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The Continent of International Law

Barbara Koremenos

UNIVERSITÄT MANNHEIM

Barbara Koremenos

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Editorial Note:

During May and June 2009 Professor Koremenos was invited as guest lecturer at the MZES. Within the department "European Political Systems and their Integration" she worked together with Prof. Thomas König in the project "The Implementation of Community Law in the Member States".

Abstract

This working paper introduces a new project on international institutional design, the Continent of International Law (COIL). The unit of observation in COIL is an international agreement drawn from a random sample across four issue areas: economics, environment, human rights, and security. The theoretical portion of COIL articulates a set of cooperation problems including enforcement problems, distribution problems, three (independent) kinds of uncertainty, commitment problems, and problems of externalities, deadlock, and coordination, and provides concrete definitions and examples.Each agreement is coded for its underlying cooperation problems using background research and expertise in the sub-issue area. More than one answer can be chosen for each agreement, which gets around the problems of having to force real-life issues into 2x2 games. The theoretical premise is that cooperation problems are the driving force behind institutional design and that one cannot compare across agreements without first understanding the underlying cooperation problems the agreements are trying to solve. A completely different set of coders code 500+ questions of institutional design. This separation of coders allows for the testing of theories connecting cooperation problems to institutional design. To show how the data can be exploited, I present a variety of descriptive statistics as well as an operationalization of the important but difficult-to-measure concept of the incomplete contract. Among the findings presented are the following: With respect to cooperation problems, uncertainty about behaviour plagues human rights cooperation over 50% of the time, but rarely does so for economic cooperation. Human rights is the issue area in which parties are most likely to try to resolve uncertainty about preferences while they never do in economic agreements. With respect to design provisions, take nonstate actors as an example: Almost half of the agreements mention them, with human rights agreements alluding to them almost ¾ of the time. The most common nonstate actor is an IGO, but in economics, individuals sometimes play a role in dispute resolution. NGOs are mentioned in about 20% of human rights agreements but rarely if ever in the other issue areas.

Contents

1 The Continent of International Law [1]

In the decades leading up to the year 2000, the theoretical literature on international cooperation focused on overarching questions about whether cooperation is possible and how important it is. The seminal contributions of the 1980s, in particular Axelrod, increased our theoretical understanding of the possibility of cooperation.[2] Yet we know empirically that cooperation is pervasive. Hundreds of multilateral agreements are signed each year. If we count bilateral agreements, the number jumps to thousands. This is not to say that cooperation is easy. In fact, given the challenges of successful cooperation, scholars needed to change their focus and concentrate not on whether cooperation can occur at all, but on more focused questions regarding how the actual institutions of cooperation work and through what means they have their impact on state behaviour.

Moreover, cooperative international relations are typically organized through agreements and the institutions they create. These agreements and institutions display a wide range of forms across parties, issues, and circumstances. It was astonishing that after over fifty years of intense realist-antirealist debate in international relations theory, much of which turns on the question of the value and function of international agreements, no one had systematically collected data on important dimensions of international agreements.

Nonetheless, the year 2000 was a turning point. Suddenly, the issue of international institutional design took the front seat. In the short years since then, two special issues of *International Organization* have been devoted to the subject: Goldstein et al. on *Legalization and World Politics* and Koremenos et al. on *The Rational Design of International Institutions.*[3] Additionally, a number of articles on the subject have appeared.[4]

And while scholars of comparative law and politics have long cherished the 200+ countries and the numerous institutions within them that serve as potential data points for their work, scholars of international organization and law are now discovering that they too have a universe of data, including the over 50,000 international agreements registered with the United Nations. Moreover, the institutional variation on this continent is extremely detailed. Hence not only are the details of international law being taken seriously by political science scholars well aware of the realities of anarchy, the field is now realizing its potential to study comparative international institutional design.

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1 I thank Jeffrey Smith and George Tsebelis for very helpful discussions. Michelle Allendoerfer, Papia Debroy, and Johannes Urpelainen provided research assistance. I also thank my coders, in particular, Sherol Michaeli (also my manager), Leslie Padilla, Amin Ramzan, Lindsey Rogers, and Peter Wennerholm. Peter Wennerholm greatly increased my confidence in the data by providing consistency checks and conducting sophisticated background research. Finally, I thank the National Science Foundation for funding SES-0094376 and SES-0801581.

2 Axelrod 1984

3 Goldstein et al. 2000; Koremenos, Lipson and Snidal 2001.

This paper introduces one of these new projects on international institutional design: The Continent of International Law (COIL).

Below I present the specific motivation of the project, including an overview of the theoretical and empirical work preceding it. I then turn to the project itself, detailing the variables coded. Finally, I present a variety of descriptive statistics derived from the project and hint at what scholars can exploit with the data.

2 Theoretical Motivation

In addition to the contribution of Axelrod, Krasner highlights the role of international regimes in promoting cooperation.[5] Keohane argues that regimes can sustain cooperation "after hegemony" by creating shared expectations that cooperation will ensue, reducing transactions costs (especially when existing regimes are enlarged), and reducing uncertainty, including about who is cooperating/defecting.[6] Another half dozen or so works serve as COIL's building blocks with respect to its conceptualization of and emphasis on the cooperation problem.

Stein, Snidal, Oye, and Martin, and Krasner all use 2x2 games to illustrate how the game states are playing affects the choice of regime.7 Stein argues that the theory of international regimes lacked a coherent structure of international cooperation problems, and that three broad categories of strategic situations exist. First are situations that do not create a demand for regimes (when unilateral actions lead to the highest aggregate welfare; when two equilibria achievable through coordination exist, but one is preferred by both; and when one of the states has a dominant strategy.) Second are problems of common interests (collaboration), represented by the archetypal 2x2 game, the Prisoner's Dilemma (PD). Given both states have a dominant strategy to defect, even though cooperation would leave both better off, formal institutions to detect defection and facilitate punishment are required to guide the states' behaviour. Third, problems of common aversion require coordination. No formal institutions are required because, once the states agree on the equilibrium, it is self-enforcing. Instead, a convention to guide expectations or preemptive action by a powerful state is enough to solve the problem.

