

International Cooperation

**BUILDING REGIMES
FOR NATURAL RESOURCES
AND THE ENVIRONMENT**

Oran R. Young

International Cooperation

BUILDING REGIMES FOR NATURAL RESOURCES
AND THE ENVIRONMENT

ORAN R. YOUNG

CORNELL UNIVERSITY PRESS

Ithaca and London

Copyright © 1989 by Cornell University

All rights reserved. Except for brief quotations in a review, this book, or parts thereof, must not be reproduced in any form without permission in writing from the publisher. For information, address Cornell University Press, Sage House, 512 East State Street, Ithaca, New York 14850.

First published 1989 by Cornell University Press.

First printing, Cornell Paperbacks, 1989.

Third printing 1993.

International Standard Book Number (cloth) 0-8014-2214-0

International Standard Book Number (paper) 0-8014-9521-0

Library of Congress Catalog Card Number 88-19078

Printed in the United States of America

*Librarians: Library of Congress cataloging information
appears on the last page of the book.*

⊗ The paper in this book meets the minimum requirements of the American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

International Coc

A895

NEW TEXT

DENISON BOOKSTORE

\$

A volume in the series

Cornell Studies in Political Economy

EDITED BY PETER J. KATZENSTEIN

A full list of titles in the series appears at the end of the book

Preface

The ideas this book presents regarding international regimes and, more generally, institutional arrangements in international society have been a long time in the making. I first seized on the term *regime* in 1973 while working on a study of the international relations of resource management with particular reference to the North Pacific or, to be more precise, the region known to natural scientists and archeologists as Beringia. This study resulted in a paper for the conference "Lawmaking in the Global Community" at Princeton University in 1975 and culminated in a book entitled *Resource Management at the International Level: The Case of the North Pacific* (Frances Pinter Ltd. and Nichols Publishing Co., 1977), in which I spoke of a regime "as a system of governing arrangements for a given social structure or region" (p. i). While I no longer use quite the same vocabulary in characterizing regimes, this early formulation did capture a good deal of the essence of what regime analysis has subsequently sought to illuminate.

Even so, my early usage of the term *regime* was rather casual. The concept was a handy device for organizing a mass of observations about working arrangements in a stateless social system (that is, international society). But it did not, at that stage, have much in the way of conceptual or analytic underpinnings. At the time, therefore, it did not occur to me that regime analysis would become a lively focus of attention among students of international relations.

The next phase in the evolution of my thinking about regimes occurred in a different context. In 1977, I began teaching courses on the political economy of natural resources. In this connection, I sought to pinpoint the determinants of social or group choices regarding the human use of natural resources and environmental services. The search

led me increasingly to zero in on structures of property rights, lesser property interests (such as usufructuary rights, mineral leases, and limited-entry permits), and liability rules—in short, institutional arrangements. In the process, I came to see resource regimes as a subset of social institutions and to realize that this linkage would open up a rich vein of conceptual and theoretical ideas that could be brought to bear on the study of regimes. These efforts culminated in a book on the political economy of natural resources entitled *Resource Regimes: Natural Resources and Social Institutions* (University of California Press, 1982).

Meanwhile, my interest in the role of institutional arrangements in international society grew steadily. Above all, this line of thinking offered a means of interpreting the remarkable degree of stability or order that exists in international society, despite the absence of conventional governmental agencies at the international level. My efforts along these lines began to come together in an essay entitled “International Regimes: Problems of Concept Formation,” which I prepared originally for presentation at the annual meetings of the International Studies Association in 1979 and which now forms the basis of the argument I present in chapter 1 of this book. But my thinking about international regimes really crystalized in the course of my participation in workshops on international regimes held in Los Angeles in October 1980 and in Palm Springs in February 1981. These workshops not only stimulated my thinking about institutional arrangements in international society, they also helped me to see how my own evolving ideas about international regimes differed from the ideas of a number of my colleagues. For this, I owe a debt of gratitude to Stephen Krasner, who was the principal organizer of these workshops and who edited the volume entitled *International Regimes* (Cornell University Press, 1983) which emerged from these sessions.

In the course of the 1980s, these separate streams of analysis converged to produce the present volume on international regimes for natural resources and the environment. I have no doubt that issues pertaining to natural resources and the environment are now on the international agenda to stay. The dramatic growth in public awareness of problems involving radioactive fallout, acid deposition, the depletion of stratospheric ozone, and the global warming trend has seen to this. Moreover, I am now convinced that regime analysis offers an appropriate vehicle for tackling problems of this kind. Applied in a rigorous and innovative fashion, these tools can help us to devise institutional arrangements to cope with transboundary environmental problems as well as to deepen our comprehension of the bases of stability or order in international society. Accordingly, I hope this book will serve as an

intellectual springboard for those beginning to grapple with the rapidly expanding agenda of transboundary environmental issues. Certainly, I expect to follow this line of enquiry myself during the foreseeable future.

