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Breitmeier, H., Levy, M.A., Young, O.R. & Zuern, M.

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Helmut Breitmeier, Marc A. Levy, Oran R. Young, and Michael Zürn

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IIASA, International Institute for Applied Systems Analysis, A-2361 Laxenburg,
Austria

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INTRODUCTION

The analysis of international regimes rests on a collection of case studies, many of which contain carefully crafted causal inferences. Recently, some larger projects have begun to produce systematic comparisons of small numbers of regimes - usually 3 to 5 and never over 15 - in order to develop and test hypotheses about regime formation or consequences (Haas, Keohane, and Levy, 1993; Jacobson and Weiss, 1995; Hanf and Underdal 1997, Keohane and Levy 1996; Krasner, 1985; Rittberger 1990; Victor, Raustiala, Skolnikoff 1997; Wettestad and Andresen, 1991; Young and Osherenko, 1993). These studies have the virtue of providing rich descriptive accounts of the processes leading to regime formation in specific cases, the working of individual regimes and associated organizations, and, increasingly, the impacts of regimes on the issue areas to which they relate. But they leave much to be desired in terms of the generalizability of their findings. For the most part, the cases chosen for analysis do not constitute representative samples of the larger universe of international regimes. For understandable reasons, case selection in most studies has been driven by practical considerations instead of methodological requirements. Moreover, the choice of both dependent and independent variables for systematic attention in these small-n case studies has failed, in general, to produce a cumulative and consistent set of information on an agreed upon set of important variables. Each study, in practice, has tended to select idiosyncratic variables, or operationalize common ones in radically different ways.¹ As a result of these limitations, the study of international regimes stands out as somewhat peculiar in its absence of systematic, large-n studies making use of quantitative methods, methods which have advanced the state of the art in almost all other areas of political science.

Even so, the study of international regimes has already progressed beyond the production of scattered insights about the working of international institutions. Regime analysis has emerged as an enduring research program with common and comparable conceptualizations of the major issues that allow for competition among theoretical statements and provide a sound basis for empirical testing (Levy, Young and Zürn, 1995; Rittberger 1993). In addition, policy-makers are devoting increased attention to questions of international cooperation and institutions - should NATO membership be expanded, should China be allowed to join the WTO, how might the UN Security Council be reformed, and so on? These are questions that are directly related to much of the ongoing scholarship in the academic community. A particular

¹ The closest we find to an exception are variables dealing with structural power and with regime formation, both of which are covered in virtually every single regime study.

strength of this scholarship is that it has brought together scholars who have different perspectives - some emphasizing the role of power, others accentuating interests, and a third group stressing ideas - but who still have a common focus on the formation, operation, and effects of international regimes treated as social institutions consisting of agreed upon principles, norms, rules, procedures, and programs that govern the interaction of actors in specific issue areas. This rare occurrence of a research program based on a common conceptualization that has produced a sizable collection of qualitative case studies offers an unusual opportunity for further development.

We have sought to capitalize on the opportunity afforded by this promising beginning by constructing a database including comparable information on a sizable collection of international regimes. The International Regimes Database (IRD) is a computerized information system containing a wide range of information on a continuously growing collection of international regimes; plans are in place to include data sets on about 60 regimes by 2000.² The database is a research tool intended primarily for use by social scientists seeking to expand knowledge regarding the formation, effectiveness, and dynamics of regimes. The value of this knowledge for practitioners responsible for establishing and operating specific regimes should also be substantial.

The database can contribute to the growth of knowledge about regimes in at least five ways, each of which addresses a common problem plaguing research based on purely qualitative case studies.

- The database provides a common structure for individual case studies, thereby improving the compatibility of case studies carried out by different scholars and enhancing prospects for comparative analysis.
- The database helps those looking at specific cases focus on the issues that will permit drawing justifiable inferences from their cases. The database facilitates the use of theory in efforts to understand individual cases.
- The database makes it possible to test specific hypotheses about regime formation, dynamics, and consequences in a systematic way.

² For a list of cases potentially to be coded during the first four years of the International Regimes Database see Appendix I; cases for coding will be initially selected from this list.

- The database helps to identify crucial cases requiring more intensive study. This facilitates the generation of new hypotheses and contributes to theory refinement.
- The database draws clear distinctions among different attributes of international regimes. This makes it a useful tool for practitioners seeking to design effective regimes.

In this essay, we endeavor to extract lessons from our experience in developing the IRD likely to prove helpful to those engaged in research that accords a featured role to case studies. The argument is addressed directly to those engaged in the analysis of international regimes, but many of our insights should prove helpful to students of other international phenomena as well. In Section 1, we ask: What is a case, and how can we be sure that those engaged in case studies start with a common conceptual framework regarding the basic structure of individual cases? In the process, we lay out a general conceptual frame for studying regime formation and regime consequences that builds on the experience of those who have already conducted case studies. Analysts who adopt this flexible frame will be able to expand our general knowledge of international regimes without losing sight of the details of their own cases. Section 2 provides an overview of the set of variables included in the database and comments on some of the judgments that went into the development of this analytic structure. Although many analysts will find it impractical or unnecessary to develop comprehensive case studies addressing all the variables in the database, it is important for them to locate their own work within this larger frame and to be aware of the potential role of variables omitted from their assessments.