Snidal elaborates the differences between collaboration, (PD), and coordination. First, PD problems, but not coordination games, maintain their fundamental strategic structure when the choice of strategies is gradual. Second, bringing in multilateralism and power considerations, Snidal argues that increasing the number of states in a PD tends to make it more difficult to cooperate, but this is not necessarily true in a coordination game where the strategic incentives to defect do not increase with the

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4 See, for example, Smith 2000, Koremenos 2001, Helfer 2005, and, of course, Mitchell 1994 and Downs and Rocke 1995 who were ahead of the curve.

5 Krasner 1982 employs a broad definition of a regime as explicit or implicit "principles, norms, rules, and decision making procedures around which actor expectations converge in a given issue-area."

6 Keohane 1984.

7 Stein 1982; Snidal 1985; Oye 1986; Martin 1992; and Krasner 1991.

number of players. Increasing the number of players also benefits larger states in a PD only if players can be excluded from the agreement; in a coordination game, larger states are always more important. Snidal also considers the impact of time. In a PD, time is more important because a long shadow of the future increases the credibility of punishments. In coordination problems, time is less important. Time may facilitate solutions by creating expectations, but a long shadow of the future can make it more difficult because the distributional conflict grows in importance.[8]

Like Snidal, Oye argues that the shadow of future and the number of players are important independent variables in addition to the type of game states are attempting to solve. To lengthen the shadow of future, Oye proposes issue linkage and decomposing interactions over time as a means to turn the cooperation problem into a repeated game. Also, verification mechanisms can help states better identify defectors.

Martin adds suasion games, where a (usually small) state can free-ride because the other always cooperates,[9] and assurance games, where players can achieve an efficient outcome if both are playing rationally, but where both players can also avoid the worst possible outcome by acting unilaterally. Like Snidal, she argues that, with multilateralism, the most useful institutions are those that focus on enforcement; in coordination games, on the other hand, multilateralism can facilitate negotiations but institutions are rarely needed afterwards because the equilibrium is self-enforcing. In suasion games, small states can hide behind multilateralism to justify their behaviour, but this rarely has any impact on the behaviour of the major state that provides the public good. In assurance games, the problem is uncertainty, and multilateral norms can be useful because they convey information.

Krasner argues that coordination games do not require institutionalization if a powerful state can coordinate the actions of others choosing which states are allowed to participate in negotiations, dictating the rules of the game, or changing the payoffs. Krasner's broader argument is that national power should be in every analysis because it has a powerful impact on the solution of the often-present distribution problem.

The either/or fashion of the just-reviewed literature is improved in part by Morrow who focuses on how distributional differences can undermine the typical solutions to cooperation and shows how regimes can structure communication among actors to promote more efficient sharing of information.[10] Fearon also makes an important argument for disaggregating cooperation problems, noting that establishing the suitability of a given simple game is empirically difficult. Fearon's model integrates the bargaining over the terms of an agreement into the cooperation problem. This formulation reveals that the same shadow of the future that allows self-enforcing agreements also makes reaching an agreement more

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[8] It is here Snidal foreshadows Fearon 1998 discussed below. Snidal also starts the process away from 2x2 games by discussing gradual strategies and multilateralism.

[9] This is the hegemonic stability case where a major state produces a public good and other states refuse to contribute because they can count on the major state producing enough of the good.

[10] Morrow 1994.

difficult by increasing the distributional effects of the selection of the initial equilibrium. Fearon concludes that international regimes and institutions have an important role as forums of bargaining. Fearon's key claim is that categorizing cooperation problems based on different games obscures important strategic patterns, like bargaining, that are always present. However, the importance of bargaining and enforcement varies.[11]

3 Cooperation Problems and International Institutions

The literature reviewed above agrees on the premise that states are rational actors that pursue their self-interest when facing a cooperation problem. This implies that the solutions should reflect the nature of the cooperation problem. But while these works open up the central questions of international politics, they do so without any detailed analysis of specific institutional arrangements or questions of institutional design. In other words, this literature fails to investigate the precise mechanisms through which cooperation can emerge.

There is no inherent reason, however, why broader political issues cannot be considered simultaneously with the specific institutional arrangements designed to address them in ways that illuminate both the broader relationships and the institutionalization itself. In their introduction to their special issue, Koremenos et al. focus on the relationship of problems and solutions and argue for a research program based on the notion that states rationally design international institutions to solve problems.[12] Instead of using a typology of games, they disaggregate cooperation problems. Fundamentally, states face distribution and enforcement problems. These are then shaped by various degrees of uncertainty about the state of the world, the behaviour of other actors, and their preferences. Finally, the number of actors and asymmetries among them affect the nature of the cooperation problem.

Considering these factors independently allows for a treatment of their univariate effects on important features of potential institutions and hence gets around the problem of forcing real-life issues into 2x2 games. Koremenos , Lipson, and Snidal focus on the exclusiveness of membership, the scope of issues covered, the extent of centralization of tasks that have to be performed, the control individual states have over the cooperation, and the adaptive and transformative flexibility of the institution.

Koremenos et al. are essentially arguing that the study of international cooperation problems should be more tightly linked to the study of their solutions. Indeed, one of the problems with the early literature is that international institutions are not explicitly incorporated as options in the game, so their causal influence has to be assessed separately from problems. However, the rational design program also shows that the study of international cooperation is by no means exhausted. With six independent and five dependent variables and straightforward game-theoretic reasoning, an impressive list of em-

[11] Fearon 1998.
[12] Koremenos, Lipson and Snidal 2001.

pirically-testable conjectures about the design of institutions can be generated, but this list does not begin to exhaust the variables or consider the potential interactions of different cooperation problems.

The theoretical portion of COIL focuses on the driving force of the cooperation problem in understanding institutional design and comparing across institutions. COIL builds directly on Rational Design, but expands the list of potential cooperation problems and provides more concrete definitions and examples. I return to this below.

4 Empirical Motivation

For researchers studying international conflict, comprehensive data sets exist.[13] Consequently, there has been a proliferation of empirical analyses over the past decades. Until recently, the empirical side of the field of international cooperation consisted almost entirely of case studies, typically chosen to illustrate the theory being presented. As a result, scholars of international law and students of international organization, more generally, were flying blind with respect to estimating in any systematic way the parameters that determine the success or failure of international cooperation. At the same time, formal models were revolutionizing the way we think about international relations, but without data, we were unable to test their implications systematically. This is no small matter as the process of confronting models with data should discipline the evolution of formal modeling.