I take this opportunity to express my thanks to all those who have contributed to my thinking about international regimes over the years. Assorted colleagues have helped me to escape at least some of the pitfalls of this research program over the better part of two decades. I am especially grateful to those who have resisted the whole idea of regime analysis or persisted in pointing out vague and imprecise elements in this way of thinking. These colleagues are too numerous to mention individually here; I owe a large debt of gratitude to all those who regularly contribute their time and energy to ensure that an invisible college operates effectively among students of international relations.

I want particularly to offer thanks to those who helped in the final phase of transforming my work on international regimes into the present book. Each time we met in recent years, my longtime friend Nicholas Onuf provided impetus by invariably asking when I was going to get around to preparing a book of this sort. Roger Haydon of Cornell University Press triggered this final transformation by writing to enquire whether I was intending to produce a book on international regimes. Friedrich Kratochwil and Peter Katzenstein, who read the first draft of the completed manuscript for Cornell University Press, were enormously helpful in persuading me to make substantial revisions in preparing the final draft. While exhausted authors do not always welcome suggestions for serious revisions at this stage, I am especially grateful to them for the clarity and incisiveness of their criticisms. Though I alone am responsible for the remaining shortcomings of the book, I can say with certainty that the final product would have been far less satisfactory without the help I received from all these colleagues along the way.

ORAN R. YOUNG

Wolcott, Vermont

Acknowledgments

Chapter 1 is based on a paper presented at the annual meetings of the International Studies Association in March 1979; an earlier version appeared as "International Regimes: Problems of Concept Formation," *World Politics* 32, no. 3 (April 1980), 331–356. Copyright © 1980 by Princeton University Press. Adapted with permission of Princeton University Press. Chapter 2 is a revision of a paper presented at the American Political Science Association annual meetings in August 1986. Chapter 3 originated as a presentation at the annual meetings of the International Studies Association in April 1987. Chapter 4 began as a paper for a workshop on international regimes organized by Stephen Krasner; an earlier version appeared as "Regime Dynamics: The Rise and Fall of International Regimes," in *International Organization* 36, no. 2 (1982), 277–297, and in Stephen D. Krasner, ed., *International Regimes* (Ithaca: Cornell University Press, 1983), 93–113. Adapted with permission of The MIT Press and the World Peace Foundation.

Chapter 5 is a much-revised version of an essay prepared for a conference at Resources for the Future in Washington, D.C., and published as "International Resource Regimes," in Clifford S. Russell, ed., *Collective Decision Making: Applications from Public Choice Theory* (Baltimore: Johns Hopkins University Press for Resources for the Future, 1979), 241–282. Copyright © 1979 by Resources for the Future. The writing of an earlier version of chapter 6 was supported by The Annenberg Washington Program in Communications Policy Studies and was delivered at their forum "Global Disasters and International Information Flows," October 1986. Chapter 7 is a revised version of "The International Politics of Arctic Shipping: An American Perspective," in Franklyn Griffiths, ed.,

ACKNOWLEDGMENTS

The Politics of the Northwest Passage (Montreal: McGill-Queen's University Press, 1987), 115–133.

An earlier version of chapter 8, cast in the form of a review essay, appeared as "International Regimes: Toward a New Theory of Institutions," *World Politics* 39, no. 1 (October 1986), 104–122. Copyright © 1986 by Princeton University Press. Adapted with permission of Princeton University Press. Chapter 9 is based on a preliminary and much less substantial paper prepared for delivery at the annual meetings of the American Political Science Association in September 1983.

O.R.Y.

International Cooperation

Contents

Preface	vii
Acknowledgments	xi
Introduction: The Problem of International Cooperation	1
PART ONE INTERNATIONAL REGIMES IN THEORY	
Prologue	9
1. International Regimes: An Institutional Perspective	11
2. Patterns of International Cooperation: Institutions and Organizations	31
3. The Power of Institutions: Why International Regimes Matter	58
4. Regime Dynamics: The Rise and Fall of International Regimes	81
PART TWO INTERNATIONAL REGIMES IN PRACTICE	
Prologue	107
5. Comparative Statics: Regimes for the Marine Fisheries and Deep-Seabed Mining	109
6. Regime Formation as Contract Negotiation: Nuclear Accidents	145
7. Regime Formation as Conflict Resolution: Arctic Shipping	165
PART THREE REGIME ANALYSIS: PRESENT STATUS AND FUTURE PROSPECTS	
Prologue	191