The next three sections focus on different uses of the database on the part of those interested in the formation and performance of international regimes. Section 3 discusses the use of the database to explore hypotheses relating to the role of specific factors (e.g., the way the problem is framed, the depth of regulatory prescriptions, the character of decision rules) thought to be important determinants of regime formation or effectiveness. In the process, we comment on the shortcomings of purely qualitative research strategies and compare and contrast them with the strengths and weaknesses of quantitative methods featuring comparisons across sizable numbers of cases for which harmonized data are available. We conclude that the IRD can be a useful instrument in both qualitative and quantitative research in international institutions. Section 4 argues that there are

opportunities to make progress in theory development through intensive examinations of individual cases. To do so, however, it is necessary to consider crucial cases that lend themselves to efforts to explore the limits of generalizations relating to regime formation or the effectiveness of regimes. This requires a consideration of the reasons why certain regimes qualify as crucial cases, a process that is facilitated by access through the database to comparable information on a wide range of cases. Finally, Section 5 argues that regime analysis has focused so far almost exclusively on the question of whether international institutions matter; it has little to say about whether and how institutional design matters. By distinguishing systematically among a large number of institutional attributes or properties, the database provides opportunities to think systematically about this important practical and theoretical concern.

I. WHAT IS A CASE?

The case or unit of analysis for the IRD is the individual regime. We began work on the database aware of the existence of controversy about definitional matters relating to the concept of regime, but we thought that because of the underlying conceptual convergence on people's understanding of what regimes are, we would be able to identify relatively easily a more or less homogeneous universe of cases for potential consideration in the database. The first set of trial runs, however, made it clear that this was not true and that it would be necessary both to formulate some distinctions regarding the structural features of cases and to engage in negotiations with coders working on individual cases regarding how their cases map onto these structural distinctions. This resulted in the following formulations that are featured in what we now call the precoding agreement and which allow us to customize the computerized database protocol (a questionnaire asking for information on a large number of different variables) to suit the characteristics of specific cases.³

A regime is a social institution consisting of agreed upon principles, norms, rules, decision-making procedures, and programs that govern the interactions of actors in a specific issue area (Krasner, 1983; Levy, Young and Zürn, 1995). An

³ The precoding agreement is included in the data protocol of the International Regimes Database (Breitmeier/Levy/Young/Zürn 1996). The protocol can be obtained by writing Helmut Breitmeier, Technische Hochschule Darmstadt, D-64283 Darmstadt, Residenzschloß, Marktplatz 15 (email: breit@polihist.pg.th-darmstadt.de), or by pointing your worldwide web browser at <http://www.dartmouth.edu/~arctic/ird/>.

issue area is defined by reference to problem or problems that actors wish to manage. The scope of an issue area is subjectively defined, mainly on the basis of the perceptions of decision-makers and the organization of governmental structures within participating states (Haas 1980). Regimes are social practices that may encompass both a number of explicit agreements and a variety of informal understandings that produce varying degrees of convergence of expectations regarding the behavior of regime members. As such, regimes have temporal boundaries in the sense of starting points and, in some cases, end points. It is therefore necessary to identify: (1) the problem(s) to which the regime constitutes a response, (2) the external boundaries of the regime or, in other words, what is part of the regime and what is external to it or what constitutes the environment in which it operates, and (3) the internal boundaries of the regime, including discrete components of the regime itself and the temporal structure of the regime. The purpose of the precoding agreement is precisely to identify these three characteristics.

In general, international regimes are problem-driven in the sense that they come into existence to solve or manage problems that individual actors in international society are unable to cope with on their own. Yet there is often considerable scope for interpretation in framing these problems; participants do not always agree with each other regarding the nature of the problem, and specific regimes can deal with more than one subproblem at the same time. With respect to the first issue, we suggest describing the problem in terms of activities causing the problem or in terms of costs - of any kind - attributable to the problem. If it is hard to identify a problem unambiguously, it will be necessary to describe two or more problems underlying the regime and specify whether these are subproblems representing distinct elements of the issue area or alternative ways of framing the problem favored by different actors. The regime dealing with trade in chemicals and pesticides, for instance, illustrates the case of subproblems. It encompasses two subproblems, one pertaining to public health (especially in developing countries) and the other dealing with the harmonization of international trade. The Baltic Sea regime, by contrast, illustrates the case of differing perceptions of the same problem, since some participants treated the problem as one of marine pollution, while others saw it as a matter of finding a vehicle for expanding East-West cooperation.

The first fifty cases to be coded will all be international environmental regimes. There are many reasons for concentrating on environmental regimes at the beginning. The dramatic increase in environmental regimes in the past twenty years

has generated intense interest among practitioners as well as academics.⁴ There are also methodological benefits to be derived from clustering the initial regimes in a common broad issue area, in order to provide adequate controls and to provide a sufficient number of cases for hypothesis testing. That said, it is clear that there are also profound benefits to be had from eventually including other types of international regimes in the database. The most obvious of these benefits are that scholars and practitioners interested in other issues will be able to use the IRD, and that it will permit investigation of interesting questions having to do with whether the nature of the issue area affects the creation and operation of international regimes. Therefore we have always intended that eventually the IRD would expand to include regimes covering security, economic, human rights, and other issues. Our plan is that once the database covers 50 environmental cases we will start to code other types of regimes. Environmental regimes will continue to be coded as needed, but the emphasis will shift to other types.

Although regime formation is not an instantaneous process, it is useful for purposes of analysis to specify a temporal starting point for each case included in the database. Many regimes operate on an ongoing basis. But international regimes also go out of existence from time to time. When this happens, it is necessary to specify a termination point for the regime. In addition to these temporal boundaries, it is important to specify the substantive boundaries of regimes in the sense of differentiating between elements of the regime itself and features of the surrounding environment. Normally this involves identifying the regime's constitutive elements, whether these are formal agreements or informal understandings. The questions for each case study, then, are: When did regime formation occur? Is there more than one plausible starting date for this case? Did the regime cease to exist? If so, when did termination occur?

