

CHAPTER 27

MONITORING PROCESSES

TIMM BETZ
BARBARA KOREMENOS

INFORMATION on the behavior of treaty partners is important. Knowing whether one's partner in cooperation is complying with the terms of an agreement is essential in the practical world of policymaking and implementation. Suppose two states know they would both be better off if they both reduced or eliminated their stockpiles of certain weapons of mass destruction, and that they negotiate an agreement to this effect. If one party to the agreement fulfilled its obligations while the other party secretly kept its weapons, the latter would gain a tremendous advantage. Not knowing whether the other party is complying with the agreement terms, each party must be wary about potentially falling behind: a unilateral reduction or elimination of its stockpiles of weapons would leave it vulnerable. Without information about the behavior of the other party, each side has good reasons to defect from the agreement, and anticipating this dynamic both parties may fail to reach an agreement in the first place. This scenario, familiar from the Cold War, has been of crucial importance to policymakers for a long time.

We thank the editors, Kal Raustiala, Kristan Seibel, and participants at the Annual Conference of the International Studies Association in 2012 for comments, and Anthony Ambroselli, Sherol Manavi, Jessica Perszyk, Tim Reid, Peter Wennerholm, and Marisa Wetmore for research assistance. The research for this chapter was funded by a National Science Foundation Grant, "The Continent of International Law: Theoretical Development, Data Collection, and Empirical Analysis" (SES-0801581); a National Science Foundation CAREER Award, "Designing International Agreements: Theoretical Development, Data Collection, and Empirical Analysis" (SES-0094376); and a Rackham Research Grant from the University of Michigan.

Likewise, such information about compliance is and has been central to theoretical accounts of international cooperation. In fact, information collection and distribution is at the heart of rationalist theories of international institutions. “By reducing asymmetries of information,” Robert O. Keohane wrote in 1984, international institutions reduce uncertainty and thereby the risks of cooperation.¹ This view has become orthodox within the literature on international institutions, which finds that a primary function of international institutions is “to provide politically relevant information and so allow states to escape from the prisoners’ dilemma trap.”² Barnett and Finnemore likewise contend that the literature on international institutions has largely been devoted to exploring how, “through their control over information, in particular,” international regimes mediate between state interests and political outcomes.³ Others concur that international institutions facilitate transparency and “provide access to stabilizing or reassuring information about others’ level of compliance.”⁴ The belief that information provision is a central—if not *the* central—function of international institutions is succinctly summarized by the statement that “the rationale for the existence and influence of institutions at the international level is driven almost entirely by informational considerations.”⁵

A justification for this focus on information provision can be found in formal models of cooperation. Absent additional information, states may stop cooperating in response to doubts about the other side’s behavior; or they may resort to unwarranted punishments. As pointed out by James D. Morrow, “applying the proper sanctioning strategy is difficult when compliance is difficult to monitor.”⁶ If players possess private information about compliance, cooperation is fragile and may not even be feasible. Actions by other states might be mistaken for defections, and being afraid of undetected defections by the other side, states might be hesitant to enter cooperative agreements. Monitoring provisions ensure deeper and more stable patterns of cooperation by overcoming the problems arising from asymmetric information. Yet not all international agreements establish monitoring processes, and even when they do, not all provide for monitoring through international organizations. Despite the importance of information to compliance, the international law

¹ Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton: Princeton University Press, 1984).

² Judith Goldstein and Lisa L. Martin, “Legalization, Trade Liberalization, and Domestic Politics: A Cautionary Note,” *International Organization* 54 (2000): 603–32.

³ Michael N. Barnett and Martha Finnemore, “The Politics, Power, and Pathologies of International Organizations,” *International Organization* 53 (1999): 699–732.

⁴ Jose Alvarez, *International Organizations as Law-Makers* (Oxford: Oxford University Press, 1999).

⁵ Jeffrey Frieden and Lisa L. Martin, “International Political Economy: Global and Domestic Interactions,” in *Political Science: The State of the Discipline*, ed. Ira Katznelson and Helen V. Milner (New York: W. W. Norton, 2003).

⁶ James D. Morrow, “Modeling the Forms of International Cooperation: Distribution versus Information,” *International Organization* 48 (1994): 387–423.

and political science literatures have devoted little attention to when and how international agreements provide this information.

