on the other hand, is not implicated in a state's freedom and ability to conduct nuclear weapons tests. While state rhetoric may insist upon weapons testing as a 'sovereign prerogative', the still sovereign state can decide to cease testing and thus restrict its autonomy (as many have done). Nevertheless, the PTBT was a considerable milestone for states to accept constraints on their behaviour, however limited, for purposes of global environmental protection.

Case 2: The ECE Convention on Long-Range Transboundary Air Pollution (LRTAP) and the Protocols on SO₂ and NO_x (1979, 1985, 1988)

In 1979, thirty-one European states, the United States, and Canada, signed the Convention on Long-Range Transboundary Air Pollution (LRTAP) under the auspices of the U.N. Economic Commission for Europe (ECE). The initial Convention was a weak document in terms of reductions of emissions on the part of member states. Article 2 charged parties to "endeavour to limit and, as far as possible, gradually reduce and prevent air pollution including long-range transboundary air pollution".⁸⁹ The Convention was not only the first multilateral treaty to directly address the atmosphere as an environmental problem, it provided the framework which would allow for the negotiation of subsequent protocols and exchange of information. There were

articles on research and development (art. 7), exchange of information (art. 8), and development of the cooperative programme for the monitoring and evaluation of the long-range air pollutants in Europe (art. 9).⁹⁰ These requirements are not insignificant in light of the fact that they were adopted at a time of government reluctance and scientific uncertainty about the effects of air pollution (primarily sulfur dioxide and nitrogen oxide) such that no more than six of the thirty-three governments believed that acid rain was even a serious problem when the Convention was signed.⁹¹

To date there have been three protocols signed, though there is only useful data on progress under the first two. The third, concerning 'volatile organic compounds', was only signed in 1991. The 1985 Helsinki Protocol on sulfur dioxide emissions, which mandated a thirty percent reduction (from 1980 levels) by each state by 1993, was signed by nineteen key states with the exceptions of the U.K., Poland, and U.S.⁹² Additionally, the Protocol required that each party "...provide annually to the Executive Body its levels of national annual sulphur emissions, and the basis upon which they have been calculated".⁹³ Thus, the parties to the Protocol mutually undertook thirty percent reductions to emit SO₂ - a restriction on their autonomy to emit unlimited SO₂ - in order to reduce the effects of acid precipitation on the environment.

The degree of compliance to this Protocol is mixed. Evidence indicates that some states are reducing in excess of that required and that some non-signatories (eg. the U.K.) are reaching nearly thirty percent reductions anyway.⁹⁴ Thus, it

would seem that some reduction would have taken place in the absence of the Protocol, though it is likely that its existence, even for those who did not sign, was influential on some of the key states. Environmentally, the Protocol kept acid rain damage from continuing on at its current pace, though damage continued due in large part to nitrogen oxides (NO_x).

Three years later, a second protocol designed to deal with the NO_x problem was implemented. Twenty-seven states signed the Sofia Protocol which calls for a freeze on national NO_x emissions at 1987 levels by 1995.⁹⁵ Due to some innovations which allow for amending the requirements, however, states could quickly move to steeper reductions. As stated in art. 2, para. 3(a):

The Parties shall, as a second step, commence negotiations, no later than six months after the date of entry into force of the present Protocol [14 February 1991], on further steps to reduce national annual emissions of nitrogen oxides or transboundary fluxes of such emissions, taking into account the best available scientific and technological developments, internationally accepted critical loads and other elements resulting from the work programme [on research] undertaken under article 6.⁹⁶

While negotiations on actual reductions have only recently begun, it is of note that twelve countries pledged in 1987 to an immediate thirty percent reduction.⁹⁷ Lastly, it is worth noting that a *mandatory* financing program for the Cooperative Programme for Monitoring and Evaluation of the LRTAP in Europe (EMEP) was reached in 1984. Mandatory contributions (made in currency or in kind) are made on an annual basis by all participating parties within the geographical scope of EMEP to support the work programme.⁹⁸ The Protocol places approximately 57% of the financial burden on the four largest European states (the USSR, France, Germany, and the U.K.).⁹⁹

What assessment can be made about the LRTAP and its Protocols or any restrictions on state autonomy that it represents? Firstly, in terms of the LRTAP Convention itself, the degree to which most of the states originally involved have substantially reduced a number of emissions, which in 1979 most did not perceive as a problem, must be considered a significant step forward. It is clearly a case of states restricting, through the mechanism of the multilateral protocol, their autonomy to emit unlimited amounts of certain chemicals.¹⁰⁰ Furthermore, in the purely environmental sense, though the problem is still there, it is less severe than had there been no convention.

Secondly, the LRTAP has created a forum in which states can pursue further agreements cooperatively. This is shown by the three protocols which have resulted, and by the degree to which states have become enmeshed in cooperative efforts on information exchange, financing, and actual reductions in emissions, all of which represent restrictions on their autonomy which did not exist prior to 1979. Without the Convention, solutions to transboundary air pollution problems would likely have been piece-meal; with the Convention, mutual regulation and a shared responsibility for the environment have become the foundation for continued action.¹⁰¹ The saga of atmospheric pollution in Europe carries on, but on the basis of existing evidence it may be concluded that states have agreed to restrictions on their autonomy in principle and have restricted in practice their freedom to emit unlimited amounts of SO₂ and NO_x. Furthermore, it seems clear that the ECE states will further restrict autonomy as

the process of negotiation and regulation continues. A second SO2 Protocol (the first Protocol is set to lapse in 1993) is currently being negotiated.¹⁰²

The sovereignty of the states concerned, however, has not been endangered by this process. Each participant still retains its constitutional independence, and thus can decide whether or not to participate. Each Protocol, in fact, allows for the withdrawal of participation in the programme "at any time within five years from the date on which the present Convention has come into force with respect to a Contracting Party...".¹⁰³ The legally binding nature of the Protocols does not effect the constitutional position of the participating states; the autonomy which they have restricted is based in the sovereignty which they possess.

*Case 3: The Montreal Protocol and the London Amendments
(1987, 1990)*

By far the most comprehensive example to date, both in terms of the number of states involved and the number of activities restricted, of sovereign states willingly accepting restrictions on autonomy to achieve global environmental protection has been the Montreal Protocol on Substances that Deplete the Ozone Layer. Truly a global problem that has elicited an international response, depletion of stratospheric ozone, caused by the release of CFCs and halons used in many industries (such as refrigeration and electrical cleaning), does not recognize the state from which the damaging chemicals came. The response of the international community has been the Montreal Protocol and its London Amendments, now ratified by seventy-seven countries

(with the lone *significant* holdout, India, signing on in April 1992) representing over 99% of the production and 90% of the consumption of ozone-depleting chemicals.¹⁰⁴

The amended Protocol mandates three significant limitations on signatories' autonomy. First, an entire class of ozone-depleting chemicals (greater than the fifty percent stipulated by the original Protocol) must be eliminated by the year 2000 (and 2010 for developing countries).¹⁰⁵ Second, the developing countries, who were given preferential treatment in the Protocol (such as continued specified levels of CFC consumption until 2010) due to their demand for recognition of their lower levels of development, will be financed by the developed countries in their search to provide alternative, more environmentally sound development for their burgeoning populations.¹⁰⁶ Lastly, article IV of the amended Protocol stipulates that:

As of 1 January 1990, each Party shall ban the import of the controlled substances...from any State not party to this Protocol.

[and]

As of 1 January 1993, each Party shall ban the export of any controlled substances...to any State not party to this Protocol.¹⁰⁷

Additionally, signatories are prohibited "from providing new subsidies, aid, credits, guarantees or insurance programs" to non-participants.¹⁰⁸

These three major features of the Protocol make it a significant example of the fact that states are willing to trade off freedom of action, or autonomy, to gain global environmental benefits. The elimination of so many ozone-depleting substances was prompted by the detection of an enlarged ozone hole over the Antarctic and increased scientific information about the

destructive nature of CFCs. The flexibility built-in to the accord allowed for the adjustment of targets to account for new discoveries. The moderate restriction of autonomy in the 1987 Protocol (fifty percent reductions) was increased to a stringent restriction of autonomy (one-hundred percent reductions) in 1990.