We normally date the establishment of a regime from the signing of a document (whether legally binding or not) in which the parties agree to the constitutive provisions of an institutional arrangement. Of course, most regimes

⁴ Two simple illustrations will help make the point: (1) In his April 1996 speech at Stanford University, Secretary of State Warren Christopher announced a set of environmental initiatives which included a major conference to be organized by the State Department in 1998 on the subject of the implementation (and effectiveness) of international environmental agreements; and (2) during the past ten years several high-profile academic bodies, including the NSF, the National Academy of Sciences, and the Social Science Research Council, among others, have created programs to address the "human dimensions of global change", an area in which knowledge on international environmental cooperation is highly pertinent.

continue to grow over time through the deepening of cooperation or the extension of functional scope. A regime ceases to exist, on the other hand, if (1) there is a temporal discontinuity in the operation of the regime, and (2a) there is no identifiable successor or (2b) the successor involves a fundamental change in terms of leading actors or the definition of the problem producing new governing principles/key norms that are at odds with the old ones. Temporal discontinuity takes place when a complete cessation of regime activities occurs or actors no longer feel obliged to justify actions that contradict regime obligations or one or more essential parties abrogate the agreement. To illustrate, the North Pacific fur seal regime came into existence long before World War II but did not operate during the war years. Because it resumed after the war without significant changes in leading actors or in guiding principles/norms, it should be analyzed as one regime. The failure of the United States to agree to an extension of this regime during 1984-1985, on the other hand, terminated the arrangement. Similarly, despite the emergence during the 1970s and 1980s of governing principles at odds with those articulated in the 1946 convention, we treat the whaling regime as one case because there was no discontinuity in the operation of the regime.

We have found that it is also helpful to make distinctions among both analytically differentiable components and temporal watersheds within the same regime. These distinctions are not as fundamental as those described in the preceding paragraph; they pertain to differences within regimes rather than between regimes. Yet it is often necessary to make use of such distinctions to formulate intelligible answers to questions included in the database's protocol. Regimes frequently encompass two or more distinct institutional arrangements - we call them components - that together make up the regime as a whole. Many questions included in the database protocol apply to individual components rather than to the overall regime. In some but not all cases, it is possible to identify a single component (e.g., a framework convention) as the regime's core with other components (e.g., substantive protocols) occupying positions ancillary to the core. We distinguish separate regime components if there are (1) distinct institutional forms (e.g., separate treaties, protocols, annexes) and (2) one or more of the following conditions obtains: (2a) the distinct forms deal with different subproblems (see above); (2b) they cover differentiable sources of the problem (e.g., the European acid rain regime includes separate protocols regulating emissions of SO₂, NO_x, and VOCs in addition to its framework convention); (2c) the distinct forms are aimed at different regulatory targets (e.g., the global trade regime encompasses different rules for trade in

manufactured goods, agricultural goods, and services), and (2d) the distinct forms aim at different clusters of actors (e.g., the nuclear non-proliferation regime includes different norms and rules aimed at nuclear-weapon states and nonnuclear-weapon states). These distinctions lead to the following questions: Does the regime have two or more components? When did each of these components come into existence and become a part of the regime? Does one of these components constitute the core of the regime?

A watershed, in contrast to a transition from one regime to another, marks a major change within a regime and divides the regime into distinct time periods. A watershed occurs if there is (1) a temporal discontinuity in the operation of the regime, or (2) a significant restructuring of principles/key norms (the new principles need not necessarily be at odds with the old ones), or (3) a significant change in the group of leading actors, or (4) a significant expansion in functional scope (e.g., a radical deepening of regulative rules). In cases involving watersheds, the database includes separate questions covering the periods before and after the watershed.

In addition to the three main characteristics of the regime (dates of operation, components, and watersheds), we also ask questions about individual actors who are especially important within the issue area in question. In cases where there are only a few actors, it is possible to supply data on all those participating in the formation and operation of a regime. A growing number of cases, however, involve too many actors to cover exhaustively. In such cases, it is necessary to identify the most important actors for purposes of answering actor-specific questions. Thus, we ask which five or six actors are the most important for purposes of answering questions relating to a case that are actor-specific. Factors to consider in answering this question include: (1) major role in causing the problem(s), (2) major role (potential or actual) in solving the problem(s), (3) major role in creating the regime, and (4) major role in developing strategies to implement the provisions of the regime. To be relevant to competing analytical perspectives (and to permit more accurate understanding) we do not restrict the identification of important actors to states, but permit non-governmental organizations and individual leaders to be identified as well.

Identifying important actors and supplying information about each of them complicates the structure of the database and its coding. However, practical and analytical imperatives made it unavoidable. Practically, we found that it was impossible to answer many interesting questions about regime formation or regime

consequences in the aggregate. Actors participated in the formation process with different motives and strategies, and likewise reacted to the regime's operation quite differently depending on whether they supported the regime's goals, whether they had the capacity to implement its provisions and so on. Questions that elicited vague, tentative or highly qualified answers in the aggregate (if answered at all) elicited precise, confident answers when framed with respect to individual actors. Analytically, we realized that constructing reliable causal models of regime effects required data on the important causal impacts that regimes have on important actors.