There were some notable exceptions. A few authors embarked on systematic studies focusing, not on international agreements, but on the much smaller set of intergovernmental organizations (IGOs) – entities with hallways and bathrooms. Some of these studies were theoretically driven; some were not.

In the earliest of these studies, Wallace and Singer undertake a purely descriptive analysis, presenting a quantitative description of the number of IGOs in the global system from 1815-1964.[14] They count the sheer number of qualifying IGOs. To be included, an IGO must consist of at least two qualified members of the international system, hold regular meetings, and have a "permanent secretariat and some sort of permanent headquarters arrangement."[15] They state in their conclusion, "we have tested no hypotheses, confirmed no models, and demonstrated no statistical or causal relationships between intergovernmental organization and other phenomena."[16]

One of the most impressive, theoretically-driven studies of IGOs is that of Cox and Jacobson.[17] They examine decision-making and influence in eight international organizations, developing a taxonomy of decision-making which includes seven categories: representational, symbolic, boundary, program-

[13] The most comprehensive and widely-used conflict data set is the Correlates of War (COW) (Singer and Small 1994).
[14] Wallace and Singer 1970.
[15] Wallace and Singer 1970, 246.
[16] Wallace and Singer 1970, 284.

matic, rule-creating, rule-supervisory, and operational. To explain the location of authority in IGOs, Cox and Jacobson focus on three independent variables: the stratification of state power, the economic and political characteristics of states, and world patterns of alignment and conflict. They find across all eight organizations, with only minor variation, the "rich Western countries with competitive policies are the predominant influence".[18] They also find that, as universal organizations have become preoccupied with problems of developing states, a number of shadow organizations have cropped up to address the concerns of the rich Western states.

Similarly, Shanks et al. consider characteristics of states, like regime type and prosperity level, to explain variance among states' IGO membership levels.[19] They state: "IGOs are those associations established by governments or their representatives that are sufficiently institutionalized to require regular meetings, rules governing decision making, a permanent staff, and a headquarters".[20] They find that only "two-thirds of the IGOs that existed in 1981 were still active in 1992" and that a large proportion of new organizations were created by other IGOs, not by governments.[21]

While these studies are important contributions to the scholarship on international cooperation, they suffer from a number of important limitations. If we want to examine and explain details of international cooperation, limiting ourselves to those cases in which states decide to create international organizations is problematic. Significant, effective international cooperation can take many forms, ranging from current developments in European monetary integration to tacit bargaining strategies.[22] Explaining the variation is one of the most interesting and important tasks currently facing scholars of international relations. A necessary first step is quantifying the variation.

In concrete terms, existing studies omit two important sources of variation in the extent of international cooperation. First, much formal international cooperation takes the form of agreements that either do not create IGOs at all or do not create IGOs that fit the definitions offered above. To see the extent of this omission, note that while Wallace and Singer find 208 IGOs, the United Nations data set of international agreements from which I draw my sample contains over 50,000 agreements.[23] The majority of these agreements do not call for the creation of any intergovernmental entity whatsoever. And given that whether or not to create an IGO as part of an agreement is a choice variable for the parties to the agreement, sampling on the dependent variable makes an analysis of the choice essentially impossible.

Second, simply counting IGOs ignores the fact that the amount of cooperative activity supported by an IGO may change over time. Many new agreements delegate tasks to existing IGOs. Studies that focus

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17 Cox and Jacobson 1974.
18 Cox and Jacobson 1974, 423.
19 Shanks et al. 1996.
20 Shanks et al. 1996, 593.
21 Shanks et al. 1996, 594.
22 Downs and Rocke 1990.
23 Wallace and Singer 1970.

on institutions rather than agreements do not measure the additional international cooperation that occurs as IGOs evolve by taking on new tasks.

COIL broadens the available data considerably by sampling a range of formal international agreements; however, like the earlier literature, it omits informal agreements. This omitted category includes both informal cooperative endeavours, such as those conducted by the Group of Seven, and even less formal tacit cooperation. Still, it remains a huge advance over the existing literature in terms of the breadth of cooperative activities considered and the depth of the information collected on each activity.[24]

5 Population of Cases

The COIL sample comes from the United Nations Treaty Series (UNTS). According to Article 102 of the United Nations Charter, "every treaty and every international agreement entered into by any Member of the United Nations after the present charter comes into force shall as soon as possible be registered with the Secretariat and published by it."[25] Agreements that have not been registered as such cannot be invoked before any organ of the United Nations.[26]

Given the almost universal membership of the United Nations and its stature among international organizations, its list of international agreements is the most comprehensive to be found. All international agreements registered or filed and recorded with the Secretariat since 1946 are published in the United Nations Treaty Series (UNTS) as well as many dating back to League of Nations times. The UNTS Internet collection currently contains over 50,000 international agreements.[27]

The UNTS Internet site provides a range of subject terms that can be used in searching for international agreements. There are approximately 300 of these terms. Although the terms are not mutually exclusive, there is very little overlap. For COIL, agreements in four different issue areas are sampled: economics, environment, human rights, and security. The economics issue area is composed of agreements categorized under four UNTS subject headings: "Monetary matters," "Investment," "Finance," and "Agricultural commodities." The environmental issue area is composed of agreements categorized under the UNTS heading, "Environment." The human rights issue area is composed of

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[24] It is important to note that Leeds' Alliance Treaty Obligations and Provisions data set, which showcases systematic and theoretically-driven data on alliance politics for close to a 200-year period, as well as Mitchell's International Environmental Agreements Project, which seeks to provide systematic data on variation in international environmental treaties by establishing a system for coding treaty provisions in these agreements, are part of the new generation of data sets characterizing the field of international cooperation and have generated important new insights and will continue to do so for years to come. It is also worth noting that the collection of systematic data on international agreements has reached the point where there is an e-group, currently composed of 36 members, from which a subset present at well-attended panels at both the International Studies Association and the American Political Science Association annual meetings.

[25] http://www.un.org/Overview/Charter/contents.html

[26] The predecessor of Article 102 is Article 18 of the Covenant of the League of Nations.

[27] The Internet address is http://www.un.org/Depts/Treaty/.

agreements categorized under “Human rights” while the security issue area combines agreements under “Security” and under “Disarmament.”

In order to generate a random sample of agreements in each of the four issue areas, I first print out a list of all the international agreements generated using the particular UNTS subject headings listed above. Then using a random number generator, the agreements are reordered. Finally, each agreement is carefully examined to determine whether or not it meets the inclusion criteria.