The decision to fund the developing states in their undertaking of the requirements of the Protocol is also a unique commitment on the part of developed nations. The fund, administered by the World Bank, was set initially at \$240 million and was key to gaining the participation of such major developing countries as China and, now, India.¹⁰⁹ By 1992, the interim fund had committed \$33 million to projects in Mexico, Malaysia, Egypt, Thailand, the Phillipines, and for 20 other countries to develop formal timetables for phasing out CFCs.¹¹⁰ This is an unprecedented step in international environmental regulation, one which clearly involves a new and different sort of restriction on the autonomy of developed state signatories.¹¹¹

Lastly, the requirements of article IV on trade in controlled substances clearly restricts the actions that states can take when dealing with others who are not party to the Protocol, all in the cause of managing the problem of ozone layer depletion.¹¹² Furthermore, there is evidence that the potential trade restrictions are having the desired effect of encouraging states to join the Protocol, or at a minimum, to comply with its reduction requirements.¹¹³

It is clear that the restrictions on state autonomy in the Montreal Protocol are the broadest to date of any international environmental agreement in terms of the range of activities which

are curtailed or regulated with regard to CFCs. Not only are environmental (production and consumption) regulations established, but financial and trade commitments are established as well. Moreover, the restrictions are likely to be tightened up as the signatories expedite the phase-out schedule, add new substances to be controlled, and develop a mechanism to sanction those who are not complying with the Protocol. Currently, the London Amendments only contain an interim noncompliance procedure which stipulates that "all parties ultimately decide how to sanction noncompliance".¹¹⁴ Given the measures taken to date, however, it is conceivable that a stricter trade sanction mechanism could be enacted for noncompliance, thus furthering the degree to which states have traded off their autonomy to achieve the goal of broad multilateral compliance with the Protocol. So, as the Parties meet for the fourth time - November 1992 in Copenhagen - the topics of non-compliance, as well as the need to expedite the phaseout schedule and add new chemicals to the controlled substances list, will be the subjects of the next chapter written in the history of international action to prevent further depletion to the ozone layer.¹¹⁵ The development of the Montreal Protocol has been called "a valuable legal precedent", "a landmark achievement", and "a true landmark in international environmental law" with good reason.¹¹⁶

The discussion of the Montreal Protocol, the most comprehensive of global environmental agreements, shows that sovereign states are willing to sacrifice their autonomy and freedom of action to achieve environmental goals.¹¹⁷ As suggested by the analysis of this paper, and noted by other

observers, "a world government is not necessary to deal with global problems".¹¹⁸ In tackling the problem of ozone depletion, states have not only foregone the continued production and consumption of certain chemicals, they have agreed to impose trade restrictions on substances or products that in any way involve the controlled substances and (developed countries) have agreed to the transfer of technology and financing to achieve the cooperation of the developing countries in this matter. There is, moreover, a good chance that a trade sanction mechanism will be enacted to punish those who are not complying with the terms of the Protocol.

At the same time, while collectively restricting their freedom of action in this area, the states involved have certainly retained their constitutional independence, or sovereignty. Not only can a Party withdraw from the Protocol (art. 19), but the "top down" approach of the Protocol, which mandates goals and deadlines but allows states to decide on their own policies and regulations to meet their obligations, encourages participation by states that might otherwise regard the Protocol as too great a threat to their autonomy.¹¹⁹ Any such threat could be targetted rhetorically by opponents as an encroachment on 'sovereignty', thus 'justifying' non-participation. As it developed, however, the Protocol set the required goals needed for effective action while also preserving state freedom of decision on how those restrictions (on its autonomy) would be achieved. Autonomy is restricted; sovereignty remains intact.

CHAPTER 5

CLIMATE CHANGE AND THE 1992 UNCED: THE FUTURE OF INTERNATIONAL ENVIRONMENTAL REGULATION?

The preceding chapter has sought to detail the evidence supporting the argument that, despite the assertions made by some observers about the 'barrier' of sovereignty and the rhetorical invocation by states of sovereignty as a 'permanent right', states are willing to sacrifice autonomy to achieve goals of environmental protection through international regulation while retaining their sovereignty, or constitutional independence. Though the PTBT, the LRTAP Protocols, and the amended Montreal Protocol are all cases of states restricting their autonomy through multilateral regulation for the goal of environmental protection, it is prudent to ask whether these precedents suggest that states will *continue* to trade off autonomy on other global environmental issues in the future. Most prominent of these problems is climate change, or global warming.

Similar to depletion of the ozone layer, climate change is a global phenomenon which will affect all states regardless of their location and regardless of how much or how little they have contributed to the problem.¹²⁰ The earth's climate system is a complex, interconnected system, which makes definite predictions of the magnitude of global warming difficult.¹²¹ While the degree to which climate change will impact upon states is still uncertain, it is clear that all nations are affected by the earth's climate system and that broad international cooperation will be needed to mitigate global climate change.¹²² However, unlike the ozone problem, the anthropogenic sources of climate change (greenhouse gas emissions) are many and varied. Carbon

dioxide is considered the main culprit in causing climate change, though methane, CFCs, ozone, and NO_x are also contributing factors. As a result, any international agreement to curtail greenhouse gas emissions is bound to be more complex, and likely more difficult to reach, than previous environmental agreements.

Scientific evidence and consensus, important to the achievement of both the LRTAP and Montreal Protocols, is growing however, and support for a 'middle ground' has solidified.¹²³ Even with regards to the primary disagreement in the science surrounding global warming - the magnitude and timing of future warming - there is substantial consensus. Most importantly, the predicted range of warming of 1.5 to 4.5 °C is accepted by most climate experts.¹²⁴ Though most critics correctly argue that 'doomsday' predictions about the end of life on earth are thus inaccurate, it is crucial to note that the minimum change will be an increase of no less than 1.5 °C. At a minimum, then, the earth will become, by the middle of the next century, warmer than it has been in 10,000 years.¹²⁵

That some uncertainty remains in the science of global warming weakens the case for immediate mandatory greenhouse gas emission reductions, though not substantially. Given that the uncertainty ranges from a modest, though noticeable 1.5 °C to a hefty, if not catastrophic 4.5 °C, the need for international action has become widely accepted (see below). Arguably, without a global agreement on greenhouse gas reductions no state can anticipate any continued stability in the climate and its capacity for adaptation could be overwhelmed by continued, or unexpectedly rapid, warming.¹²⁶

The international community has responded to this new global threat only recently, with the science of climate change leading the way. The first World Climate Conference was held in 1979, but there was little international publicity or interest. Even the scientific community was only beginning to understand what the earth's climate system involved. By 1988, however, climate change had become *the* pressing and important global environmental issue for scientists and policy-makers alike, since protection of the ozone layer had moved to a state of implementation.¹²⁷ The newly created Intergovernmental Panel on Climate Change (IPCC) held its first meeting in November of 1988. The United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO), which were instrumental in the creation of the IPCC, are leading players in the forging of an international consensus on the need to act to mitigate the effects of climate change and they assist in organizing many conferences and forums for discussion of the subject.

Formal intergovernmental negotiations on a framework convention on climate change did not begin until after the Second World Climate Conference (SWCC) in November of 1990. That Conference considered the IPCC report (in three parts) which has formed the basis for much of the discussion which has followed since (with some minor modifications resulting from new data and new methodology).¹²⁸ While the scientists of the IPCC were of the opinion that CO₂ emissions should be immediately stabilized, with a reduction of twenty percent achieved by 2005, the Ministerial Declaration of the SWCC eschewed binding reductions or timetables for the statement that:

We stress, as a first step, the need to stabilise, while ensuring sustainable development of the world economy, emissions of greenhouse gases not covered by the Montreal Protocol on Substances That Deplete the Ozone Layer.¹²⁹

The governments involved *did* call for negotiations on a framework convention on climate change to "begin without delay", a feat accomplished three months later.¹³⁰

The question facing the international community was whether the negotiations would lead to a convention which established targets and timetables immediately, or, in the spirit of the LRTAP Convention and the Vienna Convention, a framework convention upon which to build binding protocols afterwards. With the goal of the negotiators to design a document to be signed at the United Nations Conference on Environment and Development (UNCED) in June of 1992, meetings began in February 1991 in Chantilly, Virginia, under the auspices of the Intergovernmental Negotiating Committee (INC).

Generally, the states involved in the negotiations took predictable positions. The U.S., the world's largest source of anthropogenic CO₂ emissions, opposed targets and timetables (which would restrict autonomy significantly). Other OECD countries favoured commitments, at the least, to stabilize CO₂ emissions at 1990 levels by the year 2000. The developed countries split among those demanding substantial financial assistance from the west (led by China and India), the small island states seeking an insurance fund for damages (due to flooding), and a third group led by Saudi Arabia who opposed limiting emissions.¹³¹ The result of these negotiations, the U.N. Framework Convention on Climate Change, which encompassed

elements of most of these positions, was signed by 154 states at the Rio UNCED in June, 1992.¹³²

The Framework Convention contains several features which begin to limit states' autonomy for the purpose of mitigating global climate change. Firstly, the developed states commit to adopting "national policies and take corresponding measures on the mitigation of climate change, by limiting... anthropogenic emissions of greenhouse gases and protecting and enhancing...greenhouse gas sinks and reservoirs" with the "aim of returning individually or jointly to their 1990 levels these anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol".¹³³ Essentially, states promise to make greenhouse gas reductions, but no exact targets or timetables are enforced.

