

“An Economic Analysis of *International* Rulemaking”

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International law, in particular as it is codified in countless international agreements, is far from uniform. For example, consider the degree of precision accorded to an agreement's main goals: Some commodity agreements dictate annual export quotas with specific graduated sanctions that depend on how often a violation has occurred.¹ At the other extreme, some human rights agreements give individuals health and medical rights without enumerating in any clear way what those rights are or how they should be interpreted.²

Domestic law is also widely varying as to its precision. Driving laws are often very precise, as when a speed limit is posted. Laws about public indecency are often extremely vague. In Ann Arbor, what is prohibited is engaging “in any indecent or obscene conduct in any public place.” Since many things can be interpreted as indecent or obscene, such crimes are often viewed as “catch-all” crimes.

In the domestic context, by definition, the more imprecise a law is, the more authority is delegated to a court to interpret things left incomplete.³ In the international context, there are no courts with automatic and authoritative jurisdiction lurking in the background to interpret vague agreements. In other words, in the domestic context, precision and delegation to a judicial authority are two sides of the same coin whereas in the international context they are not.

¹ The 1962 International Coffee Agreement (UNTS 6791).

² Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine (UNTS 37266).

³ Indeed, in areas like administrative law, congressional use of vague language and undefined terms is presumed to be an express delegation. I thank Mark DeSouza for that point.

What does the judicial dimension of international law look like? In other words, what happens when a dispute arises between states under an international agreement? Like precision, this dimension, too, shows great variation across actual international agreements. Some agreements dictate that all disputes will be resolved through friendly relations while others create and delegate authority to a court – a court that has the authority to make binding decisions.⁴

In the domestic context, the choice of precision is the subject of a 1974 Law and Economics classic by Isaac Ehrlich and Richard Posner, entitled, “An Economic Analysis of Legal Rulemaking” (elaborated below). They argue that the choice of legal precision is a choice between legislative decision-making and judicial decision-making, as less precise laws will be open to broader interpretation by pre-existing judicial bodies.

This article has been widely received in the law and economics literature. Indeed, Kaplow and Shavell (1999) credit Ehrlich and Posner’s article as one of the first to avoid taking law as a given and instead to examine the actual formulation of legal rules. Ehrlich and Posner’s consideration of lawmaking has brought together political and legal analysis and has sparked much discussion and debate. Specifically, scholars have gravitated toward Ehrlich and Posner’s conceptualization of rules and standards and have sought to attach to them more concrete definitions (Kaplow, 1992). Scholars have also attempted to specify and calculate the costs of formulating and interpreting the law (Schneider, 2002). And finally, much debate (both positive

⁴ For example, “The Cooperation Agreement between France and Morocco” (UNTS 20783) stipulates that all disputes shall be resolved through “friendly channels.” In contrast, the “American Convention on Human Rights” (UNTS 17955) uses mediation and adjudication as avenues of dispute resolution. States submit their concerns and arguments to the mediation body created by the agreement, which then considers the facts and states its conclusions in a report to the disputing members. If the dispute is still unresolved after attempts at mediation, states submit their concerns and arguments to the court created by the agreement -- the Inter-American Court on Human Rights. The court has authority to make binding decisions and give final interpretations regarding the agreement’s provisions.

and normative) has surrounded the issue of the optimal level of precision in legal matters (Fon and Parisi, 2003; Schaefer, 2001).

Given how influential “An Economic Analysis of Legal Rulemaking” has been in the law and economics literature, the dearth of dialogue in the international relations (IR) and international law (IL) literatures stands out in sharp contrast. In fact, the law and economics literature, more generally, has been almost completely ignored in IR scholarship. Perhaps this is not too surprising given that traditionally IR has focused on the phenomenon of “anarchy,” arguing that anarchy makes IR essentially different from other fields. Hence law scholarship was widely believed to be inapplicable to the international sphere.

I argue that law and economics theory can indeed be applied to international law and that the body of international agreements provides a *harder* test case for the Ehrlich and Posner theory than can be found in the domestic context. In the domestic context, the inverse relationship between precision and delegation can be taken for granted because it is by definition. In the international context, precision and delegation are two separate institutional design choices; if they are systematically related, it is because of the conscious choices of those negotiating and writing international law. Thus it is in international relations that the *relationship* between delegation and precision can be investigated because it does not exist by definition.

The two dimensions of international law I am highlighting implicate a well-respected special issue of *International Organization*, entitled *Legalization and World Politics* (Goldstein et al., 2000). The Legalization special issue defines legalization as a particular kind of institutional design – one that imposes international legal constraints on states. It makes great advances in variable conceptualization, defining three dimensions of legalization: precision,

obligation, and delegation.⁵ The authors make the three dimensions of legalization come to life by giving numerous empirical examples from well-known agreements and thereby showcase the spectrum of values these variables can take. They define as “highly legalized” those agreements that score high on each of the three dimensions (402).⁶ One of the most widely used concepts to come out of the issue is the distinction between hard and soft law, where the former is more or less characterized by high values on at least two of the three dimensions.⁷

Given the lively research project on IL currently being undertaken by many IR scholars, it is time to extend the Legalization framework by posing the following questions: When are the dimensions of legalization substitutes, complements, or even conflicting design principles? Can states substitute one dimension for another to achieve a similar result, making the combinations somewhat like examples of multiple equilibria? If so, is there any basis on which to compare these combinations to see whether and when one is superior to the other(s)?

To begin to answer these questions, I develop hypotheses about the relationship between *precision* and the *delegation* of international dispute resolution, thereby implicating two of the three Legalization variables.⁸ Unlike the literature in law and economics, which can take for

⁵ Delegation by itself has been the subject of much good scholarship in IR and in political science, more generally. For a Principal-Agent approach, see Hawkins et al. (2006). On the different types of delegated authority, and on the extent of delegation, see Bradley and Kelley (2008), elaborated in footnote 8 below. Rational Design theory (Koremenos, Lipson, Snidal 2001, Koremenos 2016) identifies delegation as a solution to particular cooperation problems (this is elaborated in the theory section below). Hawkins et al. (2006) and Abbott and Snidal (2000) also note how delegation can improve cooperation. Finally, many authors discuss the sovereignty costs of delegation (e.g. Epstein and O'Halloran (2008); Alter (2008); Abbott and Snidal (2000)).