Exactly what counts as an international agreement? Essentially, every agreement found in the UNTS is considered an international agreement for the purposes of this study unless it is excluded by one of the following five rules: First, I exclude agreements whose primary ambition is to either establish the procedures and/or arrangements for or the goals of the negotiations of other agreements or designate the host state of an international conference. Second, I exclude agreements not between at least two states. Thus, agreements between one state and an international organization would be excluded; agreements that are negotiated within an international organization but that involve two or more states would be included. Third, I exclude agreements that do not prescribe, proscribe, or authorize behaviour that is observable in principle. That is, agreements that are not specific enough to include (at least potentially) objective criteria for determining performance are excluded from the sample. Fourth, I exclude agreements whose sole ambition is to implement the provisions of other international agreements. That is, agreements whose terms are closely anticipated and identified in the underlying agreement would be excluded from the sample. Examples of implementing agreements that would be included in the sample are those that both implement and extend the underlying agreement, those that specify and/or interpret the provisions of a vague underlying agreement that would be excluded, and those that implement a law of a particular state.[28] Fifth, agreements that are extended through time, whether by default after the passage of a specified duration or by means other than default, are counted only once, not as separate international agreements. Renegotiated agreements on the other hand, constitute separate international agreements.[29]

The current sample of agreements can be found on the project website. Also detailed there are examples of excluded agreements; the majority of excluded agreements are between one state and an IGO.

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[28] Rules 3 and 4 derive from Coordination, Reporting and Publication of International Agreements, United States Federal Code of Regulations, Volume 22, Part 181 (4-1-98 Edition); 22 C.F.R. 181. The purpose of that document is to implement the provisions of the Case-Zablocki Act. The Case-Zablocki Act calls for the full and timely disclosure to the U.S. Congress of all concluded international agreements to which the U.S. is a party. The document identifies criteria for determining whether any undertaking between the U.S. government (or an agency of the U.S. government) and another state constitutes an international agreement within the meaning of the Act.

[29] Agreements that are extended are not considered original agreements in the UNTS. Those that are renegotiated, that is, those for which the renegotiated agreement supplants the original agreement, are considered original agreements in the UNTS.

6 Training the Coders

The reasonableness and consistency of the coding represent a very important issue in any data collection effort. Coder training is a 9-month process and includes two semester-long courses with the principal investigator (PI). Each coder must demonstrate a keen ability to translate qualitative evidence into quantitative assessments. Also, because standard practice suggests the use of multiple coders whose choices can be compared, every agreement in the dataset was coded by *at least* two coders independently. Each agreement is then assessed for intercoder reliability. In cases of disagreement, the responses are examined and the disagreement resolved by the PI in consultation with the coders. The average coded agreement is characterized by disagreement on approximately 15 questions, or 4% of the quantitative questions; the range so far has been between 2% and 15%.

Coding proceeds agreement by agreement. This approach (labeled AVFEC[30] by Mitchell 2006:43) was used rather than a coding scheme whereby each variable across agreements was coded at the same time. While the AVFEC approach is criticized for reducing empirical regularity in the data coding, despite its efficiency in terms of understanding the detailed context of an agreement (which often helps a coder resolve the meaning of ambiguous provisions), this claim is alleviated for two reasons. First, as mentioned, intercoder reliability was checked by the coding instrument and, in the case of disagreement across coders, the disagreements were resolved by a group meeting that included the PI (who remained the same over time). Second, before certain data were used for empirical testing, a third coder checked particular variables across all agreements. For example, as a check on the coding of precision, which unlike many variables requires a judgment call, a third coder looked at the entire set of agreements and focused only on precision. He therefore noticed any inconsistencies in coding given that he only had to keep one mental category in his head.

7 Coding Instrument and Glossary

An elaborate coding instrument, with 10 sections and 500+ questions, is used to record the details of the international agreements. Section 1 records basic information about the agreement while Section 2 details the substance of the agreement. Section 3 gathers information, like whether there are preambles, annexes, appendices, protocols, and references to other organizations. Section 4 addresses issue scope while Section 5 details the membership provisions of the agreement, including the membership criteria, categories of membership, the number of states needed (and/or the necessity of particular states) to ratify the agreement before the agreement enters into force, and the rights/responsibilities of non-state actors. Compliance provisions, including monitoring and dispute resolution, are recorded in Section 6, with questions about domestic implementing legislation and transition periods as well. Section 7 records the number of bodies the agreement creates, capturing details about membership, size, procedures for making decisions, and other details about the func-

[30] AVFEC stands for “all variables for each observation.”

tioning and purpose of these bodies. Section 8 delves into information exchange while the budgeting process is recorded in Section 9. Flexibility provisions constitute the substantive portion of Section 10 with questions about reviews, duration, extension, renegotiation, amendment, escape and withdrawal clauses, termination procedures, as well as information regarding reservations and declarations.

Additionally, the characteristics of the parties (polity score, GDP, etc.) at the time the agreement was concluded are recorded using standard measures in the literature. For example, the literature includes measures that distinguish developed from developing states.

The coding project relies on the text of the agreement. This is the most systematic way to proceed because it would be never-ending and with ever-present controversy to try to deduce what the negotiators "really meant" when writing the text of an agreement. Moreover, with a random sample of agreements, deducing such information would be impossible in most cases. Finally, as discussed below, preliminary analyses indicate that the provisions of agreements are indeed chosen in ways to increase the incidence and robustness of cooperation so agreement texts are quite meaningful.

A glossary accompanies the coding instrument, with the main entries being the key terms (questions and answers) in the instrument. Definitions are based on my theoretical work in this area, including joint work, and on the overall political science perspective on international law. In addition to definitions, there are examples of the various concepts drawing on some important international agreements with which the coders are trained. The glossary is online and accessible directly from the coding instrument as well as independently.