Secondly, the developed countries "shall provide new and additional financial resources [including transfer of technology] to meet the agreed full costs incurred by the developing country Parties".¹³⁴ The Montreal Protocol clearly served as an important precedent in this respect, as it was the first international environmental agreement to incorporate such a concession.

Thirdly, in addition to the above requirement of providing financial resources to developing countries, the Convention states that:

The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty

eradication are the first and overriding priorities of the developing country Parties.¹³⁵

In this agreement, the success of the developing countries' commitments is placed squarely on the shoulders of the developed states, a feature not contained even in the amended Montreal Protocol.

Lastly, the Parties agree to further research and observation (art. 5), education, training, and public awareness (art. 6), and the creation of two subsidiary bodies for scientific and technological advice (art. 9) and implementation (art. 10). With these provisions, the groundwork is laid for the future negotiation and implementation of protocols requiring greater multilateral action.

Despite the fact that many environmentalists, and some policy-makers, feel that the Framework Convention does little to achieve its objective of mitigating global warming, viewed in the context of other multilateral environmental agreements the Convention follows the pattern of calling for international cooperation on research and providing assistance to developing countries before binding states to greater restrictions of their autonomy through mandatory emission reductions. As other observers have noted, "historically, such agreements have been the first step toward major international action."¹³⁶

The fact that the Convention stipulates no mandatory targets or deadlines for achieving emission reductions is the subject of the greatest criticism.¹³⁷ Specifically, the position of the United States is singled out as the reason why no such requirements are contained in the agreement. However, the U.S. may come close to stabilizing its CO₂ emissions at 1990 levels by

the year 2000 - the general target of most of the signatories to the Convention - due to domestic measures.¹³⁸ Washington's refusal to sign an agreement with greater reductions at this particular time must be regarded in the light of their domestic activities and of the Convention in general. It is the *first* global treaty aimed at reducing greenhouse gas emissions, and though weaker than the Montreal Protocol, it is stronger than the Montreal Protocol's predecessor, the 1985 Vienna Convention.¹³⁹ As the experience of the LRTAP Protocols shows, the lack of commitment of one or more states to an otherwise widely agreed requirement does not necessarily void the usefulness of the agreement.

The Convention stipulates several requirements that represent restrictions on state autonomy that did not exist prior to the signing of the agreement. As noted above, for example, participants have enmeshed themselves in requirements to undertake research and public awareness and developed states have again taken on financial and technology transfer responsibilities, with the added burden that the fulfillment of the developing countries' commitments depends on the "effective implementation" of these responsibilities. Even during the UNCED, many states announced plans for beginning the fulfillment of their financial responsibilities to a total of two billion dollars (which, added to other funding, reaches slightly more than half the amount needed for *all* the environmental initiatives agreed to at Rio).¹⁴⁰ These are commitments with clear opportunity costs for other government programs, such as deficit reduction, which reduce a state's autonomy.

A preliminary assessment of the Climate Change Convention leads to the conclusion that although the Convention does not formally restrict states' autonomy to emit greenhouse gases, some countries clearly feel a commitment to the as yet unwritten regime of 'emission reductions'. State autonomy is more explicitly reduced by the Convention in other areas, however. It represents for developed states in particular another level of requirements in the transfer of financial resources and commitments to undertake more research, public awareness, and international scrutiny of national policies.¹⁴¹ Such commitments denote the acceptance of restrictions placed on their freedom of action, or autonomy. Moreover, given the history of other multilateral environmental agreements such as the LRTAP Protocols and the Montreal Protocol, it is quite likely that the Climate Convention will lead to further protocols, and more substantial restrictions on autonomy, in the future. These questions, as well as the question of implementation and compliance (or non-compliance), have been relegated to discussion at the first meeting of the Parties which is tentatively scheduled for October, 1992.¹⁴²

The sovereignty of the states who have signed the treaty - an unprecedented percentage of the total number of states in the world - remains unaffected by their decision to undertake the initial requirements of the Convention. As with previous multilateral environmental agreements, signature to the Convention does not alter the constitutionally independent status of the states involved. The sovereign states who decided to sign an agreement to restrict some of their freedom of action in the

cause of mitigating global climate change remain free to to withdraw from the treaty or to fulfill their obligations. Parties may withdraw from the Convention "at any time after three years from the date on which the Convention has entered into force for [that] Party...".¹⁴³ Fulfilling their obligations, on the other hand, represents restrictions on their autonomy but in no way affects their sovereign status.

It is also of note that international consensus is growing on another important issue related to climate change which could speed the movement towards greater restrictions through a first protocol. As noted above, the scientific basis for the existence and possible magnitude of climate change has gained widespread international acceptance. Scientific consensus was important in the development of both the LRTAP Protocols and the amended Montreal Protocol. Such consensus may be necessary, but is not sufficient for the development of a substantial multilateral agreement. Also needed is a consensus on the technical and economic feasibility of making significant reductions (or, in the case of the Montreal Protocol, eliminations) of certain chemicals or gases. Such consensus, which proved important again for both the LRTAP and Montreal Protocols, is only beginning to emerge on the issue of climate change.

Though the debate on CO₂ emissions is often framed in terms of 'environment versus economy (or jobs)', many analyses of CO₂ reduction programs suggest that reductions in carbon dioxide emissions are both technically feasible and cost-effective.¹⁴⁴ Indeed, it has been suggested that one the lessons to be learned

from the Montreal Protocol is that it is often a misconception to regard environmental goals as invariably competitive with those that are regarded as essentially economic.¹⁴⁵ Additional progress towards a more restricting climate change protocol may also stem from the fact that leading industrial countries such as Japan are looking to profit economically from the development and sale of 'clean' technology.¹⁴⁶ Thus, the combined weight of scientific evidence, economic feasibility, and economic incentive may lead quickly to the development of a protocol which restricts more substantially, through mandatory emission targets and deadlines, participating states' autonomy.

On the basis of existing evidence it is possible to conclude that the future of international environmental regulation will, if the climate change agreement is any indication, proceed in a similar manner to some past environmental agreements. That is, states can tackle and begin to solve problems of international environmental degradation through the mechanism of the multilateral agreement. Such agreements allow sovereign states to achieve solutions through mutual restrictions on certain activities (such as the emission of sulfur dioxide or carbon dioxide). These agreements do not, however, change, modify, or reduce the sovereignty of those states. Sovereign states chose to restrict their autonomy to manage cases of international environmental interdependence.

CHAPTER 6
CONCLUSIONS

One purpose of this thesis has been to show, with reference to problems of international environmental interdependence, the substantive difference between the concepts of sovereignty and autonomy. In international relations, the best understanding of sovereignty is the constitutional independence of a territorial entity, for that is the fundamental criterion which must be satisfied before such an entity can be recognized as a sovereign member of the international community. State autonomy, on the other hand, is the freedom of action that a state has to carry out activities, both domestically and externally. Despite the arguments about the current plight of the sovereignty of the state made by many observers of global environmental problems, neither the existence of international environmental interdependence nor the conclusion of international environmental agreements weakens, modifies, or makes obsolete the constitutional independence of states in the international system.¹⁴⁷ Sovereignty, *per se*, is also not a barrier to obtaining those agreements.

While state sovereignty is absolute in its character - that is, it is either present or absent - state autonomy can exist in greater or lesser amounts. As F.H. Hinsley has understood:

[I]t is wrong to conclude that because the state has experienced a decline in its international freedom of action, sovereignty is no longer compatible with the state's international position...To argue in this way is to associate the attribute of sovereignty with the possession by the state of freedom to act as it chooses...¹⁴⁸

The case studies in chapters four and five document increasingly restricted state autonomy due to the development of multilateral agreements, indicating that states can remain sovereign and still work to manage global environmental problems. It would seem clear then, as K.J. Holsti has argued, that one long-range trend in the global system is in the direction of autonomy erosion.¹⁴⁹ On the other hand, as noted in chapter two, this analysis also suggests that with regards to environmental interdependence, a restriction of autonomy in one area may enhance autonomy in another. The restriction of the autonomy of the ECE states to emit unlimited SO₂ and NO_x, for example, reduces the impacts of environmental interdependence and thus increases the ability of each ECE state to protect its own environment.