⁶ The introductory articles of the special issue are framed in general terms. This is intentional, as this is the first work to address the subject and its main objective is to serve as a springboard for more refined theoretical and empirical work. The case studies in the volume focus almost exclusively on describing the level of legalization in a few big agreements and the consequences of that legalization for the implementation of the agreements. This is no great departure from most work on international institutional design. One way to get a first grasp on issues is to focus on a few, high-profile agreements.

⁷ In fact, the special issue article by Abbott and Snidal (2000) is devoted to the subject: “Hard and Soft Law in International Governance.”

⁸ In a special issue of *Law and Contemporary Problems*, Bradley and Kelley (2008) recognize

granted the existence of courts and focus on their use, I extend the framework to explain the inclusion and design of dispute resolution provisions in international agreements. Specifically, I posit that precision and delegation of dispute resolution are substitutes and make a number of predictions about when we should see one or the other, employing such variables as the number of states involved in the cooperative endeavor and the complexity of the cooperation problem(s) they are facing. I subject my hypotheses to empirical scrutiny by employing a random sample of agreements spanning the four issue areas of economics, environment, human rights, and security and find support for my hypotheses.

This article thus speaks to the logic and efficiency of international law, thereby disputing the arguments of those who argue international law's triviality. This article also questions the conceptualization of hard law as articulated in the Legalization volume. And most important, the analyses challenge a long-held, widespread view that anarchy makes IR qualitatively different from other fields. Instead, the results reveal common ground among various sub-fields of political science and law.

Theory: Precision and Dispute Resolution at the International Level

How might we translate the law and economics literature described above to the international realm and derive some testable implications that can be subjected to empirical scrutiny? International agreements are one type of contract. Hence according to law and

international delegation as one component of legalization in international relations, but argue rightly that delegation deserves its own analysis because it "raises unique issues. For example, the factors that affect how one might classify international delegations may also differ from legalization more generally. Indeed, some factors may even weigh in opposite direction (as I will argue here) -- for example, precision indicates a high level of legalization, but it may indicate a low level of delegation" (2008:2). They elaborate: "One factor that affects the independence of the international body is the precision of the grant. Unlike legalization, delegation does not necessarily correlate with a higher degree of precision. Indeed, other things being equal, a more precise delegation will be more constrained, presenting less room for agency slack or diverging interpretations among member states" (2008:21).

economics logic, the more imprecise the international agreement, the larger the role for a court or another dispute resolution mechanism, like an arbitrator, to fill in the details. In the law and economics literature, empirical work can focus on how often courts are used and the decisions rendered. Such empirical work is impossible with a random sample of agreements. However, we can go one step back and realize that, 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*. If international law follows law and economics logic, we should see a positive correlation between dispute resolution *provisions* and agreements that are imprecise and a negative correlation between dispute resolution *provisions* and agreements that are precise. This inverse relationship between provisions calling for the delegation of dispute resolution and the precision of an agreement is articulated in Hypothesis 1 (H1).

H1: There is a **negative (inverse) relationship** between the level of **precision** in an international agreement and **provisions** calling for the **delegation of dispute resolution**.

This hypothesis begs the question of which type of costs member states will chose to pay: the costs of writing more precise agreements or the costs of provisions calling for the delegation of dispute resolution. These delegation costs include both spelling out provisions for dispute resolution, which may include the costs of creating a court, and the ensuing risks of delegation.⁹

The choice of precision is addressed by Ehrlich and Posner. In their analysis, a driving consideration is transactions costs minimization. More precise laws reduce the uncertainty surrounding the resolution of disputes. Hence precision allows parties to predict better the outcome of dispute resolution and so raises the likelihood of pre-trial settlement. However, more

⁹ The risks of delegation are most likely the more serious cost for states. Note how often states employ treaty reservations to retain control of whether or not they appear before the International Court of Justice (Koremenos 2016).

precision comes at a cost. All else being equal, Ehrlich and Posner argue that it is harder to get a heterogeneous legislature to agree on specific circumstances and issues, especially when the issues are numerous. Also, as the legislature grows in size, the transaction costs involved with negotiating and formulating rules grows as well. And as issue complexity rises, legislatures may increasingly delegate decision-making to judicial bodies.

The choice of delegation is addressed in the *International Organization* special issue, *The Rational Design of International Institutions* (Koremenos, Lipson, and Snidal, 2001), henceforth referred to as “Rational Design,” and elaborated theoretically and tested empirically in *The Continent of International Law: Explaining Agreement Design* (Koremenos 2016), henceforth referred to as “COIL.” In their introduction, 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 cooperation problems. Instead of using a typology of games, they disaggregate cooperation problems. Fundamentally, states potentially face *Distribution* problems (which refer to the different preferences that actors have over alternative possible agreements) and *Enforcement* problems (which refer to the incentives actors have to break an agreement). These are then shaped by various degrees of *Uncertainty about preferences* (that is, uncertainty regarding what one’s partners’ preferences are), *Uncertainty about behavior* (that is, not being able to decipher easily whether partners are cooperating or defecting), and *Uncertainty about the state of the world* (that is, uncertainty regarding the consequences of cooperation). Finally, the *number of actors* and asymmetries or heterogeneity among them affect the nature of the cooperation problem. Considering these factors independently allows for a treatment of their singular effects on important features of potential institutions and hence gets around the problem of forcing real-life issues into 2x2 games.

Koremenos et al. also argue that the study of international cooperation problems should be more tightly linked to the study of their solutions. The specific design solutions addressed are membership, scope, centralization, control, and flexibility.