This glossary is important for three reasons. First, to ensure intercoder-reliability, coders must be operating with the same, precise definitions. Even though they will learn these concepts as part of their training, many of these coders will be coding for two years. When confronted with many different kinds of agreements, they may want to double-check that their understanding is consistent with mine. Second, and surprisingly, some of these terms have never been succinctly defined. Concepts such as "compliance," "delegation," and "international body" are the cornerstone of much international relations scholarship; yet many of these have never been carefully phrased with definitional boundaries. While many scholars may disagree with my definitions, making them public forces other scholars to be precise about how their conceptions differ. We in the international cooperation field are in need of such precision if we desire to advance both theoretically and empirically. (Precise definitions are particularly important for systematic comparative work.) Third, given the relationship developing between international law and international relations, comparison of their respective definitions will be quite useful for those crossing interdisciplinary boundaries.

Independent of the coding of the institutional design variables, students with training in rationalist approaches to international cooperation and I also look at the agreement. We answer the following substantive question among others: How can the cooperation problem be characterized? In addition to the independent variables elaborated in Rational Design, I have added the following possible answers: commitment problem, positive externalities, negative externalities, deadlock, and other. (The "other"

category captures areas of cooperation such as the exportation of norms, which are not well captured by the typical 2x2 game logic.) A detailed definition and example of each of these problems is given on the project website. Of course, more than one answer can be chosen for each agreement. This gets around the problems of having to force real-life issues into a 2x2 game.

Obviously, these questions are not nearly as straightforward as those pertaining to agreement design. An inference must be made from the agreement to the cooperation problem. I see no way around this in such a study using a random sample of agreements given the observations are the agreements themselves and they cut across diverse issue and sub-issue areas. Nonetheless, there are some factors that I hope will alleviate concerns. First, the inference comes by looking at relevant background information. Sometimes, negotiators reveal the problems they were attempting to solve, and this is documented. Unfortunately, this is not always the case for an agreement from the random sample. Rather, research needs to be done more broadly on the relationship among the relevant states (for example, in a bilateral agreement, the relationship of the dyad in the decade or two before the agreement is signed) and into the general problems of the sub-issue at the time. Also, only the substantive goals of the agreement are looked at when trying to infer the underlying cooperation problem(s). Given that my theoretical work focuses on explaining the procedural or design aspects of the agreements, the separation of coders for, what are in my analyses, the independent and dependent variables is critical to the integrity of the project. My approach is extremely labour intensive, but by employing different and multiple sets of trained coders, the field can have confidence in the resulting data.

Let me expand on some of the agreements in the random sample. The justifications for these problems are copied directly from the database.[31] The Agreement Concerning the Protection of the Sound Oresund from Pollution (UNTS 13823) between Denmark and Sweden in 1974 has the following cooperation problems:

> Uncertainty about behaviour:
>
> "Despite the small size of the Sound Oresund and the proximity of the two nations, wastewater discharge and other types of water pollution cannot be adequately observed with the naked eye, making uncertainty about behaviour a significant cooperation problem in the negotiation of this treaty. The presence of industry further complicates the situation by adding a two-level game: while the government may be requiring stricter regulations, private sector industries might not be complying."
>
> Uncertainty about the state of the world:
>
> "Uncertainty about the state of the world was a significant cooperation problem, since such questions such as "How much pollution is there?" "What is being discharged into the Sound?" "How much can it take before it is permanently damaged?" and "What areas of the Sound have bad water renewal properties?" remained unanswered. The answers to these questions would signifi-

cantly affect the cost of compliance for each of these countries. For example, areas of water with bad renewal properties required their own very specific regulations, but those areas were not specified in the treaty—rather, their definition is the responsibility of the Danish-Swedish Commission formed by the agreement. Also, scientific investigations called for by the agreement would lead to further decisions regulating the discharge of agricultural waste and management of ferry traffic. These decisions also had the potential to affect the costs and benefits of each country, making uncertainty about the state of the world a significant cooperation problem in the negotiation of this treaty."

Enforcement problem:

"Even though there was a significant shadow of the future between Denmark and Sweden, there were strong economic incentives to defect from the agreement: less regulation or wastewater treatment would mean more economic freedom for municipalities and more profits for industries. The situation was further complicated by the existence of a two-level game between the government and industry."

Negative externalities:

"Controlling a negative externality was the most important cooperation problem, since waste water pollution by either country affected the other country's fishing and recreational activities in the Sound Oresund."

The Convention on the protection of investments (UNTS 13396) signed in 1973 between France and Mauritius is coded as having the following cooperation problems:

Uncertainty about the state of the world:

"In 1961 Nobel Prize winner James Meade predicted economic and political instability – disaster, really – for Mauritius. Mauritius had ethnic divisions, a dependence on one crop (sugar), and rapid population growth during that time.[32] Hence Mauritius might have strong incentives to want to nationalize foreign investments if it were undergoing a crisis. Neither party could be sure what the evolution of the cooperation over investments would be given this state of the world."

Enforcement problem:

"This is a classic Prisoner's Dilemma – each state has incentives to defect (by expropriation or limitation on free transfer of investments) but both would benefit with long-term cooperation."

Commitment problem:

"Given its tumultuous history, Mauritius wants to tie its hands in case of future regime change so that foreigners will invest."

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[31] These particular examples were written by Lindsey Rogers and Peter Wennerholm.

[32] See Arvind Subramanian, "Mauritius: A Case Study" Finance and Development, vol. 38, no. 4, Decemberr 2001; Arvind Subramanian and Devesh Roy, "Who Can Explain the Mauritian Miracle? Meade, Romer, Sachs, or Rodrik?" IMF Working Paper 01/116, 2001.

8 Empirical Findings

To highlight a few potential findings, I begin with the theoretical category of the cooperation problem and then proceed to some design provisions.

Table 1 shows that Uncertainty about the State of the World is the most common cooperation problem: over 65% of the agreements attempt to solve it.[33] The idea that international law can be used to solve domestic problems is given support by the almost 20% of agreements that solve commitment problems. Nonetheless, uncertainty about preferences is perhaps the greatest strategic obstacle to cooperation, with only 10% of agreements even attempting to solve it.. Moreover, we rarely see third states trying to break a deadlock problem.

Table 1: Cooperation Problems (Percentage of Agreements)

Cooperation Problem	Percent of Agreements
Uncertainty about Behaviour	15
Uncertainty about Preferences	10
Uncertainty about the State of the World	66
Enforcement Problem	27
Distribution Problem	28
Commitment Problem	18
Negative Externalities	19
Positive Externalities	6
Deadlock	1
Other	40

N = 145

When we break the problems down by issue area (Table 2), a few more interesting findings emerge. First, uncertainty about behaviour plagues human rights cooperation over 50% of the time, but rarely does so for economic cooperation. Human rights is the issue area in which parties are most likely to try to resolve uncertainty about preferences while they never do in economics and environmental agreements.[34] Finally, economic agreements are most often used to solve commitment problems.