Furthermore, it would seem that as Maurice Strong, Marvin Soroos, and others concede, states will continue to be the key actors in efforts to address any global problem.¹⁵⁰ There may be nothing inherently sacrosanct about the concept of sovereignty, but the world will likely remain organized on this principle "for a very long time".¹⁵¹ This is also true of the international environmental order, as Levy, Keohane, and Haas note, where "sovereignty remains the legal cornerstone and where states are, if anything, reinforced in their legal authority to make decisions for the environment".¹⁵²

It would be useful if the distinctions presented here were recognized by those observers of international environmental relations who argue that sovereignty is problematic. Some, such as David Newsom and Jessica Tuchman Mathews, propose that sovereignty is 'challenged' and 'modified' by the existence of

international environmental interdependence. Such a proposition is flawed because the dynamics of interdependence affect *not* the fundamental constitutional and legal position of a state, namely sovereignty, but the freedom of action, or autonomy, that a state possesses.

Other observers, such as Marvin Soroos and the WCED, argue that sovereignty is a barrier to solving environmental problems, presumably because states will not compromise 'sovereignty' to the degree necessary to achieve solutions through multilateral regulation. This assertion suffers from an ill-defined use of sovereignty and a failure to recognize that it is in fact autonomy which is, and must be, compromised by sovereign states to achieve environmental protection. The case studies in chapter four clearly illustrate the development of increasingly restrictive multilateral agreements to manage environmental interdependencies. State sovereignty is not the barrier to environmental cooperation and action that some observers would have us believe.¹⁵³

The discussion at the beginning of chapter four suggests, not surprisingly, that sovereignty will remain a core feature of state rhetoric. Nevertheless, while sovereignty (defined as constitutional independence) will not be easily given up, in rhetoric or in practice, some states may be formally acknowledging - in statements accepting the need for greater multilateral cooperation - the need to restrict autonomy to achieve environmental goals. If this cooperation results in the actual restriction of state autonomy through, for example, environmental regulation for the goal of environmental protection

(as is argued in chapters four and five), then the status of sovereignty as the legal basis for restricting autonomy clearly remains unaffected.

The arguments about sovereignty being undermined by global environmental interdependencies, or being a barrier to their management, should be seen in their proper light as inaccurate and misleading. Resultingly, the conclusion that the world must move beyond sovereignty as the organizing principle of international society is unwarranted. Clearer conceptual thinking and analysis is needed in the academic study of global environmental problems and international relations. The analysis presented here about the nature of sovereignty, autonomy, and interdependence would also suggest several implications for the environmental policy debates.

It might be noted that there is a 'strange bedfellows' phenomenon occurring within these debates. Both environmentalists and states agree that sovereignty is at stake in the quest to protect the environment. They disagree, however, on the role of sovereignty in achieving that goal. Many environmentalists say that sovereignty is an obstruction and must be removed. States, on the other hand, will not relinquish sovereignty and will use 'inviolability of sovereignty' as a rhetorical device to legitimate rejecting a policy or regulation - which does not involve their constitutional independence - that they simply oppose. State practice, however, suggests that restriction of autonomy through multilateral regulation is how sovereign states achieve environmental protection. Two relevant observations follow.

First, in the debate over international environmental regulation, the political rhetoric of states must be defused. States should not cloak themselves in the rhetoric of sovereignty when faced with regulations that affect their autonomy but do not undermine their constitutional independence, and admit that they dislike a proposed policy or regulation. Unfortunately, sovereignty remains such a powerful political term that states will likely continue to resort to it over whatever objections are made about its accurate use.

Second, there is a relevant observation for those seeking environmental protection. Given the attachment of states to sovereignty, both in rhetoric and in practice, the argument that sovereignty is a barrier and therefore must be disposed of is playing into the hands of those who are opposed to environmental regulation in any form. Not only is that argument unwarranted from an analytical point of view, but critics of sovereignty will be labelled as 'opponents of the state'. Their arguments about the conflicting relationship between sovereignty and environmental interdependence will be used as a reason for inaction, and their efforts to protect the environment will be dismissed. Their own argument works against the goal they seek.

Global environmental problems are too serious to be disregarded in this manner. A discussion based on the analysis of this paper centering on how solutions to environmental problems could be achieved and facilitated through interstate cooperation on environmental regulation would be more productive than a divisive dialogue between environmentalists and those opposed to environmental regulation over the status of

sovereignty. A clearer understanding of the concepts presented in this thesis, in other words, would not only enlighten observers and officials, but lead to improved, and more expeditious, cooperation on environmental issues of global importance.

NOTES

1 Robert O. Keohane, "International Institutions: Two Approaches," International Studies Quarterly 32 (1988): 379-396.

2 See Hedley Bull, The Anarchical Society: A Study of Order in World Politics (London: MacMillan Education Ltd., 1977), 293.

3 For a discussion under the structural realist framework, that "structure constrains behaviour", see Detlef Sprinz and Tapani Vahtoranta, "The Structural Explanation for International Pollution Control: Determinants of Support for the Protection of the Ozone Layer and the Abatement of Acid Rain," (Paper prepared for 33rd International Studies Association (ISA) Convention, Atlanta, 1992). Their position concentrates on why some states "drag" their feet on international environmental regulation. Additionally, a more traditional realist perspective, that international cooperation on the environment will result only from state interest and power, and not from other variables, (such as the nature of the environment issue) can be found in Matthias Kaelberer, "State Power and International Environmental Cooperation: A Comparison of Collaborative Efforts on Global Warming and Ozone Layer Depletion," (Paper presented at the 33rd ISA Convention, Atlanta, 1992).

4 There are observers who argue that the whole notion of sovereignty has been 'reified', and no longer serves to further political community. See R.B.J. Walker and Saul H. Mendlovitz, eds., Contending Sovereignties: Redefining Political Community (Boulder: Lynne Rienner Publishers, 1990).

5 Robert H. Jackson, Quasi-States: Sovereignty, International Relations, and the Third World (Cambridge: Cambridge University Press, 1990), 32.

6 Alan James, Sovereign Statehood: The Basis of International Society (London: Allen and Unwin Ltd., 1986), 263.

7 See Mark W. Zacher, "The Decaying Pillars of the Westphalian Temple: Implications for International Order and Governance," in Governance Without Government, eds. James N. Rosenau and Ernst Otto Czempiel (Cambridge: Cambridge University Press, 1992), 60, 63.

8 Zacher, 58. Kenneth Waltz would argue that anarchy, or the lack of an international sovereign, is the organizing principle of the international system; this, however, is contingent on the existence of multiple sovereign states. See Kenneth N. Waltz, Theory of International Politics (Reading, MA: Addison-Wesley, 1979), 88.

9 Stephen D. Krasner, "Sovereignty: An Institutional Perspective," Comparative Political Studies 21, no.1 (April 1988): 66-94.

10 F.H Hinsley, Sovereignty (New York: Basic Books Inc., 1966), 1 (emphasis added). See also, K.J. Holsti, International Politics: A Framework for Analysis, 6th ed. (Englewood Cliffs: Prentice Hall, 1992), 40; James, 3; Krasner, 86.

11 Hinsley, 158.

12 Ingrid Delupis, International Law and the Independent State (Epping: Gower Press Ltd., 1974), 3; Bull, 8.

13 Martin Wight, Systems of States (Atlantic Heights, N.J.: Humanities Press, 1977), 113. Wight also notes that some see the other 'starting point' of the western states-system as 1494, with the Burgundian succession and the invasion of Italy. See Wight, esp. 111-113; Wight himself sees neither as absolute but as part of the historical development of the states-system.

14 Holsti, 40.

15 This is the argument as it is presented in James, Sovereign Statehood, 24. See also, C.A.W. Manning, The Nature of International Society (London: G. Bell and Sons, 1962).

16 As will be argued below, a state may exhibit control over people living within a well-defined territory, but unless that state is constitutionally independent, it is not considered sovereign. The discussion in this paper does not consider questions about the effective control over territorial areas in which the status of sovereignty is unclear (such as polar regions). Sovereignty remains the organizing principle of the international system, and this inquiry seeks to analyze the impact of environmental interdependence on sovereign units.

17 Keohane, 385-86. See also Gerhard von Glahn, Law Among Nations: An Introduction to Public International Law, 6th ed. (New York: MacMillan Publishing Company, 1992), 88. A related point is the reciprocity inherent in an international system based on the sovereignty of its units. As Martin Wight has noted, reciprocity is an important norm implied by sovereignty:

It would be impossible to have a society of sovereign states unless each state, while claiming sovereignty for itself, recognized that every other state had the right to claim and enjoy its own sovereignty as well (Wight, 135).