In this chapter, we present a survey of formal monitoring provisions in a random sample of international agreements⁷ which covers and is conditional on four issue areas: economics, environment, human rights, and security.⁸ We show that monitoring provisions are indeed an important feature of international agreements: almost six out of ten agreements incorporate some form of explicit monitoring provision. However, information provision is not an important design feature of all international agreements.

When monitoring provisions are included in agreements, they take a variety of forms. As mentioned, more than half of the agreements in the sample contain monitoring provisions. In almost one-third of these, international organizations are formally involved in the monitoring process. This involvement differs starkly across issue areas. For instance, while 60 percent of human rights agreements with monitoring provisions involve international organizations, such as the International Labour Organization, this is the case for only 10 percent of economic agreements. We also find that nongovernmental organizations play virtually no role in the formal monitoring process for most agreements. Only three of the agreements in the sample, or about 1 percent, formally involve nongovernmental organizations in the monitoring process.

Finally, we show that the design of monitoring provisions follows standards of efficiency. When states face uncertainty about the behavior of other participants to an agreement, monitoring provisions are more likely to be included in an agreement. However, uncertainty about behavior is not sufficient for states to delegate these functions to other actors, such as international organizations or agreement bodies. For instance, in an agreement to prevent the spread of plant diseases, each party benefits from knowing whether a plant disease is occurring in each other's territory, what measures a government has taken to address and isolate these instances, and how effective these measures have been in stopping the spread of the disease. Additionally, there is nothing for either party to gain by not reporting truthfully this information. Delegating the collection of information about compliance is inefficient in this case, despite the presence of uncertainty about behavior.

Delegated monitoring is an efficient response to uncertainty about behavior when it is aggravated by incentives to defect on agreements. In the absence of incentives to defect, states are willing to rely on self-reporting exclusively. We

⁷ We use a broad definition of the term international agreement. The sample relies on international agreements registered with the United Nations and includes what corresponds to treaties, Congressional-Executive Agreements, and even some Executive Agreements.

⁸ By "monitoring provisions" we mean mechanisms by which information concerning a state's compliance with its international obligations is gathered and distributed.

therefore provide an explanation for both the existence and the design of monitoring provisions, and we find support for this explanation in the data.⁹

In the next section, we provide a description of formal monitoring provisions in our sample of international agreements from the four different issue areas. We provide some examples of monitoring provision and their subsequent use. We then outline a theory to explain the existence and design of monitoring provisions. We also briefly discuss the role of informal monitoring provisions in international agreements.

A SURVEY OF MONITORING PROVISIONS IN INTERNATIONAL AGREEMENTS

Our survey of monitoring provisions draws on the Continent of International Law (COIL) project, which provides data on international agreements across four issue areas: economics, environment, human rights, and security.¹⁰ The sample of international agreements was chosen from the United Nations Treaty Series (UNTS). The COIL project codes agreement characteristics based on treaty texts, with each agreement having been examined independently by at least two coders, who recorded the relevant agreement characteristics.¹¹ We therefore focus on *formal* monitoring provisions exclusively: monitoring provisions that are explicitly incorporated in the text of an international agreement.

⁹ For complements to our approach, see Kenneth W. Abbott, "Trust but Verify: The Production of Information in Arms Control Treaties and Other International Agreements," *Cornell International Law Journal* 26 (1993): 1–58; Xinyan Dai, "Information Systems in Treaty Regimes," *World Politics* 54 (2002): 405–36; Ronald B. Mitchell, "Sources of Transparency: Information Systems in International Regimes," *International Studies Quarterly* 42 (1998): 109–30; Kal Raustiala, "Police Patrols & Fire Alarms in the NAAEC," *International and Comparative Law Review* 26 (2004): 389–413; David G. Victor, Kal Raustiala, and Eugene B. Skolnikoff (eds.), *The Implementation and Effectiveness of International Environmental Commitments: Theory and Practice* (Cambridge: MIT Press, 1998).

¹⁰ Barbara Koremenos, "The Continent of International Law," *Journal of Conflict Resolution* 57 (2013): 653–81. The project website is <http://www.isr.umich.edu/cps/coil/>.