33 This is consistent with the findings of the Rational Design volume where the conjecture flexibility increases with uncertainty about the state of the world garners the most support. See Koremenos et al. 2001b: 1055.

34 Future work will address whether the absence of uncertainty about preferences occurs because preferences are clear (as is probably the case in economics) or such uncertainty poses too risky an obstacle for cooperation.

Table 2: Cooperation Problems by Issue Area (Percent of Agreements)

Cooperation Problem	Economics	Environment	Human Rights	Security	Total
Uncertainty about behaviour	1	28	52	8	15
Uncertainty about Preferences	0	0	37	20	14
Uncertainty about the State of the World	80	48	43	68	66
Enforcement Problem	29	20	30	24	27
Distribution Problem	14	24	67	32	28
Commitment Problem	32	4	13	0	18
Negative Externalities	0	76	4	28	19
Positive Externalities	0	32	4	0	6
Deadlock	0	0	0	4	1
Other	45	28	43	32	40
N	71	25	24	25	145

Table 3 illustrates that 76% of agreements refer to other international agreements. Most of these references (96%) are in the agreement provisions or in both the provisions and preamble, and hence have more weight than those references only found in the preamble since preambles are not legally binding. Using the answers to the fill-in follow-up question regarding what agreements/organizations are mentioned, I will attempt an ego network analysis to try to uncover what the true international regimes are and the strength or weakness of various ties among them.[35]

Table 3: References to other Organizations

	Percent of agreements
Agreement references another international organization	76

N = 142

(Percent of agreements that reference other organizations)

	Percent of agreements
Reference found only in preamble	4
Reference found only in provisions	63
Reference found in both preamble and provisions	33

N = 108

35 Social network analysis cannot be employed as the entire population is not analyzed. For an explanation of what network analysis can be done by focusing on individual data points, see Everett and Borgatti 2005.

Table 4 shows the incidence of provisions calling for domestic implementing legislation and reveals that source of enforcement power is only mild.

Table 4: Domestic Implementation Legislation, by Issue Area (percent of agreements)

	Economics	Environment	Human Rights	Security	Total
Not at all explicit	83	64	39	72	70
Somewhat explicit	14	36	57	24	27
Explicit	3	0	4	4	3
N	69	25	23	25	142

About 8% of the agreements in the sample contain reservations. Tables 5 and 6 illustrate that only security and human rights agreements have the kind of reservations that limit/prevent the application of certain provisions, and in those issue areas, the most common reservation is that type which completely frees the state from the obligation.[36]

Table 5: Reservations limiting/preventing application of certain provisions, by issue area (percent of agreements with reservations)

	Economics	Environment	Human Rights	Security	Total
Agreement contains reservations that limit/prevent application of particular provision(s)	0	0	88	67	82
N	0	0	8	3	11

Table 6: Types of Reservations, by issue area (percent of agreements that contain reservations)

	Economics	Environment	Human Rights	Security	Total
Reservation limits the amount of time the provision is applicable to the state	0	0	0	0	0
Reservation delays application of the provision to the state until a specific date	0	0	0	0	0
Reservation delays application of the provision to the state until certain conditions are met	0	0	13	0	9
Reservation completely frees the state from the obligation of the provision	0	0	38	67	45
Other	0	0	38	33	36
N	0	0	8	3	11

[36] Ambroselli and Koremenos 2009 examines the top five states with respect to reservations as well as the variety of reservations across parties and issue areas.

Tables 7 and 8 highlight the importance of nonstate actors. Almost half of the agreements mention nonstate actors, with human rights agreements alluding to them almost ¾ of the time. More interesting is the breakdown of these actors. By far the most common is an IGO, but in economics, individuals sometimes play a role in dispute resolution.[37] NGOs are mentioned in about 20% of human rights agreements but rarely if ever in the other issue areas.[38]

Table 7: Reference to Non-State Actors, by issue area (percent of total agreements)

	Economics	Environment	Human Rights	Security	Total
Agreement confers procedural rights/responsibilities to non-state entities	38	44	74	28	43
N	69	25	23	25	142

Table 8: Types of Non-State Actors, by issue area (percent of agreements that refer to non-state actors)

	Economics	Environment	Human Rights	Security	Total
NGOs	4	0	29	0	10
Private Firms	15	9	0	0	8
Individuals	31	9	18	0	20
Pre-existing IGOs	85	100	100	100	93
Other	4	9	6	0	5
N	26	11	17	7	61

Finally, Table 9 showcases the symmetry of agreements. Interestingly, over a quarter of economic and security agreements are asymmetric with respect to the procedural rights and responsibilities accorded to their members (voting, ability to monitor, etc). Very few agreements are asymmetric with respect to the substantive goals, but security agreements are most likely at 4%.

[37] This statistic is driven by the primary position individuals are given in bilateral investment treaties.

[38] This statistic is calculated by looking at both Tables 7 and 8.

Table 9: Symmetry of Agreements, by issue area

	Economics	Environment	Human Rights	Security	Total
Symmetric	71	92	100	68	79
Mildly Asymmetric	26	8	0	28	19
Profoundly Asymmetric	3	0	0	4	2
N	69	25	23	25	142

9 Exploiting the Data: Previous Work and The Elusive Concept of the Incomplete Contract

I briefly summarize some of the COIL findings and then tackle a new problem concerning incomplete contracting.

In “Contracting around International Uncertainty” (Koremenos 2005), I argue that international cooperation is plagued by uncertainty. While states negotiate the best agreements possible using available information, unpredictable things happen after agreements are signed that are beyond states’ control. States may not even commit themselves to an agreement if they anticipate circumstances will alter their expected benefits. Duration provisions can insure states in this context. Specifically, the use of finite duration depends positively on the degree of uncertainty and states’ relative risk aversion and negatively on the cost. These formally-derived hypotheses strongly survive an empirical test using the COIL data. Independent variables like uncertainty and relative risk aversion are measured. The results, highlighting evidence on multiple kinds of flexibility provisions, not only strongly suggest the design of international agreements is systematic and sophisticated; they also call attention to common ground among various sub-fields of political science and law.