The COIL research program (Koremenos 2016) builds on Rational Design but extends and refines it substantially both theoretically and empirically. First, there is a refinement and unpacking of the relatively broad dimensions of design in the original Rational Design formulation: In particular, centralization and flexibility are carefully disaggregated. This disaggregation is important because each separate centralization or flexibility mechanism considered is driven by a unique set of underlying cooperation problems. The mechanisms are not substitutes for each other; rather, they solve different problems and are analytically distinct. I also leverage the COIL framework to begin the investigation of what might be best left informal – that is, it might be optimal to leave some provisions implicit within formal international law. Additionally, COIL features a broader set of cooperation problems than did Rational Design. Specifically, commitment/time inconsistency problems, coordination (which too often has been conflated with distribution problems), and norm exportation are added. Many of the broad conjectures of Rational Design are also refined or even corrected. COIL also examines interactions among cooperation problems and, in doing so, implements further refinements of the original Rational Design conjectures. In all these ways, COIL extends the intellectual agenda of Rational Design.¹⁰ COIL's empirical contribution is discussed below.

To illustrate the intuition underlying the relevant COIL hypotheses, consider the following example: When there are incentives to defect from an agreement, as in particular environmental agreements for which free-riding off of others' cooperation is the dominant

¹⁰ All of the COIL hypotheses have game-theoretic underpinnings. For example, hypotheses about third-party (delegated) monitoring draw on Milgrom, North, and Weingast (1990).

strategy, one can imagine occurrences of defection where a third party would play a useful role in arbitrating the dispute and setting a punishment. Ex ante, all parties would agree to such centralization/delegation in the face of the enforcement problem since that is one way to ensure the Pareto superior mutual cooperation outcome rather than mutual defection. In contrast, if the issue surrounds technical standards, there is a distribution problem over which standards to choose, but once resolved, parties do not face incentives to defect. Therefore, the absence of a hypothesis linking Distribution problems and third-party dispute resolution makes sense.

The choice of delegated dispute resolution follows from the presence of two cooperation problems: Enforcement problems (i.e., prisoners' dilemma payoffs) and domestic Commitment problems. Let me elaborate. Enforcement problems, which imply parties have incentives to defect from cooperation, can be ameliorated by dispute resolution provisions. By explicitly identifying violators (and violations), the provisions force noncompliant states to incur reputational costs. By authorizing punishments, sometimes collectively, dispute resolution provisions make punishments more credible and therefore more effective. Collective punishment in particular can be difficult to achieve, and Thompson (2009) aptly identifies a sanctioners' dilemma, which can be alleviated through international institutions.

Commitment problems arise if an actor's current optimal plan for the future will no longer be optimal once that future arrives and the actor has a chance to re-optimize. By rendering agreements more legalized, dispute resolution provisions offer a device to solve Commitment problems. As Goldstein et al. (2000: 393) argue, by imposing constraints on domestic political behavior, international legalization can help governments tie the hands of their successors. Dispute resolution mechanisms provide other actors recourse to punish a

government for deviations from its announced plans, altering the incentive structure faced by governments.

Hence following the theory laid out in COIL, I offer the following hypothesis (H2):

H2: States facing **enforcement problems and/or domestic commitment problems** are more likely to include **delegated dispute resolution provisions** in their international agreements.¹¹

If agreements are tailored to the problems they are trying to solve, we would expect more centralized or formalized dispute resolution provisions when at least one of the above highlighted cooperation problems is present. And, given H1, if any of these cooperation problems are present, we would expect *less precision*.

Finally, according to COIL, agreements concluded with greater numbers of actors are more likely to include delegated dispute resolution provisions.¹² Ehrlich and Posner argue the flip side of this: As the number of parties to an agreement increases and/or their heterogeneity, the more imprecise the law. Hence I offer one final conjecture (H3):

H3: As the **number of actors** involved in the negotiation of an international agreement and/or their **heterogeneity** increases, states are more likely to include **delegated dispute resolution provisions** and write **less precise** agreements.¹³

I now turn to the data that will be exploited to test these three hypotheses.

Data

Testing these three hypotheses requires data. The empirical portion of COIL includes a data set featuring 234 randomly selected agreements across the issue areas of economics, environment, human rights, and security, and it includes the careful definition and

¹¹ The comparison is with those international agreements for which states face none of the highlighted cooperation problems.

¹² This is a simple transactions cost argument.

¹³ This prediction refines the Abbott and Snidal (2001) conjecture that when heterogeneous states are implicated in a cooperation problem, the resulting agreement will be characterized by low precision and limited delegation (444); rather, I predict lower precision but greater delegation.

operationalization of the cooperation problems so that they can be identified across the sample.

The random sample of international agreements was drawn from the United Nations Treaty Series (UNTS).¹⁴ Defining the population of interest represents a crucial first step in any sampling exercise, and, in this context, it meant answering the question of exactly what counts as an international agreement? Inclusion criteria were developed through an iterative process that included consultation with experts in the field, including senior scholars in IR and international law as well as policymakers at the U.S. State Department's Office of Treaty Affairs.¹⁵

A coding instrument was used to record the characteristics of the agreements. Among the provisions coded are *flexibility provisions* (e.g., Can a subset of states amend the agreement? If so, is it binding on all members? Are there certain provisions that states can opt out of but still retain membership in the agreement?); *membership provisions* (e.g., Are there particular member states that must ratify the agreement before it enters into force? Are nonstate actors given any rights or responsibilities?); *provisions related to monitoring and compliance* (e.g., Do states exchange information? Is the information self-reported or gathered by an independent agency? Are there penalties for failure to comply with agreement provisions?); and *references to other international agreements*. These are just a few of the hundreds of characteristics potentially coded.

¹⁴ The COIL sample drew from UNTS agreements with registration dates through 2006. The Internet address is <https://treaties.un.org>. Overall, the UNTS database currently contains over 200,000 agreements and subsequent actions, where an agreement may be an original agreement, a protocol, or a renegotiated contract. To date, there are nearly 4000 registered original multilateral agreements, with over 3000 accompanying subsequent actions. Bilateral agreements and their accompanying actions comprise the remainder of the set. Notable omissions from the UNTS database include agreements registered with various regional organizations such as the African Union and agreements negotiated among Middle Eastern states.

¹⁵ These inclusion criteria are available on the COIL website and in Koremenos (2016).