¹¹ The coders for this project were extensively trained in order to give them high levels of both competency and consistency. At least two coders independently coded each agreement using an online survey instrument. Upon completion, inconsistencies were resolved through a close rereading of the agreement and supervised discussion involving the original coders, a graduate student, and Barbara Koremenos. For more details, see Barbara Koremenos. *The Continent of International Law: Explaining Agreement Design* (Cambridge: Cambridge University Press, 2016).

We distinguish agreements on two dimensions: whether an agreement establishes a formal system of compliance monitoring, and which actors provide information to such a formal monitoring mechanism.

Since the question of which actor(s) to involve in the monitoring system is clearly contingent on the existence of a monitoring system, we first consider whether an international agreement calls for a system of compliance monitoring of any form. As an example, the International Convention for the Prevention of Pollution of the Sea by Oil (UNTS 4714) from 1954 aims to reduce operational oil pollution from ships. To this end, the member states to the Convention have to report to a body created by the agreement whether they installed facilities for collecting oily residue, as required by the Convention. The Convention also establishes a monitoring system with respect to individual ships. This monitoring is conducted by government authorities. The Convention requires ships to carry an oil record book which can be examined by the authorities of contracting parties at any time while the ship is within a port in the state's territory. The Convention is careful to facilitate this form of monitoring by requiring the record book to follow a standardized format, as specified in an appendix to the Convention, and by requiring the oil record book to be completed in English, French, or the official language of the territory in which the ship is registered.

Similar monitoring provisions are quite common among international agreements, as reported in Table 27.1. However, considering the importance of information to theories of international cooperation, it may appear surprising that less than two-thirds of international agreements explicitly contain monitoring provisions. The table suggests that there is not much variation across issue areas, but it masks differences within issue areas. For instance, within the category of economic agreements, about two-thirds of investment agreements call for monitoring, but none of the agreements on monetary matters do. This relative absence of monitoring provisions may partly be driven by the availability of monitoring through informal channels, such as nongovernmental organizations or individuals willing to denounce noncompliance; indeed, we argue in the next section that an important driver of this pattern is the degree to which information is available without monitoring provisions.

Since states have many options for designing monitoring provisions, we distinguish monitoring provisions on the basis of who conducts the monitoring and consider five possibilities: member states themselves, internal agreement bodies, pre-existing international organizations, nongovernmental organizations, or some other entity.¹² As an example of monitoring conducted by member states, in 1963

¹² For an alternative dimension, the distinction between monitoring on a regular basis ("police patrols") and monitoring in response to allegations of noncompliance ("fire alarms"), see Barbara Koremenos and Timm Betz, "Information and International Agreements" (presented at the Annual Conference of the International Studies Association, San Diego, California, April 2012).

Table 27.1 Does the agreement create a system of compliance monitoring?

Issue Area	No	Yes	Total
<i>Economics</i>	44 (43%)	59 (57%)	103
<i>Environment</i>	21 (49%)	22 (51%)	43
<i>Human rights</i>	17 (41%)	24 (59%)	41
<i>Security</i>	12 (26%)	35 (74%)	47
Total	94 (40%)	140 (60%)	234

Austria and Hungary signed an agreement with the goal of preventing the introduction and spread of plant diseases and pests (UNTS 6989). The agreement obliges both states to report annually “on the appearance and spread of such diseases and pests during the year in question, specifying, in so far as possible, the infected or infested areas (towns, communes) and the control measures taken” (Art. 5).

An agreement between Denmark and Sweden on the protection of the Sound Oresund from pollution (UNTS 13823) provides an example of monitoring conducted by internal bodies. The agreement establishes a Commission, composed of three members from each state, that is tasked with reporting on the pollution situation in the Sound and that shall also “actively follow the fulfilment by each country of the requirements connected with this Agreement” (Art. 7), thereby monitoring the behavior of member states.

The International Convention on the Suppression and Punishment of the Crime of Apartheid (UNTS 14861) is an example of an agreement with monitoring involving a pre-existing intergovernmental organization, in this case the United Nations. Article VII obliges parties to the Convention to submit periodic reports, which are transmitted through the Secretary-General of the United Nations to a Special Committee on Apartheid. Article X goes further in terms of the monitoring mandate, and specifies that reports prepared by organs of the United Nations may be used to compile “a list of individuals, organizations, institutions and representatives of States which are alleged to be responsible for the crimes enumerated in ... the Convention.” Thus, data assembled by United Nations organs is employed in the monitoring process.