II. DATABASE ARCHITECTURE

Armed with this characterization of the individual case, we can turn to issues pertaining to the architecture of the database itself. Decisions about such matters are reflected in what we call the database protocol, which takes the form of a questionnaire that contributors use to supply information about the case they have agreed to code. In the course of our work on the IRD, it quickly became apparent that the development of such a protocol requires numerous decisions that have important consequences for both the information included in the protocol and the uses to which it can be put. In this section, we comment on some of the most significant of these decisions and briefly describe the contents of the resultant protocol.⁵

To begin with, it is necessary to draw a clear line between what is covered by the database and what factors are excluded from the database, even though they may be relevant to research in this area. For example, we do not include within the database itself information about the nature of international society as a whole (e.g., the distribution of power within this society), or about many characteristics of the members of international regimes (e.g. whether they are democracies or advanced industrial societies). This is not to say that such information is irrelevant to some aspects of regime analysis. Analysts may wish to explore questions regarding the extent to which various features of the international power structure are important to regime formation, or the extent to which regimes whose members are all democracies perform better than mixed regimes. But it is impossible to include all

⁵ For a list of questions of the IRD database protocol see Appendix II.

these matters without making the database completely unwieldy. Accordingly, those wishing to use the database to explore hypotheses of this sort will have to import data regarding some of their variables.

Even so, we faced a constant concern over the explosion of the database in the sense of expanding to include an unmanageable number of variables. There is an obvious tradeoff here. The greater the number of variables included, the wider the range of hypotheses that can be explored using information contained in the database. But overextension of the database not only prevents individual coders from supplying a complete data set for individual cases but also makes it extremely difficult to manipulate the database, even with the help of highly sophisticated computer software. In the end, we designed a structure for the IRD in which the coder responds to 136 “forms”, each of which generate values for from 1-10 individual variables. For many forms, each variable is coded for each component and time period and major actor. This pushes the outer limits of what is practicable but has the virtue of offering a relatively wide range of opportunities for those interested in different aspects of international regimes and their performance.

Even with a large set of variables, many difficult choices must be made regarding the structure of the database. All these choices reflect, explicitly or implicitly, judgments about what we want to know about regimes and where the analytical payoffs are likely to lie. The best that can be done in this connection is to select variables that are important in terms of major debates among current students of international regimes. Thus, we include variables dealing with material conditions, interests, and ideas relating to regime formation and with outputs, outcomes, and impacts in connection with regime consequences. But none of these choices is beyond criticism, and it is clearly impossible to tell what theoretical issues will constitute priorities for the field of regime analysis a decade from now. None of this prejudices the use of the database to study a wide range of important issues. But it does set boundaries on the utility of this information system.⁶

The variables included in the database also cover both straightforward factual matters and issues involving judgments on the part of coders. Thus, it is normally easy enough to specify exactly when a treaty establishing a regime is opened for signature, when it enters into force legally, and how many parties are members of a regime at any give time. But other questions are more subjective - for example, the

⁶ A more extensive discussion of the theoretical landscape that served to guide our construction of the database can be found in Levy, Young, and Zürn, 1995.

extent to which important actors agree on the nature of the problem a regime addresses, or the degree to which a regime exerts a causal influence on the behavior of actors in the relevant issue area. With regard to questions of this kind, the issue of inter-coder reliability obviously takes on increased importance, and it is important to treat information in the database with a certain measure of caution.⁷

In its final form, the database is also designed to allow both quantitative and qualitative analyses. Many of the questions (even where there is an element of judgment regarding answers included in the database) lend themselves to analyses seeking to look at relationships between or among key variables across a relatively large number of cases. This is particularly the case with regard to connections between various features of the regime formation process and the character of the regimes that emerge, and between various regime attributes and the performance of regimes. Other questions are designed to elicit information that is not readily comparable across regimes but which may prove highly useful to those seeking to understand the dynamics of a specific regimes. A notable feature of the database in this regard is the inclusion of a number of text fields that allow coders to add more or less extensive qualitative information about their cases.

The database protocol is made up of four sections, each of which includes a set of variables pertaining to a major area of interest to students of international regimes. The first section deals with regime formation and places primary emphasis on understanding the forces at work (e.g., power, interests, ideas) in efforts to form new regimes. This emphasis on origins is understandable in light of the remarkable growth in the number and variety of international regimes but also because of the conflicts and difficulties involved with lengthy negotiation processes and deadlocks or even outright failures of regime-building efforts (Young, 1989). Regime formation, a subject that encompasses the reformation of existing institutional arrangements as well as the creation of new institutions where none has previously existed, has emerged as one of the central concerns of the "new institutionalism" in international relations.

The second section focuses on regime attributes and asks for data on principles, norms, rules, decision-making procedures, and programs of regimes. This section amounts to an inventory of each regime's principal regulative, procedural, and programmatic elements. Regime analysts may make use of data on regime

⁷ Each case will be coded by two coders, allowing some assessment of inter-coder reliability.

attributes to assess both the performance and the evolution of regimes. The section also includes information on compliance mechanisms, decision rules, dispute settlement procedures, financial commitments, and organizational arrangements relevant to the design of effective international institutions. Regime analysts will also be able to comprehend changes in the attributes of regimes over time and to understand the evolution of attributes within different regime components.

The third section on regime consequences contains variables dealing with domestic and international effects attributable to regimes. Coders are asked to provide data about the "real world" effects of regimes at the international and the state level. This section starts with the outputs of a regime, including activities involved in operationalizing the regime's provisions and decision-making procedures and the first official steps required to translate a regime's provisions from paper to practice. It then moves to data regarding outcomes or behavioral changes at both the international and the domestic levels, including variables dealing with the aims states formulated for problem-solving and goal-attainment in connection with the regime, compliance by member states, activities of major agencies, and actions of those affected by the regime's rules. The section also focuses on the impacts of a regime including both issue-specific and broader consequences associated with the regime's operation. Such results encompass the regime's contribution to solving the problem(s) that motivated the parties to create it and the regime's contribution to learning about the nature of the problem as well as impacts on the distribution of values arising from the regime's activities.

The final section deals with matters of regime dynamics not captured in the first and third sections. Because the sections on regime formation and effectiveness allow coders to answer the same questions for the periods before and after fundamental changes in regimes (what we call watershed changes), data pertaining to some aspects of institutional dynamics are included in these sections. As a result, section four is shorter than the other sections. But it does include data on a number of matters (e.g., shifts in the behavior of regime members toward the regime, resilience of the regime when confronted with new challenges) that are required to answer certain important questions about the operations of international regimes.