The coders for this project were extensively trained in order to give them high levels of both competency and consistency.¹⁶ Two separate sets of coders for the cooperation problems (the independent variables) and the hundreds of design dimensions (the dependent variables) were employed to preserve the integrity of the project, thereby facilitating the scientific testing of the COIL hypotheses.

Specifically, with respect to the design variables, two coders independently coded each agreement using an online survey instrument. After they completed their surveys, an intercoder reliability report was generated for the 375 questions for which there are “quantitative” answers, like yes/no, multiple choice, or a number. (There are an additional 160 fill-in questions.) The average coded agreement was characterized by disagreement on approximately 15 questions, or 4% of the quantitative questions; the range was between 2% and 11%. Hence from an intercoder reliability standpoint, these statistics are excellent. The inconsistencies were resolved through a close rereading of the agreement and supervised discussion involving the original coders, a trained graduate student, and the author.

Variables

I now describe the dependent and independent variables used in this analysis.

Dependent Variables: Dispute Resolution, Precision

To quantify the variation in dispute resolution provisions across international agreements, I distinguish four possible channels for the resolution of disputes. The first method is *informal* – that is, is the dispute to be settled through diplomacy, friendly negotiations, or other informal methods not involving any other actors? Sometimes agreements suggest that this method be tried

¹⁶ The majority of coders went through 9-12 months of course-based training, which included both theoretical training and practice coding runs.

first; other methods are then outlined should informal methods fail. The next method, a more formal avenue, is *mediation*, which I define as a nonbinding form of dispute resolution in which a neutral third party assists disputing parties in reaching a mutually agreeable solution.

Generally, mediators only transmit the disputants' positions, but they can help reconcile different positions if all parties trust the mediator. *Arbitration* is a stronger form of dispute resolution because third-party actors actually work toward a resolution. More specifically, arbitration occurs when a third party, selected by the disputants, resolves the dispute. An arbitration provision will usually specify how an arbitrator is to be chosen and whether the arbitrator's findings are binding on the parties. The fourth method of dispute resolution is *adjudication*, where a court steps in to make a ruling for the disputants. As in arbitration, sometimes the agreement will specify how the judges are to be chosen. Of course, many agreements provide for more than one method of dispute resolution. Below I present descriptive statistics on dispute resolution provisions.

With respect to which entities are considered dispute resolution bodies, the coding protocol has been that the agreement must mention how disagreements or disputes or differences in interpretation are handled and that particular task must be delegated to a body. For the purposes of this study, I code as delegation those dispute resolution provisions that call for the delegation of arbitration and/or adjudication.¹⁷ I leave out mediation since mediators mostly

¹⁷ I made a decision to limit my analysis to delegated *dispute resolution* because most of the Legalization special issue discussion on delegation revolves around that. Importantly, the delegation can be either to a body created by the agreement or to a pre-existing third party. As Thompson (2006) notes, "Arguably, delegation to congressional committees, composed of a subset of the membership, more closely matches circumstances at the international level than does delegation to large, autonomous bureaucracies, which have fewer analogs among international institutions. Similar to these committees, [international organizations] are composed of a subset of states in the international system." Bradley and Kelley (2008: 8) also follow this logic: "We consider states to have granted authority to a council or board that may be part of the international body but composed only of a sub-group of member states. This holds even for

bring parties together and at times simply suggest resolutions; thus the resolution of the dispute is left primarily to the parties of the agreement.

To bring this variable to life, consider the following example, in addition to the examples provided in the introduction. In an investment agreement between the United Kingdom and Egypt entitled Agreement for the Promotion and Protection of Investments (UNTS 15181), the states must submit their dispute to an arbitral body if they cannot settle it diplomatically. The members of this body are chosen by the disputing states, but if they cannot find mutually-acceptable members, the selection process is turned over to an external source. The arbitral body listens to arguments, considers the facts, and, in this case, makes binding recommendations to resolve the dispute. This agreement is coded as having both informal dispute resolution as well as the delegation of arbitration.

The precision variable captures the degree of *precision* surrounding the main prescriptions, proscriptions, and/or authorizations embodied in an international agreement. The overall precision can take on four values from very vague to very precise. An agreement's degree of *precision* or *ambiguity* refers to the exactness or vagueness of its prescribed, proscribed, and authorized behaviors. *Precision* is often reflected in clearly stated "shall/shall nots" as well as in the amount of detail accorded to each behavior. *Ambiguity*, in contrast, refers to how much doubt exists about the way in which the behaviors are to be executed. The main question coders were trained to answer when coding this variable is, "How easy or difficult would it be to tell if an actor is in compliance with the agreement?" The more precise the agreement, the easier it is to say, "Yes, that is compliance," or "No, that is not compliance." In other words, how clearly is the line drawn between acceptable and unacceptable behavior under the agreement?

states that sit on a board or council, since they are still granting the board or council authority to make decisions or take actions. An example is when states act through the UN Security Council."

Easily quantifiable behaviors, like those that dictate compliance with quotas, are usually *very precise*. For example, “Exporting Members shall not exceed the annual and quarterly export quotas allocated to them” (International Coffee Agreement of 1962, (UNTS 6791) Article 36 (2)); the quotas are unambiguously set forth in an appendix. As another example, the “Agreement between the U.S. and Ecuador for Financing Certain Educational Exchange Programs” (UNTS 4114) creates a bilateral commission to administer a joint educational exchange program between the U.S. and Ecuador, funded by Ecuadorian payments for surplus U.S. agricultural commodities. The agreement describes 1) the administrative mechanisms for the management of the program; 2) the types of expenses that can be covered by the program: “payment of transportation, tuition, maintenance, and other expenses incident to scholastic activities;” and 3) the funding mechanisms to support the program. Article 8, which describes the funding mechanism, is more than a page, includes both specific amounts and the exchange rates to be used, and discusses the interaction between the U.S. State Department and Treasury.