CONTENTS

8. Analysis: Toward a New Theory of International Institutions	193
9. Praxis: Institutional Design in International Society	216
Index	237

INTRODUCTION

The Problem of International Cooperation

A persistent strand of Western social thought envisions harmony as a natural outgrowth of the interactions of autonomous actors (whether individuals, corporations, or nation states). The invisible hand of perfectly competitive markets, a mechanism that is said to transform the self-interested actions of numerous buyers and sellers into collective outcomes that are efficient in allocative terms, undoubtedly constitutes a paradigm for this line of thought. But it is easy, not to mention comforting, to assume that similar processes are at work in other realms, including interactions among the members of international society. On this account, cooperation is the normal condition of human affairs. It is therefore unnecessary to embark on any elaborate or time-consuming effort to explain the occurrence of cooperation in specific social arenas or issue areas. A happy consequence of this situation, moreover, is that we need not devote any great amount of time or energy to the search for devices to overcome tendencies toward disharmony or to promote enhanced cooperation.

This line of thought is certainly appealing, suggesting as it does that it is ordinarily safe for individuals to concentrate on pursuing their own ends without worrying about the collective consequences of their behavior. Unfortunately, however, it runs directly counter to some of the most powerful and well-documented findings produced by social scientists working in a variety of fields, including international relations. As almost everyone understands by now, rational egoists making choices in the absence of effective rules or social conventions can easily fail to realize feasible joint gains, ending up with outcomes that are suboptimal

(sometimes drastically suboptimal) for all parties concerned.¹ It does not even take extreme conflicts of interest, like those known to game theoreticians as zero-sum conflicts, to produce collective outcomes that are socially undesirable or, in other words, to generate collective-action problems.² Any situation that exhibits the characteristics of the coordination problem, a form of interdependent decision making that need not involve any conflict of interest at all, can eventuate in a collective outcome in which the participants fail to realize perfectly feasible joint gains.³ And the probability that such suboptimal outcomes will occur generally rises as the number of participants increases. Much the same is true of mixed motive or competitive/cooperative situations that display the essential features of what game theoreticians call "chicken" or "battle of the sexes."⁴ But the classic exemplar of these problems of collective action is undoubtedly the prisoner's dilemma, a theoretical construct that many analysts have scrutinized closely in abstract terms and applied repeatedly to the world of international relations as well as to numerous other substantive realms.⁵ With alarming frequency, those forced to make choices in situations resembling the prisoner's dilemma experience severe difficulties in achieving the level of cooperation needed to avoid mutual losses.⁶

A similar message flows from the emerging literature on situations involving what Cross and Guyer call "inappropriate reinforcement structures [that] give rise to traps."⁷ Such traps occur when initial rewards or

1. Such phenomena, grouped under the rubric of collective-action problems, constitute a principal preoccupation of the growing literature on public choice. For a theoretically sophisticated review of these problems consult Russell Hardin, *Collective Action* (Baltimore: Johns Hopkins University Press, 1982).

2. A zero-sum conflict is a situation in which the preferences of the players or participants over the set of available alternatives are strictly or diametrically opposed. Though the zero-sum condition has proven theoretically fruitful, most analysts would agree that zero-sum conflicts are the exception rather than the rule under real-world conditions. For a comprehensive discussion of zero-sum "games" see Anatol Rapoport, *Two-Person Game Theory* (Ann Arbor: University of Michigan Press, 1966).

3. Problems of this type stimulated Schelling's well-known analysis of focal points and salience. For a seminal account of the coordination problem consult Thomas C. Schelling, *The Strategy of Conflict* (Cambridge: Harvard University Press, 1960), especially chap. 4.

4. For an early but classic treatment of these situations see R. Duncan Luce and Howard Raiffa, *Games and Decisions* (New York: Wiley, 1957).

5. Consult Glenn H. Snyder and Paul Diesing, *Conflict among Nations* (Princeton: Princeton University Press, 1977); Thomas C. Schelling, *Micromotives and Macrobehavior* (New York: Norton, 1978), chap. 7; and Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984).

6. Anatol Rapoport and Albert M. Chammah, *Prisoner's Dilemma: A Study of Conflict and Cooperation* (Ann Arbor: University of Michigan Press, 1965).

7. John G. Cross and Melvin J. Guyer, *Social Traps* (Ann Arbor: University of Michigan Press, 1980), 34.

reinforcements lead to learned behavior or habits that subsequently produce" consequences that the victims would rather avoid."⁸ Situations of this sort become social traps "when many victims are caught in parallel, when escapes from individual traps are influenced by social action, or when there is a great deal of interaction among victims of the same trap."⁹ Traps arise in a wide range of social environments. They afflict nations caught in arms races as well as individuals locked into habits of smoking or drug addiction.