The protocol is useful as a guide for research as well as a tool that we use for eliciting information for the database from coders. Students contemplating writing a

case study - for example, as part of a thesis - could use the data protocol as a guide to the most important elements of a full case study.

III. EMPIRICAL COMPARISONS AND CAUSAL INFERENCES

Narrative accounts exploring single cases in depth are valuable for a number of purposes. But their value is limited as a means of developing generalizable statements whose validity is not limited to the case(s) under consideration. The goal here is not to produce exhaustive accounts of specific instances of regime formation or the full range of consequences arising from specific regimes. Rather, the objective is to use the study of specific cases to formulate statements about causal relationships that apply to the whole universe of international regimes or to well-defined subsets of this universe. In effect, efforts to pinpoint the causal role of individual factors constitute exercises in theory development.

How can analysts make use of the IRD in the service of efforts to devise and refine theory regarding international regimes? Three strategies, which are not mutually exclusive, dominate the efforts of students of international regimes to build theories through an examination of actual cases. The regimes database is designed to provide a useful tool in connection with each of these strategies, which center on comparative empirical analysis, the assessment of counterfactuals, and causal modeling. To illustrate these uses of the regimes database, we focus in this section on the analysis of regime consequences, a topic that is especially challenging for those endeavoring to establish causal links. But the same logic also applies to regime formation and regime dynamics.

Undoubtedly, the most familiar strategy centers on empirical comparisons using sizable numbers of cases to frame and test generalizations about regularities in relationships between or among variables thought of as dependent variables and independent variables (Lijphardt 1975). The hypothesis that regimes are more effective when they have decision rules requiring something less than unanimity is a case in point. So also is the hypothesis that regimes are more effective when there is a dominant actor among their members. An empirical comparison in this context invokes a quasi-statistical procedure intended to solve the "ratio of number of variables to cases" problem that is inherent in qualitative case-study analysis (King, Keohane, and Verba, 1994). This procedure uses correlations to test hypotheses,

thus relieving individual case studies of the task of making causal claims. In this approach, dependent variables, which are framed in such a way that they do not imply causal inferences, are correlated with any of a variety of empirically observable independent variables.

We have taken a number of steps to ensure that the IRD will be useful to scholars wishing to undertake this sort of analysis. First, we have endeavored to operationalize each variable so that causal inferences are cleanly isolated from observable phenomena. For reasons that we explain below, we do not exclude causal inferences from the data we collect, but we do segregate the causal inference from the more strictly observable data. For example, the concept of "regime effectiveness" is of high importance to a number of research and policy agendas, but has a causal inference built into it (Levy, Young, and Zürn, 1995, p. 293). Therefore it could only safely be used as a dependent variable in comparative designs if these causal inferences were well known and uncontroversial, but that is seldom the case. What we have done is to code two distinct sets of questions related to effectiveness. On the one hand, we code a set of variables having to do with conformance with regime rules, domestic policy changes in accordance with broad regime objectives, and degree to which the problem that motivated the regime's creation has been solved. These are free of causal inference and suitable for correlational testing of hypotheses. On the other hand, we also code variables that ask, "To what degree is the regime causally responsible for these outcomes?". This enables us to capture the causally-sensitive effectiveness data without prejudicing use of the overall database by scholars who wish to undertake tests using variables that have no such inferences, and potential bias, embedded in them. For example, the protocol would elicit data on the reduction in tariff levels over the course of the GATT's history, and in a separate question ask what role GATT had in those reductions.

Under the circumstances, the method of empirical comparisons depends on the availability of a sizable number of cases for which comparable data are available. To identify regularities regarding the particular types or combinations of consequences that regimes produce requires a large enough sample to test hypotheses linking these variations in the dependent variable with a variety of independent determinants. Similar comments are in order about the impact of intervening variables that add complexity to the relationship between various driving forces and consequences produced by regimes. Thus, we want to ask not only whether there is some relationship between certain configurations of power and the

consequences regime produce but also whether this relationship is mediated by other factors ranging from the role of ideas to any of a number of attributes of the regimes themselves. The database will never contain enough cases to make it possible to subdivide the universe of regimes in terms of various intervening variables and still have large numbers of cases in the resulting cells. Yet, as a number of analysts have demonstrated convincingly, the basic logic underlying the method of empirical comparisons remains unchanged even when the number of cases available for analysis is not large enough to satisfy the requirements for the use of formal multivariate statistical procedures (King, Keohane, and Verba, 1994).

Given the limitations associated with empirical comparisons in the study of international regimes, it will come as no surprise that analysts have sought to bring to bear additional methods to shed light on our understanding of regimes. The IRD can offer help in the use of two of these methods. One centers on the use of what are generally known as counterfactuals (Fearon, 1991; Biersteker, 1993). While changes in an issue area occurring after regime formation are often discernible, for example, there are typically numerous variables unrelated to the regime that could account for these changes. The real measure of a given regime's effectiveness, therefore, requires comparing actual occurrences with what would have happened in the absence of the regime. Similar counterfactual logic is used in assessing other questions about regimes, for example the impact of consensual knowledge or individual leadership on regime formation. The use of counterfactuals in this sense involves the following procedure: the hypothesis is tested by constructing a scenario that excludes the independent variable and then comparing the real-world outcome with the outcome of the scenario. This research strategy is especially helpful to efforts to make causal claims when the number of independent variables is larger than the number of comparable cases, or when other circumstances prevent using correlational analysis, as often happens in studies of regimes. As Jorgen Wettestad and Steinar Andresen (1991) put it with respect to studies of regime effectiveness, understanding effectiveness requires calls for efforts to measure "the degree of improvement in relation to the hypothetical state of affairs that would have occurred had no international cooperation been initiated in the field in question."