Agreements that broaden the range of behavior, like forbidding actions of a military nature, are usually only somewhat *precise*. For example, the Antarctic Treaty (UNTS 5778) states: “There shall be prohibited, inter alia, any measures of a military nature, such as the establishment of military bases and fortifications, the carrying out of military maneuvers, as well as the testing of any type of weapons.” This article is somewhat precise because it prohibits the testing of any weapons and begins to define “military nature” as the establishment of military bases and the testing of weapons; however, these terms do not constitute an exhaustive list.

Generally stated behaviors, like those found in many (but not all) human rights treaties, are *vague*. The African Charter for Human and People’s Rights (UNTS 26363) contains articles that are both somewhat and very vague. The article stating “Every individual shall have the right

to express his opinions within the law.” is somewhat vague because, although it specifies a specific human right, the right to express opinions, the boundaries of the term “opinion” are themselves quite vague; the article stating “Every individual shall have the right to civil and political rights.” is very vague as the terms civil and political are never defined.

In coding such a variable across a random sample of agreements, it is particularly important to use the same trained coders who can identify the differences and similarities across a set of agreements based on their experience. The project employed such coders, and each agreement was carefully read and coded by two independent coders. Still, as a check on the coding of precision, which unlike the variable of dispute resolution requires a judgment call, a third coder examined the entire set of agreements and focused only on precision, thereby noticing any inconsistencies in coding given that he focused solely on one variable.¹⁸

In the analyses, the precision variable is coded such that very precise = 4 while very vague = 1. As a robustness check, I also create an additional variable that includes whether the agreement contains at least one annex or protocol. Annexes and protocols dramatically increase the precision of an agreement by elaborating the main prescriptions and proscriptions. I add 1 to the precision measure if the agreement contains an annex, appendix, or protocol. In both cases, a greater number implies a more precise agreement whereas a lower number implies a more vague agreement.

Use of the bivariate probit model, discussed below, necessitates that all dependent variables are binary. As noted, I code as delegation those dispute resolution provisions that call

¹⁸ For the record, the coder changed 15% of the agreements. Only one agreement was changed by two categories/numbers with the rest changed by one category/number. (The only other coding project that employs such a technique is Mitchell’s database on environmental agreements. See Mitchell and Rothman (2006) for a discussion of the merits of this approach.) Additionally, an environmental law specialist checked the agreements with which he was familiar. His coding was similar to ours – either exactly the same or, in one case, he coded “very vague” and we “somewhat vague” but in the analyses presented below, the two answers are both coded as 0 so the results are robust to his particular coding.

for the delegation of arbitration and/or adjudication. Therefore, a score of 1 implies the agreement delegates arbitration and/or adjudication whereas a score of 0 implies it does not. I also create a dichotomous variable for precision, with a score of 1 indicating high levels of the variable, corresponding to a value of either 3 or 4 for that variable, and a score of 0 indicating low levels of precision, corresponding to a value of either 1 or 2.¹⁹

Independent Variables: Cooperation Problems with Incentives to Defect, Number, Heterogeneity

I employ three independent variables: the presence or absence of particular underlying cooperation problem(s) that states are trying to solve, the number of participants, and their heterogeneity.

As noted above, two trained coders carefully read the international agreement and coded hundreds of institutional design variables. Independently, a graduate student with training in rationalist approaches to international cooperation and I also looked at the agreement before it was given to the coders, answering the following substantive question among others: How can the cooperation problem be characterized? A detailed definition and example of each of these problems is given on the project's website. More than one answer can be chosen for each agreement. This gets around the problems of having to force real-life issues into 2x2 games.

Specifically, each particular agreement is characterized by the presence (coded as high or 1) or absence (coded as low or 0) of each possible cooperation problem. In reality, all situations are characterized by almost all cooperation problems to some degree, but COIL codes them as existing if they are present in high as opposed to low levels. For example, Uncertainty about Preferences always exists to some degree in any interaction, but a situation has to be

¹⁹ For the precision plus annex variable, a value of 1 (for which there are only three agreements), 2, or 3 is translated as a 0 whereas a value of 4 or 5 is given a score of 1.

characterized by high Uncertainty about Preferences (e.g., Soviet Union and United States during the Cold War *for some issues*, as opposed to United States and Canada during the same period) for it to be considered present.

In making the decision to code cooperation problems as either high or low, the replicability and consistency of coding played decisive roles as they do in the project overall. For instance, one alternative would be a numerical scale. Consider the cooperation problem of Uncertainty about Behavior. Suppose it could take on values from 1 to 5, with 1 reflecting a situation of great transparency when it comes to compliance and 5 reflecting one with the most severe uncertainty. Given that scholars often disagree with each other on how to code a set of five cases in case study work that is rich in detail, it is unlikely that we would each independently choose the same number when coding the Uncertainty about Behavior inherent in, say, ensuring that women have equal rights. Furthermore, scholars may have very different opinions about whether the uncertainty in the aforementioned human rights sub-issue area is higher compared to the sub-issue area of chemical weapons (for which compliance is also difficult to observe from afar), lower, or the same. Yet, it is quite likely they would agree on a binary sorting: Both sub-issue areas have high as opposed to low Uncertainty about Behavior underlying them. For each and every agreement in the sample, a justification is given if the underlying cooperation problem is coded as passing the threshold from low to high.

Measuring cooperation problems and quantifying their prevalence in real international agreements has not yet been attempted, despite their centrality in our theories. Obviously, the cooperation problem questions are not nearly as straightforward as those pertaining to design. An inference must be made from the agreement to the cooperation problem(s). Nonetheless, some factors should alleviate concerns.

To begin, the inference came by looking at relevant background information. Sometimes, the political history of the states had to be examined in the decade(s) before the agreement is signed to determine whether the agreement may be attempting to solve a domestic Commitment problem – as Moravscik (2000) argues regarding newly democratized states and human rights agreements. In a bilateral agreement, the relationship of the dyad in the decade(s) before the agreement is signed was examined.