This norm allows the international system to function as an organization of sovereign entities, or a 'society of states'. Recognition has a more specialized meaning in international law, relating to "the acknowledgement of the existence of a new state or a new government in an existing foreign state, coupled with an expression of willingness by the recognizing state to enter into relations with the recognized entity or government". See Glahn, 85.

18 See Glahn, 87. Similarly, James argues that "recognition presupposes a state's existence...it does not create it"; see James, esp. 147-48. It should also be noted that international law does not bestow sovereignty on a state either, but

presupposes the existence of sovereign states to which international law can be applied.

19 James, 18. Elsewhere, despite differences over the exact character of sovereignty, Hinsley responds to this question in a similar manner to James by stating that sovereignty is the essential criteria for membership in the international community: "the quality of sovereignty in the individual state will continue to be an essential qualification, in law as in practice, for membership in the international community". See F.H. Hinsley, "The Concept of Sovereignty and the Relations Between States," in In Defense of Sovereignty, ed. W.J. Stankiewicz (New York: Oxford University Press, 1969), 287.

20 This discussion is based on James, esp. 37-59.

21 Jackson, 35. He rounds out this list of 'rules' with jurisdiction, making and honouring of treaties, diplomacy conducted in accordance with accepted practices, and, more broadly, a framework of international law. Perhaps it should be explicitly stated that one of the problems with the traditional interpretations of sovereignty is exactly this: that the corollaries of sovereign status are confused with the actual character of sovereignty itself. As is argued below, the character of sovereignty is distinct from the attributes that flow from it.

22 Keohane 385. For similar judgements, see Jackson, 3; and C.H. McIlwain, Constitutionalism and the Changing World (Cambridge: Cambridge University Press, 1939), 30.

23 James, 40.

24 Alan James, "Comment on J.D.B. Miller," Review of International Studies 12 (1986): 91-93.

25 This is a similar metaphor to the one used by James, 47.

26 See, for example, Jacques Maritain, "The Concept of Sovereignty," in Stankiewicz, ed., 41-64.

27 Keohane, 385.

28 Some observers equate sovereignty with 'independence'; however, are states independent if they are independent from each other legally or if they independent from the effects of each other's actions? Or both? The difficulty involved in answering such questions shows the problems of a definition of sovereignty which involves elements of relativity. This is one problem in equating sovereignty with 'political independence'. James argues that sovereignty understood as 'political independence' (as opposed to constitutional independence) is conceptually fuzzy because it involves elements of both 'freedom' and 'success'. That is, one state may have more 'freedom' than another if it is somewhat self-sufficient and unencumbered by relationships and links with other states (it is autonomous and non-interdependent); however its policies may be 'unsuccessful' by making little impression on the world or by failing to achieve

objectives. Another state, however, could be considered to possess less 'freedom' due to links with other states while being more 'successful' in its policies due to the achievement of its goals. Are these states equivalent in independence? Is that a useful understanding of the sovereignty? While nothing restricts speaking of sovereignty as political independence *per se*, as noted in the text, sovereignty is usually said to be a basic concept in international relations, and thus could reasonably be expected to possess some measure of clarity. Of fundamental importance, furthermore, is the *distinction* between what it is that makes a state eligible for membership in the international community - that is, the recognition of sovereignty, understood as *constitutional* independence - and autonomy or independence. It seems unhelpful, then, to equate sovereignty with independence when a more precise usage is available. See James, 188-193.

29 James, 54.

30 James, 24.

31 Thus, 'sovereignty association' with Canada as a singular idea is clearly misleading. If Quebec becomes sovereign, it is constitutionally separate from Canada. The addition of 'association' has nothing to do with sovereignty *qua* sovereignty, as many sovereign states can have 'associations' with other sovereign states. The one association a sovereign Quebec cannot have with Canada, however, is a constitutional one. Quebec would either be sovereign, or it would not be sovereign (as is currently the case); the issue of other links, or 'associations', with Canada is another matter altogether (albeit an important one).

32 See Oran R. Young, "Interdependencies in World Politics," International Journal 24, no.4 (Autumn 1969): 726-750, and Robert Keohane and Joseph Nye, Power and Interdependence (Boston: Little, Brown and Company, 1977). For specific citations from these scholars, see below p. 15.

33 Richard N. Cooper, The Economics of Interdependence: Economic Policy in the Atlantic Community (New York: McGraw-Hill, 1968), 4 (emphasis in original).

34 Holsti, 96-97.

35 Holsti, 97.

36 It is generally thought that the widening cost-benefit ratio of war, international normative constraints, and a decrease in the importance of territory for international power have contributed to the high survival rate of states. See Zacher, "The Decaying Pillars of the Westphalian Temple," esp. 71-72; and K.J. Holsti, Peace and War: Armed Conflicts and International Order, 1648-1989 (Cambridge: Cambridge University Press, 1991), esp. 307-311.

37 For a good synopsis of the development of these interdependencies, see Zacher, esp. 76-96. For a discussion

which is more uncertain about the premise that the level of interdependence is rising, see Karl W. Deutsch, The Analysis of International Relations (Englewood Cliffs: Prentice Hall, 1968); and R. Rosecrance, et al., "Whither Interdependence?" International Organization 31, no.3 (Summer 1977): 425-471.

38 Young, 726.

39 Young, 726.

40 Keohane and Nye also acknowledge that "interdependence restricts autonomy"; see their Power and Interdependence, 9.

41 There is also an 'opportunity benefit' which results from being able to channel more resources - which are no longer needed because there is mutual restriction of autonomy by states who contribute to the problem - into other areas. For example, the Canadian government can spend less money on cleaning up the Great Lakes if the United States is spending money on clean up as well. This is a further example of autonomy enhancement. For reasons of scope and space, however, the analysis of this paper will confine itself to how autonomy has been reduced through multilateral environmental agreements.

42 Young, 727 (emphasis added).

43 While it is true that some states may have superior abilities to deal with the impacts of climate change, for instance, this does not mean that they escape the effects of climate change altogether. Richer states may be able to afford 'technical fixes' that others cannot (see for example, Frederick S. Myers, "A Technical Fix for the Greenhouse," Science 256 (22 May 1992): 1144.). Similarly, while some states are more directly dependent on the environment than others, a high level of interdependence would suggest that burdens placed on some (eg. the potential for serious repercussions in the agriculturally based developing world) will effect in other ways (eg. through economic problems or political instability) those who can cope with the direct results of the environmental problem. In the climate change scenario, all of this is contingent on the extent to which climate change is or is not going to be a serious problem. Only the young science of climatology will be able to assist us here; see chapter five below. On other issues, however, such as depletion of the ozone layer, greater levels of perceived threat led to international action; see chapter four below.

44 Some bilateral environmental situations are also termed cases of *dependence*; that is, one country can be said to be 'environmentally dependent' on another. The Canadian-American relationship with regards to water quality and acid precipitation, for example, has been described as one of "environmental dependence" (with the degree of damage to Canada being 'dependent' on their larger neighbour's SO₂ emissions). See Donald Munton and Geoffrey Castle, "Air, Water and Political Fire: Development of a North American Environmental Regime," in Canadian Foreign Policy and International Economic Regimes, eds.

Claire Cutler and Mark Zacher (Vancouver: University of British Columbia Press, 1992), 297, 315.

45 James, 192 (emphasis added). Raymond Aron argued in a similar vein that "the great illusion of our times...is that economic and technological interdependence among various factions of humanity has definitely devalued the fact of...the existence of distinct states". See his Peace and War (New York: Praeger Press, 1967), 748.

46 Jackson, 33.

47 International relations scholars are not the only guilty party, however; for a perspective from international law, see Philippe J. Sands, "The Environment, Community and International Law," Harvard International Law Journal 30, no.2 (Spring 1989): 393-420.

48 Dennis Kavanagh, "Beyond Autonomy? The Politics of Corporations," in Beyond Sovereignty and Integration, ed. Ghita Ionescu (London: Croom Helm, 1974), 47.

49 Kavanagh, 47.

50 Young, 728.

51 Holsti, International Politics, 97.

52 Jessica Tuchman Mathews, "Redefining Security," Foreign Affairs 68, no.2 (1989): 162-177; Jessica Tuchman Mathews, ed., Preserving the Global Environment: The Challenge of Shared Leadership (New York: W.W. Norton and Co., 1991).

53 Mathews, Preserving the Global Environment, 31, 27.

54 David D. Newsom, "The new diplomatic agenda: are governments ready?" International Affairs 29 (1989): pp.29-41.

55 Marvin S. Soroos, Beyond Sovereignty: The Challenge of Global Policy (Columbia: University of South Carolina Press, 1986), 295, 374.