Counterfactual analysis is difficult to perform well, but when done well it can significantly strengthen a causal claim. Ronald Mitchell (1994), for example, supports his convincing explanation of the effects of the regime designed to control intentional oil pollution from ships by analyzing at some length what would have been likely to

happen in the absence of the regime rules he thinks mattered most. In the course of delineating his counterfactual scenarios, Mitchell is able to rule out alternative hypotheses, for example that factors such as structural power explain the outcomes. In cases like Mitchell's, where techniques of correlational analysis are either not suitable or not sufficient, counterfactual analysis is often the primary technique for testing alternative hypotheses.

Mitchell uses counterfactual analysis skillfully. Yet it can be done badly. Jon Elster (1978, 1983), for example, maintains that it is often done under circumstances not warranted by the available theoretical and empirical knowledge. Elster's discussion leads us to tread cautiously. If, for example, a theory of regime effectiveness consists of a set of independent variables and includes a clear understanding of the relationships among them, the construction of a counterfactual that changes one independent variable without changing the others would be illegitimate in connection with that theory. If there is no understanding of the political dynamics of the issue area, on the other hand, the construction of a counterfactual scenario is pure speculation.

The IRD has been designed to assist scholars wishing to make use of counterfactual analysis well, while avoiding common pitfalls of the sort Elster mentions, in two specific ways. First, we have made sure to code variables that cover the main set of causal forces within the issue area in question, not restricting ourselves to regime variables only. For example, we have variables concerning national interests, issue-specific power resources, leadership, economic implications of regime rules, and so on. Variables such as these will assist scholars in constructing counterfactual scenarios by giving them a more or less complete picture of what kinds of causal forces were operating in the issue area that are independent of the regime.

The second thing we have done is to ask coders to make their causal judgments quite explicit, so that users of the database will be able to see precisely where causality is being alleged and therefore where they should focus efforts to test, support, or disprove. As mentioned above, one way we have done this is to separate questions about directly observable phenomena from those about causality. In addition, we frequently ask coders to provide textual elaboration about their causal judgments, so that the database will contain specific arguments about causality open to scrutiny by users.

A third strategy for studying regimes involves causal modeling. The idea underlying this approach is that there is no substitute for efforts to explore the behavioral mechanisms or pathways that link regimes and actual behavior. Only then can we be sure that the causal inferences we draw point to real connections rather than spurious relationships. One prominent example of this strategy, developed by Haas, Keohane, and Levy (1993), starts from the premise that actors are rational (though not necessarily well-informed) decisionmakers pursuing reasonably well-defined interests and seeking to maximize payoffs to themselves. This leads to an emphasis on the role of regimes in what have become known as the three C's: heightening concern, improving the contractual environment, and building capacity. Another approach adopts a more eclectic perspective and directs attention to a number of generative sources of actor behavior. These include the ideas that regimes can operate as (1) utility modifiers, (2) enhancers of cooperation, (3) bestowers of authority, (4) learning facilitators, (5) role definers, and (6) agents of internal realignments (Levy and Young, 1994). The emphasis in this strategy is on identifying the mechanisms through which regimes are expected to produce effects and observing whether or not these mechanisms are working. Causality is established through concrete observations of processes in contrast to outcomes.

Collecting data that contains causal models is prone to bias and error, and we are aware of this pitfall. To minimize its impact, we have adopted a number of strategies that we feel are of relevance to all scholars of international regimes. To a significant extent, the strategies mentioned above are directly helpful - asking separate questions about observed outcomes and about causal impacts, and asking for explicit causal arguments, are strategies that are quite beneficial to the construction of causal models. The major additional strategy we have employed to assist causal modeling is to make sure that for each case we have a complete narrative, written by the coders, explaining in prose what was going on at each major stage of the regime's life, with respect to each major set of variables in the database. For example, at the end of a long set of simple questions about the nature of the problem that prompted the regime's formation, the coders are asked to supply a paragraph describing the main features of the process that led to the regime's existence. Similar questions end each major section of the data protocol. These prose answers provide users of the database with an understanding of the underlying causal dynamics of each case (in the judgment of the expert coders) that would be otherwise opaque.

Needless to say, the use of causal modeling does not constitute a panacea for those endeavoring to understand international regimes. It bears a strong resemblance to genetic explanation in the sense of building up complex causal arguments on a case-by-case basis. In effect, the task is to identify the combination of factors that explain how specific regimes are able to produce results given the particular circumstances within which they operate. This can yield satisfactory accounts of the workings of individual regimes. But there is little basis for assuming that explanations developed in individual cases can be generalized to apply to other members of the larger set of international regimes. In the final analysis, we expect students of regime consequences to employ a suite of procedures featuring both variation-finding procedures of the sort we referred to in the discussion of empirical comparisons and tendency-finding procedures of the sort exemplified by causal modeling. The IRD is structured in such a way that it should prove useful to analysts whose work leans toward either of these alternatives.

IV. CRUCIAL CASES

Scientists working in many fields find it useful to focus on individual cases that are considered crucial in their efforts to understand complex phenomena (George, 1979; Eckstein, 1975; King, Keohane, and Verba, 1994). Cases may be particularly interesting for a number of different reasons, to which we will turn in a moment. But in every instance, the selection of crucial cases requires the availability of a larger universe of cases from which to choose. For the most part, that is, the extent to which a given case can be regarded as crucial turns on the similarities and differences between that case and others. In this connection, the IRD can present a range of cases within which the scholar can search for cases that are crucial in one respect or another.