Research was also done on the general problems of the sub-issue at the time to determine whether the sub-issue is characterized by Uncertainty about Behavior (technological and other obstacles to using national means to determine the compliance behavior of others) and/or Uncertainty about the State of the World (sub-issue areas like agricultural commodities are prone to exogenous shocks that can alter the benefits or distribution of benefits from cooperation).²⁰ In some sub-issue areas, like that of environmental regulation or certain human rights standards, domestic actors within states are those whose behavior is being regulated, and their incentives may be different than the government's incentives. Such factors are taken into account in the coding.

Importantly, only the substantive goals of the agreement, not the design aspects, were considered in inferring the underlying cooperation problem(s). This separation is critical to the COIL research program, which focuses on the nexus between cooperation problems and design aspects of international agreements. In fact, there were two separate sets of coders for the cooperation problems and the design variables to safeguard the integrity of the COIL data set.²¹ Thus, while the COIL theory is quite parsimonious, the empirical work that goes into the coding

²⁰ Koremenos (2005) details the coding of Uncertainty about the State of the World.

²¹ Multiple examples of the coding of underlying cooperation problem can be found on the COIL website.

of each underlying cooperation problem draws on materials like memoirs, historical analyses, and the parties' institutional history.

In what follows, I expound on the background research that went into coding a particularly puzzling agreement in the COIL sample: The Agreement for Environmental Cooperation between Denmark and Oman signed in 1993. The agreement substantively covers solid and hazardous waste disposal and noise pollution. Given the distance between Denmark and Oman, the common explanation for many environmental agreements, i.e., solving the enforcement or free-riding problem that derives from negative externalities, is not satisfying. Neither state will benefit in any material way from less waste or noise pollution in the other state. Moreover, if the benefits of minimizing this kind of pollution in Oman were so advantageous to Denmark, why had Denmark not agreed to similar agreements with other, geographically closer states? Oman itself had not signed a single environmental agreement in the decade before with any state. Why then did these two states decide to cooperate in this issue area?

Research on the issue area and on these two states led to a couple of interesting discoveries. First, Denmark signed five substantively similar bilateral agreements with Slovakia, Belarus, Ukraine, Bulgaria, and Poland in 1994. As in the case of Oman, these five states were at the time far less wealthy and developed than Denmark, not contiguous to Denmark, and, with the exception of Poland, lacking a history of making environmental agreements. Second, these bilateral agreements closely followed the 1992 Earth Summit in Rio de Janeiro, at which environmental development was discussed at length. Given the importance of international environmental protection to the Danish, which was also documented, it was concluded that one of the underlying cooperation problems was Norm Exportation.²² This example is indicative of

²² This agreement is also coded as having an underlying Uncertainty about the State of the World given that the costs and benefits of the proposed collaboration were quite unpredictable at the time.

the kind of thought and research that went into the coding of each agreement. A short coding appendix in Koremenos (2106) describes coding rules

According to the hypotheses, agreements for which the underlying cooperation problem is one of enforcement and/or commitment/time inconsistency are more likely to include delegated dispute resolution provisions than those not characterized by one or more of these problems. Therefore, I create a variable called, “Incentives to Defect,” that is equal to one whenever an agreement attempts to solve one or both of these cooperation problems and zero when an agreement does not.

I measure the number of participants as the natural log of the number of participants in the agreement.²³ Heterogeneity is measured using Gartzke and Jo’s “Affinity of Nations Index” (2002). This index measures the similarity of preferences of states, based on voting positions in the United Nations General Assembly, and is calculated using Signorino’s “S” score of the similarity of alliance portfolios (Gartzke and Jo 2002; 1999). Because the Affinity data are dyadic, I simply take the Affinity value for each bilateral agreement. For the multilateral agreements, I first create a dyad for each pair of signatories. Hence, if there are three signatories, there are three dyads; if there are four signatories, there are six dyads, and so on. For each multilateral agreement, I use the “weakest link assumption,” taking the Affinity value of the dyad with the least similar interests.²⁴

²³ I use the log of the number of participants because the unlogged variable is highly right-skewed and its log is almost perfectly normally distributed.

²⁴ This “weak-link assumption” is common in quantitative research on the causes of international conflict. See, for example, Dixon (1994) and Oneal and Russett (1997).

Descriptive Statistics

Tables 1 and 2 present a first glance at the incidence of the variables of interest. With a random sample of 234 agreements, there are quite a few interesting patterns. Table 1 shows that the incidence of any form of dispute resolution provision varies by issue area, with human rights ranking the highest at 66%. Over 50% of the economics agreements have dispute resolution, while security and environment agreements are much less likely to have dispute resolution. These differences across issue areas are statistically significant as shown by the coefficient on Pearson's chi-squared test for independence.

Informal dispute resolution is the most common type of dispute resolution provision for all issue areas. In the entire sample, 41% of agreements include provisions for informal dispute resolution. Mediation is used most often in human rights agreements. Arbitration is called for in over a quarter of the agreements. Over a third of economics agreements use arbitration, while only 2% of security agreements do so. Finally, although it is rare in security agreements, almost half of human rights agreements call for adjudication, the strongest dispute resolution process.

With respect to the precision of agreements, there are clear differences in precision by issue area, demonstrated in Table 2. Economics agreements are nearly always somewhat or very precise. Almost three-fourths of environmental agreements are also somewhat or very precise whereas almost 40% of the human rights agreements are very or somewhat vague almost half the time.

Issue Area	Informal	Mediation	Arbitration	Adjudication	Any Dispute Resolution
Economics	51%	17%	41%	23%	52%
Environmental	23%	14%	19%	21%	30%
Human Rights	39%	20%	22%	49%	66%
Security	38%	11%	2%	4%	38%
Total	41%	15%	26%	24%	48%
<i>p-value of chi-squared test</i>	<i>0.022</i>	<i>0.678</i>	<i>0.00</i>	<i>0.00</i>	<i>0.00</i>
<i>N = 234</i>					

Issue Area	Very Vague/Ambiguous	Somewhat vague/Ambiguous	Somewhat Precise	Very Precise
Economics	0%	2%	62%	36%
Environmental	2%	28%	49%	21%
Human Rights	7%	32%	46%	15%
Security	2%	17%	45%	36%
Total	2%	15%	53%	30%
<i>p-value of chi-squared test</i>	<i>NA*</i>	<i>0.036</i>	<i>0.00</i>	<i>0.00</i>
<i>N=234</i>				

* = due to small cell sizes

Empirical Testing: Bivariate Probit

The relationship between delegation and precision does not fall into the typical independent and dependent variable relationship, as both are dependent (agreement design) variables. The existence of one cannot explain the presence of the other, except that they are expected to vary inversely: As precision increases, delegation is expected to decrease. Moreover, many of the variables used to predict delegation also predict precision, suggesting that the unobserved forces that affect delegation may also affect precision. In other words, the unobserved variables that encourage states to be more precise when designing agreements may also be the same variables that encourage states to decrease levels of delegation. Thus the error terms in models predicting delegation and precision are likely to be correlated.