Table 27.2 If the agreement calls for a system of compliance monitoring, who monitors behavior?

Issue Area	Member States	Internal body	IGO	NGO	Other
<i>Economics</i>	30 (51%)	3 (5%)	6 (10%)	0 (0%)	28 (47%)
<i>Environment</i>	18 (86%)	11 (50%)	8 (36%)	0 (0%)	1 (5%)
<i>Human rights</i>	21 (88%)	13 (54%)	15 (63%)	3 (13%)	0 (0%)
<i>Security</i>	32 (91%)	11 (31%)	10 (29%)	0 (0%)	1 (3%)
Total	101 (72%)	38 (27%)	39 (28%)	3 (2%)	30 (21%)

Note: Each agreement can be monitored by more than one entity, such that the percentages do not necessarily add up to 100%. The percentages indicate the percentage of agreements with respective monitoring entity among agreements in the issue area with monitoring. For instance, among economics agreements with any monitoring provision, 51% involve member states.

A very small number of agreements formally involve nongovernmental organizations in the monitoring process. An example is the American Convention on Human Rights (UNTS 17955), signed in 1969, which in Article 44 states that “Any person or group of persons, or any nongovernmental entity legally recognized in one or more member states of the Organization, may lodge petitions ... containing denunciations or complaints of violation of this Convention.” The Convention therefore grants monitoring rights to nongovernmental organizations (as well as individuals), which is rather rare among international agreements—in the COIL sample, only three other agreements grant similar rights to nongovernmental organizations, and all of these agreements concern human rights. As “other entities,” agreements often list individuals or firms acting independently of their home states, as in bilateral investment treaties, or third states outside the agreement, as in the Geneva Conventions on Prisoners of War. An agreement may also involve more than one entity in the monitoring process, implying a more comprehensive and dense monitoring system.

Table 27.2 allows for a more systematic look at which actors are formally involved in the monitoring procedures among those agreements that call for compliance monitoring. As the table shows, whenever an agreement specifies that monitoring

should take place, member states are most likely to assume the primary role regardless of the issue area, although in the issue area of economics, their involvement is almost always matched by other entities. Member states are involved most heavily in security agreements, where they monitor more than half of all agreements and about 90 percent of agreements with a monitoring provision.

Pre-existing international organizations are formally involved in the monitoring process in about 28 percent of agreements with any monitoring provision, and particularly often in human rights agreements. For instance, many agreements are established within the context of the International Labour Organization whose constitution provides for monitoring through the various bodies established by it. This presence of international organizations looming in the background of international agreements points to the importance of viewing international institutions not in isolation, but as embedded in a larger framework of related institutions.¹³

Nongovernmental organizations are, maybe surprisingly, given little formal role in monitoring across all issue areas. Only three agreements, all of which are related to human rights, explicitly give a role to nongovernmental organizations in the monitoring process: the Convention for the Protection of Human Rights and Fundamental Freedoms, the Geneva Convention Relative to the Treatment of Prisoners of War, and the American Convention on Human Rights. The latter two invite nongovernmental organizations to give reports concerning compliance. The former, the Convention for the Protection of Human Rights and Fundamental Freedoms from 1952 (UNTS 2889), explicitly states that “any person, non-governmental organization, or group of individuals claiming to be victims of a violation” may file petitions with the European Commission of Human Rights, which is established with the Convention. Yet, the Convention is eager to limit this quite far-reaching coverage, noting that individuals and nongovernmental organizations may only file claims provided that the contracting party against which a complaint has been filed recognizes the competence of the Commission in this regard (Art. 25)—in other words, it is possible and legitimate for governments to elude legally sanctioned scrutiny by individuals or nongovernmental organizations.