56 World Commission on Environment and Development (WCED), Our Common Future (Oxford: Oxford University Press, 1987), 301.

57 Richard A. Falk, This Endangered Planet: Prospects and Proposals for Human Survival (New York: Random House, 1971).

58 Krasner, 86.

59 Consequences of increased exposure to harmful ultraviolet radiation include damage to agriculture, increased skin cancer and cataract rates, and damage to immune systems. See F. Sherwood Rowland, "Chlorofluorocarbons and the Depletion of Stratospheric Ozone," American Scientist 77 (January/February 1989): 36-45.

60 As was communicated in another metaphor:

An island's accessibility from a nearby continent may so improve that we may tend to forget that it is any longer an island. Reaching it by subway, or by rail across a bridge, we may mistake it for a part of the mainland. But its technical insularity will remain unimpaired, not being a matter of relative practical inaccessibility. Though linked with the mainland by a bridge, an island it still will be.

See C.A.W. Manning, The Nature of International Society, 166. It might be added that pollution reaching the island's shores from the mainland does not undermine its status as an island either.

61 See, for example, P.C. Mayer-Tasch, "International Environmental Policy as a Challenge to the National State," Ambio 15, no.4 (1986): 240-243. See also, Ruth Lapidoth, "Sovereignty in Transition," Journal of International Affairs 45, no.2 (Winter 1992): 325-346.

62 Waltz, 95.

63 WCED, Our Common Future, 301.

64 The most obvious example is Jessica T. Mathews, "Redefining Security". Others have made similar claims; see for example Bruce Byers, "Ecoregions, State Sovereignty, and Conflict," Bulletin of Peace Proposals 22, no.1 (1991): 65-76; and Norman Myers, "Environmental Security," Foreign Policy 74 (1989): 23-41.

65 For a reasoned response to 'redefined' national security, see Daniel Deudney, "The Case Against Linking Environmental Degradation and National Security," Millenium 19, no.3 (1990): 461-476.

66 Lynton K. Caldwell, International Environmental Policy, 2nd ed. (Durham: Duke University Press, 1990), 311; Lynton K. Caldwell, "International Responses to Environmental Issues: Retrospect and Prospect," International Studies Notes 116, no.1, (Winter 1991): 3.

67 The implicit 'other' in Caldwell's statement here is likely *de jure* sovereignty. However, if the features of sovereignty as constitutional independence are recalled, sovereignty is not divisible in this manner. An alternate, and perhaps more plausible explanation, would distinguish between sovereignty and autonomy.

68 Caldwell, International Environmental Policy, 311.

69 Quoted in Caldwell, 68.

70 Caldwell, 60.

71 Maurice F. Strong, "ECO '92: Critical Challenges and Global Solutions," Journal of International Affairs 44, no.2, (Winter 1991): 287-300.

72 James, 186.

73 James, 1, 16.

74 "Convention on the Rights and Duties of States", 165 League of Nations Treaty Series 19.

75 "Resolution On Permanent Sovereignty Over Natural Resources", 2 International Legal Materials 223 (hereafter cited as I.L.M.); and 1973, U.N. Doc. A/9400 (1973).

76 "Declaration of the United Nations Conference on the Human Environment", Report of the United Nations Conference on the Human Environment, 1972, A/Conf.48/14/Rev.1 (hereafter cited as Stockholm Declaration). "The Rio Declaration on Environment and Development" (hereafter cited as Rio Declaration), draft version reprinted in U.N. Association - Vancouver, Bulletin (Spring 1992): 4-5.

77 "Treaty for Amazonian Cooperation", 17 I.L.M. 1045 (1978).

78 Latin American and Caribbean Summit, "Declaration of Brazilia", 28 I.L.M. 1303 (1989).

79 "The Amazon Declaration" (done at Manaus), 28 I.L.M. 1303 (1989).

80 Rio Declaration, Principle 2; see note 76 above.

81 Oran Young, "Interdependencies in World Politics," 743.

82 "Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Spaces and Under Water" (1963, hereafter cited as PTBT), 2 I.L.M. 889 (art. 1, para 1(a) and 1(b)). See also Thomas Schmalberger, In Pursuit of a Nuclear Test Ban Treaty: A Guide to the Debate in the Conference on Disarmament (New York: United Nations Institute for Disarmament Research, 1991), 24.

83 Raimo Vayrynen, "From a Partial to a Comprehensive Test Ban," Disarmament 12, no.4 (Winter 1988-89): 17-24. See also Emanuel Adler, "Seasons of Peace: Progress in Postwar International Security," in Progress in Postwar International Relations, eds. Emanuel Adler and Beverly Crawford (New York: Columbia University Press, 1991), 156; Jozef Goldblat and David Cox, "The Debate About Nuclear Weapons Tests," CIIPS Occasional Papers n.5, (1988): 17; Marvin S. Soroos, "From Stockholm to Rio: The Evolution of Global Environmental Governance," in Environmental Policy in the 1990s, 2nd ed., eds. Norman Vig and Michael Kraft (Congressional Quarterly Press, forthcoming).

84 Vayrynen, 17. The Threshold Test Ban Treaty, regulating the magnitude of allowable underground nuclear explosions, was signed in 1974.

85 Jim MacNeil, Pieter Winsemuis, and Taizo Yakushiji, Beyond Interdependence: The Meshing of the World's Economy and the Earth's Ecology (New York: Oxford University Press, 1991), 115.

86 PTBT, 2 I.L.M. 889, Preamble and art. 1, para 1(b). Vayrynen, 18.

87 Schmalberger, 14. The news is not all good however. The International Commission to Investigate the Health and Environmental Consequences of Nuclear Weapons Production recently released a report which estimates that nuclear weapons testing by the U.S., U.S.S.R., the U.K., France, and China will eventually lead to around 2 million extra cancer deaths. See Matthias Finger, "The Military, the Nation State and the Environment," The Ecologist 21, no.5 (Sept-Oct. 1991): 220-225. Additionally, there are the 'domestic' problems which may result from the routine venting of radioactive gases, the risks of groundwater contamination, and the geological stresses which could lead to even greater releases of radioactive material. See Gareth Porter and Janet Welsh Brown, Global Environmental Politics (Boulder: Westview Press, 1991), 112.

88 Vayrynen, 18.

89 "Convention on Long-Range Transboundary Air Pollution" (1979, hereafter cited as LRTAP Convention) 18 I.L.M. 1442, art. 2.

90 LRTAP Convention, articles as cited in text. See also Amy A. Fraenkel, "The Convention on Long-Range Transboundary Air Pollution: Meeting the Challenge of International Cooperation," Harvard International Law Journal 30, no.2 (Spring 1989): 447-476; and C. Ian Jackson, "A Tenth Anniversary Review of the ECE Convention on Long-Range Transboundary Air Pollution," International Environmental Affairs 2, no.3 (Summer 1990): 217-226.

91 See Arne Tollan, "The Convention on Long-Range Transboundary Air Pollution," Journal of World Trade Law 19 (Nov-Dec 1985): 621; and Marc Levy, "European Acid Rain: The Power of Toteboard Diplomacy," unpublished paper (Harvard University, 1991), 10.

92 "Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on the Reduction of Sulphur Emissions or Their Transboundary Fluxes by at Least 30 Per Cent" (1985, hereafter cited as Helsinki Protocol) 27 I.L.M. 698, art. 2.

93 Helsinki Protocol, art. 4.

94 See Levy, esp. 26-33; and Fraenkel, 471.

95 "Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution Concerning the Control of Emission of Nitrogen Oxides or Their Transboundary Fluxes" (1988, hereafter cited as Sofia Protocol) 28 I.L.M. 212, art. 2, para. 1.

96 Sofia Protocol, art. 2, para. 3(a).

97 Levy, 33-39. Those twelve countries were Austria, Belgium, Denmark, Finland, France, Germany, Italy, Liechtenstein, Netherlands, Norway, Sweden, and Switzerland.

98 "Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Long-term financing of the Cooperative Programme for monitoring and evaluation of the Long-Range Transmission of Air Pollutants in Europe (EMEP)" (1984, hereafter cited as EMEP Protocol) 24 I.L.M. 484, art. 3, paras. 1, 2, 4.

99 EMEP Protocol, Annex.

100 There is also a wider question here of 'regime effectiveness'; that is, to what degree did which states make reductions and commitments resulting from the influence of the protocols or the wider 'air pollution regime'? These considerations are beyond the scope of the paper, but are discussed especially by Levy; see his article cited above, n.91. See also Porter and Brown, esp. 71-74.