In “If Only Half of International Agreements Have Dispute Resolution Provisions, Which Half Needs Explaining?” (Koremenos 2007), I discover that only about one out of every two agreements in my random sample of international agreements has any dispute resolution provision. This observation begs for an explanation, and which half needs explaining depends on where one is sitting. Do power politics dominate international law or does the law provide a fundamental order? Employing a rational choice framework, I focus on a set of independent variables that capture the cooperation problem being addressed by members to an agreement and put forth conjectures explaining the inclusion of dispute resolution provisions. Using the COIL data, I find that agreements addressing complex cooperation problems, that is, problems characterized by uncertainty, prisoners’ dilemma-like incentives to defect, and/or time inconsistency, are more likely to include such provisions. I thereby suggest that international law is quite efficient with states not creating and/or delegating dispute resolution authority when it is unlikely to be needed.

In “When, What, and Why do States Choose to Delegate?” (Koremenos 2008), I draw on Rational Design to explain the institutional choice of international delegation. The paper has two primary objectives: to test the Rational Design conjectures about the use of delegation and to analyze the correlation between delegation and other institutional design variables. The COIL data prove quite interesting. For example, I find that delegation is widespread, with almost one half of international agreements calling for it. Dispute resolution is the most commonly delegated function and often involves externally delegating authority to an existing arbitration tribunal or an international court. As suggested by Rational Design, delegation, and especially external delegation, increases with the existence of complex cooperation problems, including problems of enforcement and uncertainty. Delegation increases with the heterogeneity and number of parties, decreases with the average level of democracy of the signatories, but is unrelated to the existence of a superpower signatory and to the risk aversion of signing states. These patterns are consistent in multivariate analyses, thereby confirming the importance of international delegation as a topic of focused study by documenting it as an important and nontrivial empirical phenomenon.

“An Economic Analysis of International Rulemaking” (Koremenos 2009) takes the *Legalization* special issue of *International Organization* as its starting point, in particular the conceptualization of legalization as having three dimensions: obligation, precision, and delegation. I suggest some theoretically grounded ways to think about the relationship among these variables, asking when the dimensions are substitutes, complements, or even conflicting design principles? In particular, I look at a theoretically predicted inverse relationship between the precision of an agreement and delegated dispute resolution provisions. I conduct bivariate probit analyses in order to analyze the data properly, and find that the predicted inverse relationship does hold in the COIL data.

Not only are the COIL variables individually useful; they can be combined in ways to operationalize theoretically-important but hard-to-measure concepts. Take one of the cornerstone concepts in the contracting literature: the incomplete contract.[39] Although it has its origins in economics, political scientists have also found the concept quite valuable.

The contracting literature devotes considerable attention to why we observe incomplete contracts and, given that we observe them, why we observe particular forms of incompleteness and not others. In a world without transaction or information-processing costs, we would expect contracts to be complete. That is, they would indicate the contracting parties' obligations in all possible states of the world in all future periods. Various reasons have been suggested for why we do not observe such contracts including bounded rationality, which causes parties to a contract to not be able to enumerate all possible states of the world for the simple reason that they cannot think of them all, decision costs, which represent the costs of deciding what to do in each possible state of the world, and enumeration costs,

[39] Hart and Holmstrom (1987) survey the general literature on contracts up to the mid-1980s, while Hart (1995) reviews and synthesizes that part of the literature that relates to the organization of firms.

which make describing states in sufficient detail for them to be verifiable to third-party contract enforcers too costly in some cases.

Whatever their cause, incomplete contracts give a role to courts to fill in the details. One testable conjecture in IR then is we should see an inverse relationship between the completeness of the contract and the inclusion of provisions delegating dispute resolution.[40] Nonetheless, before testing can take place, a measure for incompleteness must be found.

I attempt to capture how complete an agreement is based on the relative complexity of the cooperation problem it addresses, the sheer length of the agreement, the number of appendices or annexes it has, the overall precision or ambiguity of its terms, and whether the agreement refers to existing international agreements as those may partially fill in incomplete terms (in some sense, filling the role that "precedent" plays in the domestic context).[41]

An example of the two endpoints is perhaps the best way to explain my logic. Suppose the cooperation problem the agreement is trying to address is very simple. Suppose also that the agreement uses very precise language, is 15 pages long, has detailed protocols, and refers to existing international agreements to provide a more detailed context. Such an international agreement is very complete. On the other hand, suppose the cooperation problem the agreement is trying to address is very complex. Suppose also that the agreement uses very vague language, is 3 pages long, has no protocols, and never refers to existing international agreements to provide a more detailed context. Such an international agreement is very incomplete.

The individual components of completeness are operationalized as follows. With respect to relative complexity, there are four possibilities: very simple, somewhat simple, somewhat complex, and very complex. This variable refers to the amount of straightforwardness and/or the level of intricacy in terms of the nature of the cooperation problems the agreement is addressing as a whole. While this is primarily a judgment call for the coder, familiarity with a variety of cooperative endeavors results in a sense of when an issue is particularly simple or complex. So for example, straight coordination on pest control is very simple whereas scientific cooperation, like that which inspired the Antarctic Treaty, is only somewhat simple given potential resource issues. Problems that call for cartels or security alliances are somewhat complex. Finally, complicated environmental standard control where there is no clear scientific consensus, like global warming, or large-scale multilateral economic problems, like those calling for a system of stable exchange rates, are very complex. Some agreements attempt to solve quite simple cooperation problems. For example, encouraging positive externalities via scientific cooperation is the goal of "Memorandum of Understanding on Cooperation in Earth Sciences and

[40] At the international level, there is not a set of long-lived judicial institutions whose existence can be taken as exogenous to any particular decision to use them. Quite the contrary, simply to create and/or delegate to a court to fill in imprecise agreements entails costs. Hence we can expect an inverse relationship between incompleteness and the inclusion of dispute resolution provisions.

Environmental Studies," in which the United States and the United Kingdom agree to share information about their geographic and oceanographic research (UNTS 19699). Another example of a simple cooperation problem is that between Argentina and Chile and their need to prevent frontier forest fires.[42] This agreement addresses negative externalities by prescribing increased communication. An example of a more complex problem is prohibiting or restricting the use of certain conventional weapons. Limiting the use of weapons has military consequences, and states are engaged in a prisoner's dilemma.[43] A table listing agreements in each of the four categories is available on the project website. For approximately half of the agreements, I checked with an expert in the issue area to make sure our coding made sense.