Given that both delegation and precision are dependent variables, formally examining the relationship between them poses some challenges. Employing regular probit to analyze the correlation between these two variables is inappropriate. Bivariate probit considers two simultaneous equations while allowing for covariance between the error terms (Greene, 2003; Berinsky, 2002; Goodliffe, 2001; and Huth and Allee, 2002). The estimated value of ρ , the correlation between the error terms of the two equations, indicates the magnitude of the correlation. The Wald Test evaluates the statistical significance of the correlation. In this case, a strong and significant negative correlation would indicate a negative relationship between precision and delegation, supporting H1. Bivariate probit also shows the degree to which the same observed variables affect delegation and precision, thereby allowing testing of H2 and H3.

In my model, I include as independent variables the three variables that are implicated in the theoretically-derived conjectures: *number*, *heterogeneity*, and *incentives to defect*. I also include dummy variables for the human rights, economic, and environmental issue areas

(security is the excluded category) because the random sample is conditional on issue area. The only theoretical prediction with respect to issue area engages the category of human rights. One of the major problems underlying cooperation in human rights is the issue of whose norms are to be codified and exported, i.e., a distribution problem. In many agreements for which there is a distribution problem, there is also a coordination problem in which complete coordination is necessary, e.g., one clear territorial boundary, one clear technical standard. Unlike these archetypal distribution problems in IR, cooperation in human rights does not require complete coordination; rather, Koremenos 2016 argues that vague provisions allow states with different preferences to sign onto the same agreement while at the same time making clear that behavior below some threshold is unacceptable. In other words, states can solve the distribution problem in human rights by making vague agreements. Hence I would expect the sign on the human rights dummy to be negative for the precision variable.²⁵

²⁵ In a second model, I add a number of control variables for which I have no rigorous theoretical predictions as to their signs but which are commonly included in analyses of international relations: a *superpower* variable, equal to 1 if the US or the USSR is a signatory and 0 otherwise; a *democracy* variable, equal to the mean Polity IV value of all signatories; and the signatories' mean *GDP* per capita, as measured in the Penn World Tables.²⁵ With respect to the superpower variable, it could be argued that powerful states are both less likely to delegate and less likely to write precise agreements because they want either to be able to control the evolution of their cooperation or they don't want to commit themselves to much cooperation at all. This argument draws on those views in IR that emphasize power to the exclusion of most other variables.

Table 3: Bivariate Probit Analysis

Model 1					
	Arbitration/ Adjudication	Marginal Effects for Arb/Adj	Precision	Marginal Effects for Precision	Wald tests for equality of coefficients
Number of Participants	0.399** (0.134)	0.027* (0.012)	-0.120 (0.129)	-0.110** (0.037)	$\chi^2 = 7.37^{**}$ $p = 0.007$
Heterogeneity	-0.353 (0.398)	-0.027 (0.036)	0.156 (0.416)	0.103 (0.115)	$\chi^2 = 0.68$ $p = 0.409$
Incentives to Defect: Enforcement and/or Commitment Problem	1.938*** (0.242)	0.121** (0.042)	-0.445^ (0.256)	-0.527*** (0.06)	$\chi^2 = 38.15^{***}$ $p = 0.000$
Human Rights Issue	2.244*** (0.522)	0.156* (0.079)	-0.465 (0.318)	-0.681*** (0.109)	$\chi^2 = 16.63^{\wedge}$ $p = 0.000$
Environmental Issue	1.765*** (0.518)	0.115^ (0.064)	-0.322 (0.303)	-0.558*** (0.143)	$\chi^2 = 10.77^{***}$ $p = 0.001$
Economic Issue	2.373*** (0.499)	0.007 (0.021)	1.167*** (0.348)	-0.466*** (0.103)	$\chi^2 = 3.75^{\wedge}$ $p = 0.053$
Constant	-4.204*** (0.689)		1.356** (0.470)		
ρ Wald test of ρ	-0.426* (0.160) $\chi^2 = 5.435^*$ $p = 0.020$				
N	211				

^ = 1.0, * = 0.5, ** = 0.01, *** = 0.001, heteroscedasticity-robust standard errors

Table 3 presents the results of the bivariate probit analysis. Because probit coefficients are not easily interpreted, I also include marginal effects (partial derivatives evaluated at the mean of the covariates). H1, which posits an inverse relationship between delegation and precision, is strongly supported. In the model, ρ is significant both substantively and statistically,

suggesting that the unobserved factors that positively influence the delegation of dispute resolution have negative effects on the likelihood of having a precise agreement. The results of the Wald test also indicate that the disturbances in the two equations are inversely related.

With respect to the independent variables, there is strong evidence that, all else equal, as the number of participants increases, states are more likely to delegate dispute resolution (H3). There is also still strong evidence to support H2; the presence of incentives to defect has a strong and positive effect on the likelihood that an agreement delegates arbitration and/or adjudication. The variables affecting precision are correctly signed, except for heterogeneity, but do not attain statistical significance; importantly, however, the final columns in Table 3 show that the *differences* between the coefficients for the variables of number, incentives to defect, and human rights are significant, which is the relevant statistic.²⁶

To give a sense of the magnitude of the causal effects, for Model 1 in the first row, second column, the value of 0.122 means that increasing the number of participants by 1 increases the probability of an arbitration/adjudication provision in an agreement by 0.122, which is substantively large. In fact, the estimates are substantively large in many cases and often precise enough to be distinguished from zero. These are promising results given the relatively small sample.