What makes a case crucial? Some cases are of special interest because they constitute prototypes either of the entire universe of regimes or of some subset of this universe of particular concern in theoretical or applied terms. The objective here is to search for exemplars that can serve as representatives of identifiable classes of arrangements. The identification of such exemplars is not an easy task in connection with international regimes. Regimes vary greatly along a variety of dimensions, including membership, functional scope, geographical coverage, legal form, degree of formalization, institutional depth, and so forth. There are also legitimate questions concerning the extent to which environmental regimes differ from regimes operating in other issue areas, like economics, security, or human rights. But the search for prototypes is a worthwhile enterprise, and the existence of a database containing comparable information on a wide range of individual cases is an essential resource for any effort to pinpoint prototypes in this realm.

In other situations, analysts are primarily concerned with the examination of outliers or anomalous cases in contrast to prototypical cases. Anomalous cases are interesting both because they help to establish boundaries (e.g., where to draw the line regarding what to include in the basic category of regimes), and because they direct attention to unusual circumstances that may illuminate aspects of international institutions that are not easy to see in looking at mainstream cases. To some extent, the identification of anomalies is a function of the way key concepts are defined at the outset. In our work, for instance, regimes whose members are exclusively or predominantly non-state actors appear as outliers. Yet this is, in part at least, an artifact of the conventional practice of defining international regimes as devices for overcoming collective-action problems in a society of sovereign states. Even so, the

existence of a database containing similar information on a sizable number of cases is an invaluable resource for any effort to single out anomalous cases for in-depth consideration.

Another procedure that deserves attention in this discussion centers on the search for hard cases. A hard case, in connection with international regimes, is one in which conditions are highly unfavorable to either regime formation or to the operation of a regime in an effective manner. The assessment of hard cases is particularly attractive in efforts to determine whether regimes matter as determinants of the behavior of actors relevant to a given problem. A specific case may qualify as a hard case for a number of reasons. The problem involved may be malign in the sense that core values are at stake, the participants are concerned with relative gains, or conflicts of interest are particularly severe. The regime itself may be weak or poorly adapted to the problem at hand. Or there may be contextual factors (e.g., political turmoil within one or more of the important participants) that impede the operation of the regime. Hard cases present severe challenges to arguments about the significance of international regimes. If regimes are effective in hard cases, we can safely expect that they will have important roles to play in other cases as well. Once again, the regimes database offers an important tool for those seeking to sort the larger universe along the spectrum defined by the distinction between hard and easy cases.

Finally, individual cases may be of particular interest because they can play a role in the conduct of what natural scientists know as critical experiments. Theories normally predict a variety of occurrences that should be observable empirically. But many occurrences are compatible with any of several theories. The trick, then, is to identify some phenomenon that should occur if a given theory is correct and that should not occur if one or more of the rival theories is correct. The search for such phenomena gives rise to what are often called critical experiments. Regime analysis has not yet reached the stage where there are significant opportunities to conduct critical experiments. This will require the development of deductive theories that yield predictions of the sort that produce opportunities for the conduct of such experiments. If such theories do arise, however, the existence of a database containing large quantities of harmonized data about a sizable collection of individual regimes could prove invaluable as a source of empirical observations to be used in conducting critical experiments. Currently analytical generalizations are supported (or exceptions proffered) with reference to specific regimes that are drawn from a fairly

small universe of well-known cases, often without regard to whether these cases are appropriate given their broader social context or how representative they are in the broader universe of regimes. Building an international regimes database will help make the search for, and use of, critical cases more rigorous and effective.

V. POLICY RESEARCH

So far, we have been considering the uses of the IRD as a tool for those seeking to add to our knowledge of international institutions, either through the testing of various hypotheses or through the generation of new hypotheses about the formation and effectiveness of international regimes. But the database may also prove valuable to practitioners responsible for designing new regimes or operating existing regimes to best advantage. It is important to recognize that the database cannot serve as a cookbook for practitioners looking for simple recipes coupled with assurances that the product will conform to advance expectations. Even so, the database does contain large quantities of information that can be used to good advantage by practitioners.

The database has obvious value as a means of canvassing the options to be taken into consideration by those responsible for creating new regimes. Although all international regimes have certain things in common, it turns out that there is great variety among regimes on many dimensions, including rules, programs, decisionmaking procedures, funding mechanisms, compliance mechanisms, and connections to other regimes. What is more, there is a natural tendency for practitioners to think in terms of their own experience which normally encompasses no more than a small sample of the range of regimes. As a means of breaking out of the straightjacket of personal experience and identifying creative options for solving problems arising in conjunction with specific regimes, therefore, the database is a valuable tool. This is not to say that the database will provide simple alternatives that can be applied to new cases without adjustment - far from it. In most cases, practitioners will want to pick and choose among the available options in the interests of devising arrangements that are well-suited to the circumstances surrounding the case at hand. But use of the database can reduce the danger of overlooking options of great relevance but that do not loom large in the experience of those dealing with particular cases.

Going a step further, the database lends itself to explorations of the probable effects of arrangements being considered for inclusion in new regimes. To illustrate this point, we turn again to the issue of regime effectiveness. Those concerned with decision rules, for example, will want to know whether there is any well-defined relationship between effectiveness and the character of the decision rules (e.g., simple majority, weighted majority, consensus) that regimes employ to make collective or social choices. Others will inquire about the range of compliance mechanisms that regimes deploy and whether there are discernible links between effectiveness and the use of specific approaches to compliance and combinations of compliance mechanisms. Given the costs associated with the establishment of permanent secretariats, moreover, it is natural to ask both whether and when permanent secretariats make an identifiable difference in terms of the performance of regimes. Here, too, we stress that we are a long way from the formulation of simple recipes or rules of thumb that can be presented in the form of a handbook for regime design. Yet there can be no doubt that the kinds of assessments the database allows will help those responsible for designing regimes to avoid simple mistakes in their efforts to craft arrangements capable of solving a variety of problems at the international level.