101 Tollan, 621.

102 Telephone interview with Environment Canada official, 30 June 1992.

103 LRTAP Convention, art. 17. See also EMEP Protocol, art. 11; Helsinki Protocol, art. 12; Sofia Protocol, art. 16.

104 "Early end predicted for ozone-reducing CFCs," Globe and Mail, 29 February 1992; Elizabeth P. Barratt-Brown, "Building a Monitoring and Compliance Regime Under the Montreal Protocol," Yale Journal of International Law 16 (1991): 519-570; "India May Need Over \$2 Billion to Develop CFC Alternatives," Environment News Service (Daily) 3, no.52 (17 March 1992).

105 The London Amendments to the Montreal Protocol stipulate phaseout by 2000 for CFCs 11, 12, 113, 114, 115, Halons 1211, 1301, 2402, and ten other fully halogenated CFCs, carbon tetrachloride, and methyl chloroform (2005). Many of these compounds were not even covered in the initial Protocol. See "Report of the Second Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer," U.N. Environment Programme (U.N. Doc. UP/OzL.Pro.2/3 (1990)), Annex I, art. 2, paras. 2A, 2B, 2C, 2D, and 2E; hereafter cited as London Amendments. Many developed nations, including Canada and the U.S., have unilaterally adjusted their phaseout deadlines to 1996 and 1995 respectively.

106 London Amendments, Annex II, art. 10; Annex IV, app. IV. See also, Armin Rosencranz and Antony Scott, "Bringing the Developing World on Board," Environmental Policy and Law 20, no.6 (1990): 201-203.

107 See London Amendments, Annex II, art. 4, para. 1 and 2.

108 See 1987 Final Act of "Montreal Protocol on Substances that Deplete the Ozone Layer," 26 I.L.M. 1541, art. 4, para. 3 and 6; and London Amendments, Annex II, art. 4, para. 3.

109 See Rosencranz and Scott, 202.

110 "Early end predicted for ozone-reducing CFCs," Globe and Mail, 29 February 1992.

111 There has been some problem with delinquency in payments, notably by Britain and France. See Globe and Mail article cited above, n.110.

112 See Joel A. Mintz, "Progress Towards a Healthy Sky: An Assessment of the London Amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer," Yale Journal of International Law 16 (1991): 571-82.

113 See Barratt-Brown, 536.

114 London Amendments, Annex III. See also, Mintz, 580.

115 The list of likely topics for the Copenhagen meeting was obtained in a telephone interview with an Environment Canada official, 26 June 1992.

116 See Ivan L. Head, On a Hinge of History: The Mutual Vulnerability of South and North (Toronto: University of Toronto Press, 1991), 96; Peter M. Morrisette, "The Evolution of Policy Responses to Stratospheric Ozone Depletion," Natural Resources Journal 29 (Summer 1989): 793-820; Bryce Blegan, "International Cooperation in Protection of Atmospheric Ozone: The Montreal Protocol on Substances that Deplete the Ozone Layer," Denver Journal of International Law and Policy 16 (1988): 413-428; and Marvin Soroos, "From Stockholm to Rio," 14.

117 There has been at least one observer, however, who has mistakenly characterized the Montreal Protocol as an instance where state sovereignty is sacrificed. See Bruce Byers, "Ecoregions, State Sovereignty, and Conflict," esp. 72.

118 Donella H. Meadows, Dennis L. Meadows, and Jorgen Randers, Beyond the Limits: Confronting Global Collapse, Envisioning a Sustainable Future (Toronto: McClelland and Stewart Inc., 1992), 159.

119 Barratt-Brown, 532. The Withdrawal article is found in London Amendments, art. 19, and stipulates that the provisions of para. 1 of art. 2A must be fulfilled before withdrawal is allowed. This paragraph is not the phaseout requirement, but a requirement only to freeze CFCs at 1986 levels.

120 David A. Wirth and Daniel A. Lashof, "Beyond Vienna and Montreal: Multilateral Agreements on Greenhouse Gases," Ambio 19, no.6-7 (October 1990): 305-310.

121 For recent discussions of the state of 'greenhouse science', see the special reports in Science 256 (22 May 1992); and Chemical and Engineering News (27 April 1992). See also, Bette Hileman, "Global Warming," Chemical and Engineering News (13 March 1989): 25-44.

122 Porter and Brown, 92. See also, Wirth and Lashof, 305.

123 Richard A. Kerr, "Greenhouse Science Survives Sceptics," Science 256 (22 May 1992): 1138. For a dissenting view about the state of greenhouse science and the generally anticipated negative impacts, see Jesse H. Ausubel, "A Second Look at the Impacts of Climate Change," American Scientist 79 (May/June 1991): 210-221. Ausubel argues for an "image" of climate change that takes greater account of the human capacity for social learning and adaptation. His main concern seems to be, however, not that climate change may negatively affect millions of peoples' quality of life (especially in poor countries), but that we (presumably the rich developed states) may "misplace" some quite large investments.

124 Bette Hileman, "Web of Interactions Makes It Difficult to Untangle Global Warming Data," Chemical and Engineering News (27 April 1992): 10. A recent meeting of the IPCC (January 1992 in China) reinforced this conclusion; see EPA Regional Climate Change News 2, no.1 (4 March 1992). For work that incorporates the IPCC update and analyzes the implications of the new scenarios, see T.M.L Wigley and S.C.B. Raper, "Implications for climate and sea level of revised IPCC emissions scenarios," Nature 357 (28 May 1992): 293-300. They conclude, briefly, that although global-mean temperature and sea level change projections are reduced from the 1990 IPCC conclusions, these rates are still four to five times those that have occurred over the past century and are certain to present a considerable challenge to humanity.

125 Hileman, 11.

126 Porter and Brown, 92; Wirth and Lashof, 306. Such an observation also speaks to Ausubel's sceptical argument as noted above, n.123.

127 Caldwell, International Environmental Policy, 267.

128 The 1990 IPCC Report (presented at the SWCC) is divided into three parts as follows: (1) an executive summary of two pages; (2) a policy-makers summary of approximately 20 pages; and (3) full Working Group reports of more than 300 pages. See "No Agreement on CO2 Reductions," Environmental Policy and Law 20, no.6 (1990): 196. The full report of Working Group III (Response Strategies Working Group - RSWG), with a policy-makers summary, can be found in the UNEP and WMO published volume Climate Change: The IPCC Response Strategies (Washington, D.C.: Island Press, 1991). For work incorporating the new data and methodology, see the paper by Wigley and Raper cited above, n.124.

129 "No Agreement on CO2 Reductions", 196. "Second World Climate Conference: Ministerial Declaration," art. 11, reprinted in Environmental Policy and Law 20, no.6 (1990): 220-232.

130 The call for negotiations is found in art. 28 of the Ministerial Declaration cited above, n.129.

131 EPA Regional Climate Change News 2, no.1 (4 March 1992).

132 See Bette Hileman, "Earth Summit Concludes With Agenda for Action, but Little Funding," Chemical and Engineering News (6 July 1992): 7-17. The text of the U.N. Framework Convention on Climate Change, hereafter cited as Framework Convention on Climate Change, is Annex I of U.N Document A/AC.237/18(Part II)/Add.1.

133 Framework Convention on Climate Change, art. 4, para. 2(a) and (b).

134 Framework Convention on Climate Change, art. 4, para. 3.

135 Framework Convention on Climate Change, art. 4, para. 7.

136 Edward S. Rubin, et al., "Realistic Mitigation Options for Global Warming," Science 257 (July 1992): 148.

137 See, for example, "Canada urged to stay on target," The Globe and Mail, 9 May 1992, A8. Not all of the scientific community, at least, is troubled by the achievement of 'only' a framework convention. *Nature*, as a journal, has advocated the framework agreement approach partly so as to avoid the inevitable disappointment that would result from a failed protocol, partly due to the recognition that the precedent of a framework convention followed by more binding protocols has proved possible, and partly because the best strategies have not yet been fully examined and are not likely even possible at this stage. This should not, however, be construed as being supportive of the approach that climate change is not a problem; the journal also explicitly emphasized that global warming is already a serious problem and presents a "threat to the continued habitation of the surface of the earth by people". See "Dangers of disappointment at Rio," Nature 357 (28 May 1992): 265-266.

138 Those domestic programs are the National Energy Strategy, the 1991 Transportation Act, the Clean Air Act of 1990, and the EPA's voluntary 'Green Lights' program. See Bette Hileman, "CO2 Emission Reductions: US Programs to Yield Big Cuts by 2000," Chemical and Engineering News (4 May 1992): 4-5.