Concluding Thoughts

International law is not made in a vacuum but rather permeated by international politics, including power politics. Therefore, it is not surprising that, when thinking about institutional design choices like the degree of precision or delegation in an international agreement, domestic

²⁶ The correlation between number (logged participants) and heterogeneity is 0.614, which is the highest level of correlation among the independent variables.

law examples were heretofore ignored. The Legalization volume's elaboration of three *independent* dimensions of international law, which include precision and delegation, seems sensible in this light.

That said, it does not make sense to argue that higher values on all three dimensions of legalization imply greater legalization or to argue that higher values on two of the dimensions imply harder law since two of the dimensions are often substitutes. The optimally-designed international agreement would not approach the ideal type of high legalization, as defined by the authors of the Legalization special issue, and score high on both delegation and precision; rather, the true ideal type would be characterized by either high delegation or high precision, depending on a set of other parameters. Similarly, rather than talk about hard law versus soft law, we can now bring two of the actual dimensions into our vocabulary in a systematic way and push ahead with even further refinements.

It is also reasonable to conjecture that powerful states might want less delegation and less precision because they might better be able to control outcomes with fewer institutional constraints. Nonetheless, while that may be true, powerful states also want to solve their cooperation problems, even when that implies self-imposing constraints. Just as striking, they and the rest of the states in the system seem to want to solve their problems efficiently. The results above indicate that states often choose either one or the other of these dimensions (but not both), depending on the details of the cooperation problem being solved and the number of actors involved in the cooperative endeavor. Thus, precision and delegation are not truly independent dimensions of legalization. Theory can guide us as to which of these choices is optimal given features of the contracting environment and the parties.

Some may reasonably ask of this analysis, what happens when a dispute arises and an agreement calls for delegation? While this is not the question of this article, it still is helpful to look very briefly into what happens in practice with a couple of agreements from the random sample from two different issue areas: economics and human rights.²⁷ (Many IR scholars find these issue areas to be quite different in their logics of design and effect.)

In economics, a common type of agreement is a bilateral investment treaty (BIT), and these are a part of the random sample. It turns out that the record of compliance with international arbitration awards in investment disputes is markedly positive. Although statistical evidence is difficult to compile because many decisions remain private, Baldwin et al. (2006) note that the awards rendered by the International Centre for Settlement of Investment Disputes (ICSID) panels have largely been final and self-executing. From 1966 to 2006, only three cases appear to have been brought to national courts to challenge the enforcement and execution of a panel's decision.²⁸ Moreover, just as BITs are on the rise, the rate at which disputes are submitted to ICSID also remains on the rise, and developing nations are increasingly using international investment arbitration. In the face of such challenges, the ICSID Convention affords successful complainants the use of strong enforcement mechanisms.

In human rights, one of the agreements from the random sample is the American Convention on Human Rights (see footnote 4). This agreement creates its own court, the Inter-American Court of Human Rights. Over the years, the Inter-American Court has seen numerous

²⁷ There are currently two major and complementary research programs for those interested in international cooperation: one that focuses on institutional design and one that focuses on compliance. Both have large followings, and there are research design issues that make each one unique and useful: Those studying institutional design can use random samples, compare more easily across issue areas, and have fewer problems with accusations of biased cases; those studying compliance can delve deeply into a few agreements or institutions and get a sense of how they affect politics and welfare on the ground.

²⁸ If a defendant refuses to comply with the final decision of an ICSID panel, an investor can petition its home government to refer the case to the International Court of Justice. For an overview and analysis of the ICSID enforcement mechanisms, see Choi (1995).

cases. As Tan (2005:343) states: “Of those many rulings, only a few states have refused or been slow to comply with these Courts' orders.” Indeed, citing international law scholar Douglas Cassel, Tan states “the Court has only had one and a half full-blown, defiant responses” (2005:321).²⁹ ³⁰

If we were to think of a continuum from domestic law to complete anarchy, with precision and delegation being only one dimension (two sides of the same coin) in the domestic case to completely independent dimensions in the anarchic case, the moderately large negative correlation found in the analyses above, while not perfect, does further suggest that international law is closer on the continuum to domestic law than previously thought. Ehrlich and Posner’s “An Economic Analysis of Legal Rulemaking” indeed sheds light on *international* rulemaking.

This analysis also confirms that while international law is widely varying, it is not wildly varying! When we examine the continent of international law through the game-theoretic lens of the underlying cooperation problems states are trying to resolve, we expect *systematic* differences across international agreements and institutions. The empirical results confirm that states are shaping agreements to solve their specific problems.

More broadly, the findings call attention to the relevance of the law and economics

²⁹ The article cited is Douglass Cassel, *Peru Withdraws from the Court: Will the Inter-American Human rights System meet the Challenge?* 20 HUM. RTS. L.J. 167, 167-168 (1999).

³⁰ And, interestingly from the perspective of the argument in this paper, scholars recently pointed out the implications of vague and imprecise language *in the orders of international courts* (Staton and Romero, 2011). On the one hand, vague language allows courts – which have preferences over ends, not means – to grant governments and bureaucracies some discretion over how to achieve these ends. Being better informed about the conditions in their states, they can often make more adequate choices about policy means than international judges. On the other hand, the discretion afforded by vague language allows governments to defy compliance more easily, pointing to misunderstandings and ambiguities, which for international courts implies a loss of control over outcomes. This trade-off poses a challenge to international courts that, as Staton and Romero point out, may call for additional institutional features, such as oversight mechanisms. Clearly, then, the precision of international law, whether in the original agreement or in the language the court uses, has many interesting implications worth noting. The findings of Staton and Romero also parallel existing arguments about domestic courts, and like this analysis, call into the question the notion that international law is entirely different from domestic law.

literature to international institutional design. With the rich universe of data waiting to be exploited, scholars can creatively alter the existing domestic law literature to meet the challenges posed by a sub-discipline that has anarchy as one of its hallmark characteristics. It is an exciting opportunity.

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