Finally, Table 27.2 suggests a dense monitoring of human rights agreements and, to a lesser extent, environmental agreements. Among those human rights agreements that are monitored 88 percent involve member states in the monitoring process. In addition, internal bodies and pre-existing intergovernmental organizations each monitor more than half of the human rights agreements that have any monitoring provision, and a few human rights agreements also involve nongovernmental organizations. As a result of this multiplicity of

¹³ Karen J. Alter and Sophie Meunier, “The Politics of International Regime Complexity,” *Perspectives on Politics* 7 (2009): 13–24.

monitoring entities, each monitored human rights agreement involves more than two monitoring entities on average. This may reflect the difficulties in monitoring state behavior in such agreements and in obtaining reliable, accurate information from a single source.

EXPLAINING THE DESIGN OF MONITORING PROVISIONS

The previous section discussed various differences in the existence and design of monitoring provisions. How can we explain these design choices by states? In this section, we offer a theory of whether and how international agreements structure and organize the provision of information about state performance.¹⁴ We take an instrumentalist approach which expands on Rational Design¹⁵ and assume that states design international agreements both effectively and efficiently: states craft agreements such that their design matches the cooperation problems the agreement is trying to solve at the lowest possible cost, and agreements do not contain redundant or obsolete design elements. The implication is that differences among international institutions are not random, but the result of rational, purposeful interactions among states and governed primarily by the underlying cooperation problems.

With respect to the *existence* of monitoring provisions, we note that they facilitate the collection and dissemination of information. As such, they are a response to informational problems in international cooperation, what we call UNCERTAINTY ABOUT BEHAVIOR. If states do not know what other states are doing with respect to their treaty obligations, they would like to obtain some additional information. Monitoring provisions are an institutionalized solution to improve the amount and the quality of available information for all agreement members. However, incorporating monitoring provisions is costly, and in the absence of informational frictions, comprehensive and extensive monitoring provisions would be rather surprising. Being scrutinized by international monitoring bodies is intrusive and may infringe on the conception of sovereignty for many states, especially when the monitoring process involves onsite inspections, as prescribed in many security and disarmament agreements. As an example, the Comprehensive Test Ban Treaty provides

¹⁴ Parts of this section draw on Koremenos and Betz, "Information and International Agreements," and Barbara Koremenos, "The Continent of International Law."

¹⁵ Barbara Koremenos, Charles Lipson, and Duncan Snidal, "The Rational Design of International Institutions," *International Organization* 55 (2001): 761–99.

that “[e]ach State Party has the right to request an on-site inspection ... in the territory or in any other place under the jurisdiction or control of any State Party, or in any area beyond the jurisdiction or control of any State.” Internal bodies with the mandate to monitor behavior can also be costly in terms of financial resources—even the World Trade Organization’s (WTO) Trade Policy Review Mechanism, which is part of an elaborate and well-equipped international organization, seems to reach the limits of the WTO’s resources and capacities.¹⁶ We therefore expect monitoring provisions to be left out of agreements when there is little uncertainty about behavior, but to be present when such uncertainty exists. Returning to the example of the International Convention for the Prevention of Pollution of the Sea by Oil, it would be difficult for member states to monitor the behavior of individual ships, especially of ships not registered in their own territory, without the provisions laid out in the Convention.¹⁷ As a contrasting example, consider an agreement between Germany and Somalia, negotiated in 1983 (UNTS 22962), in which Germany grants Somalia DM 7 million to finance various imports. There is little uncertainty with respect to the behavior of either contracting party in this agreement, and a monitoring provision consequently appears quite redundant. Similarly, of those human rights agreements that have no monitoring provisions, several agreements are reciprocal voting right agreements among European countries that allow individuals with permanent residency status in other member states of the European Union to vote in local elections. Since state behavior is quite easily observable in these instances, explicit monitoring provisions are unnecessary. Thus, our first conjecture is:

C1: Everything else equal, if states are facing high uncertainty about behavior, they are more likely to include monitoring provisions in their agreements.

As we documented in the previous section, states can choose from a wide array of options to design their monitoring provisions. One important question for states is whether to *involve other actors* in the monitoring process: whether monitoring tasks are delegated to other actors or whether member states self-report information. We still maintain that UNCERTAINTY ABOUT BEHAVIOR is the main driving force, and virtually a prerequisite, for the existence of monitoring provisions. Without such

¹⁶ Sam Laird, “The WTO’s Trade Policy Review Mechanism: From Through the Looking Glass,” *World Economy* 22 (1999): 741–64.