139 "CO2 Emissions Reductions: Global Pact Calls for Nonbinding Cuts," Chemical and Engineering News (18 May 1992): 4. Nevertheless, critics contend that the Climate Convention should have been much stronger than the Vienna Convention because the science of global warming is more mature than the science of ozone depletion was in 1985.

140 France committed \$100 million annually; Japan committed \$1.4 billion annually to all development assistance; and the U.S. will give \$25 million directly for climate change initiatives. See "Rio Earth Summit: Meeting Ends With Hope, Disappointment," Chemical and Engineering News (22 June 1992): 4. Canada has committed to contributing to the trust fund for climate to enhance observing systems in developing countries, as well as to assisting at least two developing countries to develop emissions inventories in 1993; exact totals are not yet available. See

"Climate Change Convention: Canada Proposes a 'Quick-Start' Agenda", Canadian Government Document of the UNCED, 8 June 1992.

141 The requirements (of all Parties) to develop, update, publish, and report national inventories of anthropogenic sources and removals by sinks of greenhouse gases and to formulate, implement, and publish national (and/or regional) programmes containing measures to mitigate climate change are found in art. 4, para. 1(a) and (b) of Framework Convention on Climate Change.

142 Such a meeting would be under the auspices of the Intergovernmental Negotiating Committee which designed the Framework Convention; see "Climate Change Convention: Canada Proposes a 'Quick-Start' Agenda", Canadian Government Document of the UNCED, 8 June 1992. The implementation section (in one sentence) is art. 13 of Framework Convention on Climate Change.

143 Framework Convention on Climate Change, art. 25.

144 See, for example, Porter and Brown, 93; and Rubin et al., 148. For a more general discussion about the cost-effectiveness of pollution prevention, see Donella H. Meadows et al., Beyond the Limits, esp. 96-87.

145 Lynton K. Caldwell, Between Two Worlds: Science, the Environmental Movement, and Policy Choice (Cambridge: Cambridge University Press, 1990), 83.

146 Frederick S. Myers, "Japan Bids for Global Leadership in Clean Industry," Science 256 (22 May 1992): 1144-1145.

147 It might be argued that the development of the EC is clearly an example of the demise or reduction of individual nations' sovereignty within a larger constitutional arrangement. While the EC certainly is evidence of 'merging', at least in as far as it is a process of economic integration, it is less than clear that it represents the demise of sovereignty in Europe. With respect to environmental policy within the EC, for example, political power remains in the hands of its members. It has been suggested that sovereignty "remains a powerful force in European politics." (See Michael G. Huelshoff and Thomas Pfeiffer, "Environmental Policy in the EC: neo-functional sovereignty transfer or neo-realist gate-keeping?" International Journal (Winter 1992): 136-158.) The Treaty of Maastricht, touted as the beginning of political integration in Europe which could conceivably evolve into a situation where the sovereign status of individual European states becomes questionable, has been seriously setback. Denmark has already refused ratification, and without ratification by all EC states, the Treaty is technically void. ("Danish rejection of union jolts EC," Globe and Mail, 4 June 1992, A1; "Denmark's Signals: A 'No' to Europe Points Up Anxieties on Sovereignty," New York Times, 4 June 1992, A6; "Mutiny rocks the EC ship of state," Financial Post, 8 June 1992, 43.) Even in that part of the world where integration is proceeding most substantially, then, there are still serious reservations about sacrificing sovereignty and the constitutionally independent prerogative of freedom of decision.

148 Hinsley, Sovereignty, 226.

149 Holsti, 97.

150 Soroos, 352; Caldwell, 82. See also, Oran Young, "Global Environmental Change and International Governance," Millennium 19, no.3 (1990): 337-346; and Robert W. Hahn and Kenneth R. Richards, "The Internationalization of Environmental Regulation," Harvard International Law Journal 30, no.2 (Spring 1989): 421-446. That the state remains *the* key actor in the international system is more generally, of course, a core realist assumption. In addition to those listed above, it is also accepted by many liberals. See, for example, Zacher, 61

151 James, 278. Others sharing this view are Holsti, 59; Krasner, 90; and Beverly Crawford, "Towards a Theory of Progress in International Relations," in Adler and Crawford, eds., 449.

152 Marc A. Levy, Robert O. Keohane, and Peter M. Haas, "Institutions for the Earth: Promoting International Environmental Protection," Environment 34, no.4 (May 1992): 12-36.

153 Levy, Keohane, and Haas come to a similar conclusion, albeit via a different route; that is, their discussion focuses on the role of international institutions in promoting international environmental protection by states. See their "Institutions for the Earth", cited above, n.152.

SELECTED BIBLIOGRAPHY

- Adler, Emanuel, and Beverly Crawford, eds. Progress in Postwar International Relations. New York: Columbia University Press, 1991.
- Benedick, Richard Elliot. Ozone Diplomacy: New Directions in Safeguarding the Planet. Cambridge: Harvard University Press, 1991.
- Bull, Hedley. The Anarchical Society: A Study of Order in World Politics. London: MacMillan, 1977.
- Caldwell, Lynton K. International Environmental Policy. 2nd ed. Durham: Duke University Press, 1990.
- Carroll, John E. International Environmental Diplomacy: The Management and Resolution of Transfrontier Environmental Problems. Cambridge: Cambridge University Press, 1988.
- Cooper, Richard N. The Economics of Interdependence: Economic Policy in the Atlantic Community. New York: McGraw-Hill, 1968.
- Delupis, Ingrid. International Law and the Independent State. Epping: Gower Press Ltd., 1974.
- Falk, Richard A. This Endangered Planet: Prospects and Proposals for Human Survival. New York: Random House, 1971.
- Hinsley, F.H. Sovereignty. 2nd ed. Cambridge: Cambridge University Press, 1986.
- Holsti, K.J. International Politics: A Framework for Analysis. 6th ed. Englewood Cliffs: Prentice Hall, 1992.
- Ionescu, Ghita, ed. Between Sovereignty and Integration. London: Croom Helm, 1974.
- Jackson, Robert H. Quasi-States: Sovereignty, International Relations, and the Third World. Cambridge: Cambridge University Press, 1990.
- James, Alan. Sovereign Statehood: The Basis of International Society. London: Allen & Unwin Ltd., 1986.
- _____. "Comment on J.D.B. Miller." Review of International Studies 12 (1986): 91-93.
- Keohane, Robert O. "International Institutions: Two Approaches." International Studies Quarterly 32 (1988): 379-396.
- Keohane, Robert O. and Joseph S. Nye. Power and Interdependence: World Politics in Transition. Boston: Little, Brown and Company, 1977.

- MacNeil, Jim, Pieter Winsemuis, and Taizo Yakushiji. Beyond Interdependence: The Meshing of the World's Economy and the Earth's Ecology. New York: Oxford University Press, 1991.
- McIlwain, C.H. Constitutionalism and the Changing World. Cambridge: Cambridge University Press, 1939.
- Manning, C.A.W. The Nature of International Society. London: G. Bell and Sons, 1962.
- Mathews, Jessica Tuchman, ed. Preserving the Global Environment: The Challenge of Shared Leadership. New York: W.W. Norton and Co., 1991.
- Miller, J.D.B. "Sovereignty as a source of vitality for the state." Review of International Studies 12 (1986): 79-89.
- Piddington, Kenneth W. "Sovereignty and the Environment: Part of the Solution or Part of the Problem?" Environment 31, no.7 (September 1989): 18-39.
- Porter, Gareth and Janet Welsh Brown. Global Environmental Politics. Boulder: Westview Press, 1991.
- Soroos, Marvin S. Beyond Sovereignty: The Challenge of Global Policy. Columbia: University of South Carolina Press, 1986.
- Stankiewicz, W. J., ed. In Defense of Sovereignty. New York: Oxford University Press, 1969.
- Walker, R.B.J., and Saul H. Mendlovitz, eds. Contending Sovereignties: Redefining Political Community. Boulder: Lynne Rienner Publishers, 1990.
- Waltz, Kenneth. Theory of International Politics. Reading, MA: Addison-Wesley, 1979.
- Wight, Martin. Systems of States. Atlantic Heights, N.J.: Humanities Press, 1977.
- World Commission on Environment and Development (WCED). Our Common Future. Oxford: Oxford University Press, 1987.
- Young, Oran R. "Interdependencies in World Politics." International Journal 24, no.4 (Autumn 1969): 726-750.
- Zacher, Mark W. "The Decaying Pillars of the Westphalian Temple: Implications for International Order and Governance." In Governance Without Government, eds. James N. Rosenau and Ernst Otto Czempiel. Cambridge: Cambridge University Press, 1992.