The questions regarding pages, protocols/appendices, and references to other agreements are all very straightforward and there is rarely if ever any disagreement among the coders.[44]

Precision is a more difficult variable to code, but as mentioned above, a third coder checked the consistency of that coding. It can take on four values from very vague to very precise. Precision is often reflected in clearly stated "shall/shall nots" with respect to the prescribed, proscribed, and/or authorized behaviours as well as in the amount of detail accorded to each behaviour. I briefly discuss four agreements from the sample to give a sense of each of the categories.[45]

The 1982 Convention for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with respect to Taxes on Income (UNTS 25393) between Italy and Australia is very precise, clearly defining different kinds of taxes (with articles devoted to detailed definitions) as well as criteria for determining residency and permanent establishments like businesses. Although power for setting taxes etc. is left to domestic law, jurisdiction is carefully laid out.

The 1983 Agreement for Cooperation relating to the Marine Environment (UNTS 22693) between Canada and Denmark can be described as somewhat precise. It quite clearly states the responsibilities of the Contracting Parties and clearly states what measures the Contracting Parties need to take in the event of environmental hazards. However, wording such as "...subject to respective laws or any understanding with respect to confidentiality"[46] makes it fall short of very precise.

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41 In international law, precedent does not play the role it does in domestic law (or at least in systems of law deriving from common law).

42 The resulting agreement is "Agreement Concerning the Protection of Frontier Forests against Fire" (UNTS 9075).

43 The resulting agreement is "Convention on prohibitions or restrictions on the use of certain conventional weapons which may be deemed to be excessively injurious or to have indiscriminate effects" (UNTS 22495).

44 Actually, there are disagreements for pages when coders print the agreement from a source other than the UNTS. Hence that seemingly straightforward variable is always checked by the PI.

45 Because precision is the topic of Koremenos 2009 and is covered in detail therein, I give only short examples here.

46 Article 6, paragraph 2 Annex A, and paragraph 1 Annex B.

Under the 1975 multilateral Convention (No. 143) concerning Migrations in Abusive Conditions and the Promotion of Equality of Opportunity and Treatment of Migrant Workers (UNTS 17426), states must declare and pursue a national policy designed to promote and guarantee equality of opportunity and treatment with respect to employment and occupation for migrant workers and their families. The agreement gives a lot of direction regarding what measures should be adopted in order to effectuate the agreement provisions, but it also uses some rather vague, sweeping phrases, like "respect human rights" and "adopt all necessary measures" and "equality of treatment" and hence is coded as somewhat vague.

The 1948 Convention on the Prevention and Punishment of the Crime of Genocide (UNTS 1021) is very vague because the crime can be interpreted very loosely according to the agreement definition (there are no clear criteria as to whether political, social, and even gender groups are protected) and the important punishment mechanisms called for by the agreement (in its title) are not explained in any sort of detail. For example, whether there is an obligation to prevent genocide by intervening militarily remains to this day an open question.

To create the measure of completeness, I invert the complexity variable so that very complex is ranked 1 and very simple is ranked 4. I then add the complexity variable, the precision variable, agreement length, whether the agreement has an annex or appendix, and whether there are references to other international agreements, the result being a continuous variable that has the flavour of an index.

Table 10 presents the results of a cross-tabulation probing the (expected) inverse relationship between arbitration and/or adjudication provisions and the degree of completeness. There is no significant relationship between them.

Table 10: Correlation of Completeness and Delegation of Arbitration/Adjudication

Correlation of Completeness (additive) and Delegation of Arbitration/Adjudication	-0.027

N=142
Note: Standard errors are in parentheses
* p<0.1
** p<0.05
*** p <0.01

As noted above, my measure of completeness simply adds a number of factors, each of which it could be argued captures some component of completeness. An alternative approach to creating a variable, one that has received use in economics and psychology, relies on factor analysis. Factor analysis identifies key dimensions of common variation in a group of variables. I use the first factor (the one

that accounts for the largest fraction of the variation) as my summary measure.[47] If the factor analysis does a better job of capturing the common component of the variation than the interaction measure, we would expect, based on a measurement error story, that it would have a larger and more precisely estimated effect. The result of the cross-tabulation, displayed in Table 11, strongly supports the conjecture. Completeness and provisions calling for the delegation of dispute resolution are strongly and negatively related.

Table 11: Correlation of Completeness and Delegation of Arbitration/Adjudication

Correlation of Completeness (Factor Analysis) and Delegation of Arbitration/Adjudication	-0.451***

N=142

Note: Standard error in parentheses

* p<0.1

** p<0.05

*** p <0.01

10 Conclusion

The current sample of agreements was drawn at a time when the online version of the UNTS featured international agreements through December 1986. It has now been updated through February 2005. Hence the priority is to increase the sample through 2005 to allow time-series analyses. This is not trivial given that one set of questions we then can study are the effects of the bipolar world on institutional design, in particular, on delegation and membership in those agreements that call for delegation. For instance, the bipolar world may have inhibited widespread and deep delegation to global organizations; rather, perhaps the bodies that were created during the Cold War were narrow in terms of membership. Polarity may also affect the nature of the problems that are resolved through international agreements.

Another issue that could be addressed is whether states have increased the amount or depth of delegation to NGOs? The rising importance of nonstate actors has been declared but has yet to be demonstrated in any rigorous way.

COIL encourages us to broaden our perspective when thinking about international agreements. While questions of multilateralism versus bilateralism or important versus not as important agreements are still interesting and important, there are numerous other ways of dividing and analyzing agreements

[47] In other words, from the set of variables that I believe are related to completeness, factor analysis will enable us to create one synthetic indicator. In particular, it attempts to find out if the set of observed variables can be explained to a large extent by a set of smaller variables called factors, with the first factor being the most important one and hence the synthetic indicator.

that shed light on the foundational questions of international relations. We can examine the intersection of membership and explicit punishment provisions, of power and asymmetry, or of issue area and the incidence of recommendations versus prescriptions – just to name a few of the possibilities.

If the next set of analyses confirm the findings of the past five years, we will be able to say undeniably that the continent of international law is nuanced and sophisticated – and one that can speak meaningfully to scholars in American and comparative politics as well as law and economics.

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