VI. CONCLUSION

Basing itself largely on detailed studies of individual cases, regime analysis has achieved impressive results. It has established itself as a flourishing line of inquiry that appears to have considerable staying power among students of international relations. Yet we believe that further progress on this research program will benefit greatly from the development of a database containing comparable information of a growing collection of international regimes. The International Regimes Database, developed to meet this need, can be used to support both variation-finding analyses seeking to test hypotheses through empirical comparisons and tendency-finding analyses focusing on the use of counterfactuals and causal modeling. Additionally, the database offers an attractive resource for researchers looking for crucial cases and for practitioners endeavoring to design new regimes to achieve more or less well-defined goals.

The IRD also constitutes a source of insights for those seeking to conduct research that draws on case materials to go beyond the self-contained case study,

while stopping short of the large-scale quantitative analyses we associate with formal statistical procedures. We argue that the development of a database containing comparable or harmonized information on a sizable but still restricted number of cases opens up options for the application of a variety of analytic techniques that can add to our cumulative knowledge of the phenomena in question. Our own work focuses on the set of international regimes. But many phenomena of interest to social scientists share with these institutional arrangements characteristics that call for the use of such analytic techniques.

REFERENCES CITED

- Biersteker, Thomas, 1993, "Constructing Historical Counterfactuals to Assess the Consequences of International Regimes: The Global Debt Regime and the Course of the Debt Crisis of the 1980s," pp. 315-338 in Volker Rittberger, ed, *Regime Theory and International Relations*, Oxford: Clarendon Press.
- Breitmeier, Helmut, Marc A. Levy, Oran R. Young and Michael Zürn, 1996: "International Regimes Database: Data Protocol", IIASA Working Paper WP-96-154, Laxenburg.
- Eckstein, Harry, 1975, "Case Study and Theory in Political Science," in Fred Greenstein and Nelson Polsby, eds, *Handbook of Political Science*, Reading, MA: Addison-Wesley Press.
- Elster, Jon, 1978, *Logic and Society: Contradictions and Possible Worlds*, New York: Wiley.
- Elster, Jon, 1983, *Explaining Technical Change*, Cambridge: Cambridge University Press.
- Fearon, James, 1991, "Counterfactuals and Hypothesis Testing in Political Science," *World Politics* 43, 2 (January), 169-185.
- George, Alexander, 1979, "Case Studies and Theory Development," in Paul Laren, ed., *Diplomacy: New Approaches in History, Theory, and Policy*, NY: Free Press.
- Haas, Ernst B., 1980, "Why Collaborate? Issue-Linkage and International Regimes," *World Politics*, 32, 3 (April) 357-405.
- Haas, Peter M., Robert O. Keohane, and Marc A. Levy, eds., 1993, *Institutions for the Earth: Sources of Effective International Environmental Cooperation*, Cambridge, MA: MIT Press.
- Hanf, Kenneth and Arild Underdal, 1997 (forthcoming) *The Domestic Bases of International Environmental Agreements*, final report of a project funded by the European Commission.

- Jacobson, Harold K. and Edith Brown Weiss, 1995, "Strengthening Compliance with International Environmental Accords: Preliminary Observations from a Collaborative Project," *Global Governance* 1, 2, 119-148.
- Keohane, Robert O. and Marc A. Levy, eds, 1996, *Institutions for Environmental Aid: Pitfalls and Promise*, Cambridge, MA: MIT Press.
- King, Gary, Robert O. Keohane, and Sidney Verba, 1994, *Designing Social Inquiry : Scientific Inference In Qualitative Research*, Princeton, N.J. : Princeton University Press.
- Krasner, Stephen D., 1983, *International Regimes*, Ithaca, NY: Cornell University Press.
- Krasner, Stephen D., 1985, *Structural Conflict: The Third World Against Global Liberalism*, Berkeley: University of California Press.
- Levy, Marc A. and Oran R. Young, 1994, "The Effectiveness of International Regimes," paper presented at annual convention of the International Studies Association, Washington DC (29 March-1 April).
- Levy, Marc A., Oran R. Young, and Michael Zürn, 1995, "The Study of International Regimes," *European Journal of International Relations* 1,3 (Fall), 267-330.
- Lijphart, Arend, 1975: "The Comparable Cases Strategy in Comparative Research," *Comparative Political Studies* 8:2 (1975), 158-177.
- Mitchell, Ronald B., 1994, *Intentional Oil Pollution at Sea: Environmental Policy and Treaty Compliance*, Cambridge, MA: MIT Press.
- Rittberger, Volker, ed, 1990, *International Regimes in East-West Politics*, London: Pinter.
- Rittberger, Volker, ed, 1993, *Regime Theory and International Relations*, Oxford: Clarendon Press.

Victor, David, Kal Raustiala, and Gene Skolnikoff, eds, 1997 (forthcoming), *Implementation and Effectiveness of International Environmental Commitments*, Cambridge: The MIT Press

Wettestad, Jorgen and Steinar Andresen, 1991, *The Effectiveness of International Resource Cooperation: Some Preliminary Findings*, Oslo: Fridtjof Nansen Institute.

Young, Oran R., 1989, *International Cooperation: Building Regimes for Natural Resources and the Environment*, Ithaca, NY: Cornell University Press.

**APPENDIX I: CASES THAT COULD BE CODED DURING FIRST FOUR YEARS
OF INTERNATIONAL REGIMES DATABASE**