What is more, analysts have demonstrated again and again in studies of an empirical nature that the cooperation required to solve collective-action problems or to escape from social traps is elusive in the world of international relations. Wars frequently leave all the participants exhausted and faced with severe losses of welfare. Arms races commonly initiate action/reaction processes that serve only to reduce the security of all the participants.¹⁰ Trade wars featuring successive rounds of competitive tariffs or currency devaluations generally succeed only in reducing the overall economic well-being of the members of international society.¹¹ Competition in the consumptive use of renewable resources, such as fish or marine mammals, often precipitates a tragedy of the commons, a condition in which everyone loses as a result of the depletion or destruction of the resource.¹² Much the same is true of the degradation of large ecosystems that results from competitive efforts to exploit these systems for the purpose of disposing of residuals or wastes.¹³ Traplike behavior is equally widespread in international society. Less developed states, for example, are easily drawn into a pattern of borrowing without realizing the degree to which debt servicing will later constrain their economic options. And the short-run rewards associated with the use of renewable natural resources regularly give rise to patterns of consumption that are incompatible with conservation in that

8. Ibid., 4.

9. Ibid., 27.

10. Among students of international relations, this phenomenon has given rise to the concept of a security dilemma. See John H. Herz, *International Politics in the Atomic Age* (New York: Columbia University Press, 1959), and Robert Jervis, "Cooperation under the Security Dilemma," *World Politics* 30 (1978), 167–214.

11. For a well-known study of a classic case see Charles P. Kindleberger, *The World in Depression, 1929–1939* (Berkeley: University of California Press, 1973).

12. See also Garrett Hardin and John Baden, eds., *Managing the Commons* (San Francisco: W. H. Freeman, 1977).

13. For a range of perspectives on problems of the global commons consult Finn Solliet et al., *The Challenge of New Territories* (Oslo: Universitetsforlaget, 1974); Seyom Brown, Nina W. Cornell, Larry L. Fabian, and Edith Brown Weiss, *Regimes for the Ocean, Outer Space, and Weather* (Washington, D.C.: Brookings, 1977); and Oran R. Young, *Resource Management at the International Level* (London and New York: Pinter and Nichols, 1977).

they conflict with the requirements of achieving sustained yields over time.

These and other similar examples are surely sufficient to demonstrate that we can no longer afford the luxury of taking harmony for granted, especially in the context of international society. On the contrary, cooperation is a striking achievement whenever and wherever it occurs, and there is every reason to believe that cooperation will become more elusive in many realms as growing human populations, enhanced capabilities, and rising expectations generate more severe conflicts of interest as well as greater demands on the earth's natural systems.¹⁴

Does this mean, as many students of international relations have concluded, that there is now a compelling need for the creation of a world government, a central organization or public authority capable of restricting the sovereignty of individual states and bringing pressure to bear on the members of international society to comply with rules designed to ensure the achievement of cooperation?¹⁵ Not necessarily. By itself, the establishment of such a public authority cannot ensure the achievement of cooperation. We have known for some time that simply introducing organizational arrangements in the absence of the social conditions required to sustain cooperation is not sufficient to solve collective-action problems in any human society.¹⁶

Even more important, there are good grounds for concluding that the creation of a world government is not necessary to solve the problem of cooperation in international society. What this problem does suggest is that the members of international society will frequently experience powerful incentives to accept a variety of behavioral constraints in the interests of maximizing their own long-term gains, regardless of their attitudes toward the common good.¹⁷ Whether individual actors justify their behavior in terms of rule utilitarianism, a system of ethics, or some sort of nonutilitarian contractarianism is beside the point at this juncture. The fact is that it is easy to comprehend why the members of

14. For illustrations of the growing literature on this theme consult Barbara Ward and Rene Dubos, *Only One Earth: The Care and Maintenance of a Small Planet* (New York: Norton, 1972), and Richard A. Falk, *This Endangered Planet* (New York: Random House, 1971).

15. For a range of examples of the case for world government see Emery Reves, *The Anatomy of Peace* (New York: Harper, 1945); Cord Meyer, *Peace or Anarchy* (Boston: Little, Brown, 1947); and Grenville Clark and Louis B. Sohn, *World Peace through World Law*, 2d ed. (Cambridge: Harvard University Press, 1960).

16. For an elegant discussion of this point see Hedley Bull, *The Anarchical Society: A Study of Order in World Politics* (New York: Columbia University Press, 1977).

17. See also the essays in Stephen D. Krasner ed., *International Regimes* (Ithaca: Cornell University Press, 1983), particularly Robert O. Keohane, "The Demand for Regimes," 141-171.