¹⁷ It is notable that some of the most severe damage from oil pollution has been caused not by ships or tankers but fixed platforms, such as British Petroleum’s Deepwater Horizon oil rig in the Gulf of Mexico, which exploded in 2010. The Convention, and the monitoring mechanisms it entails, did not apply to the oil spill caused by the Deepwater Horizon: the Deepwater Horizon, as a fixed platform, did not fall under the purview of the Convention, which only applies to ships, and hence also fell outside the purview of the Convention’s monitoring provisions. (Marissa Smith, “The Deepwater Horizon Disaster: An Examination of the Spill’s Impact on the Gap in International Regulation of Oil Pollution from Fixed Platforms,” *Emory International Law Review* 25 (2011): 1477–516.) In response to the Deepwater Horizon spill, the International Maritime Organization acknowledged the shortcomings of its current Conventions and called for discussions to adjust current international law.

uncertainty there is little need to gather additional information through formally prescribed procedures. However, the effect of uncertainty about behavior on the design of monitoring provisions should depend on the strategic incentives of states to defect from a negotiated agreement.

Specifically, self-reporting is not problematic if there are no incentives to defect and therefore no incentives to misreport information. States have little incentive to misreport their own behavior, or that of other actors, in settings where the underlying problem is one of relative harmony. While uncertainty about behavior implies that other states would like to gain additional information on the state's behavior, the state can be expected to reveal this information truthfully. Thus, if there are no incentives to defect, self-reporting is an efficient and trustworthy mechanism to reveal information; at the same time, states give up a minimum of sovereignty, as they are not inviting external actors to monitor their behavior.

The utility of self-reporting is limited by fears that states fail to report behavior accurately.¹⁸ These fears are particularly pressing when states have incentives to defect from an agreement. If behavior is not easily observed and states have incentives to defect, the temptation is large to act one way and claim to have behaved another way, making reporting by member states less useful to resolve uncertainties about behavior. For instance, in many environmental agreements states have good reason to publicly claim they are enforcing standards that are costly to their domestic industries, while in fact turning a blind eye to the enforcement of these standards.

Several cooperation problems generate incentives to defect from an agreement or make states believe other states may have an incentive to defect. An ENFORCEMENT PROBLEM is the most prominent one, but agreements with underlying UNCERTAINTY ABOUT THE STATE OF THE WORLD also create incentives to defect: if exogenous shocks change the situation states are facing, cooperation may no longer be an equilibrium and defection might ensue.¹⁹ Arguably, this problem is underlying current debates in the Eurozone. The global economic crisis triggered a large debt crisis in some states within the Eurozone, such as Greece. In response, several governments discussed a default by the Greek government on its sovereign debt obligations, a renegotiation of existing obligations to international creditors, and ultimately an exit of Greece from the Eurozone. None of these options were seriously and publicly discussed when Greece entered the European Community and, later, the European Monetary Union.

A third relevant cooperation problem is UNCERTAINTY ABOUT PREFERENCES.²⁰ For instance, some states might be serious about their commitment to protect

¹⁸ Abbott, "Trust but Verify."

¹⁹ Barbara Koremenos, "Contracting around International Uncertainty," *American Political Science Review* 99 (2005): 549–65.

²⁰ With uncertainty about preferences, we refer to uncertainty about the underlying preferences of states with respect to the policies or outcomes at stake. These preferences, of course, need not be aligned with what states publicly declare to be in their interest, and the incentive to misrepresent such preferences in certain situations creates such uncertainty.

human rights, while others might be what Simmons termed “strategic ratifiers” who reap benefits from joining an agreement without the intent to follow through on their promises.²¹ A final relevant cooperation problem is a time-inconsistency or COMMITMENT PROBLEM, which means that governments may have incentives to announce a policy currently but to not follow through on it in the future, maybe because the government’s incentive structure changes.²² As an example, bilateral investment treaties are often argued to address this problem with respect to foreign direct investment.²³ Potential host governments may have strong incentives to attract foreign investment and to promise protections to potential investors. Yet, once the investment is in place, such as in the case of an established production facility, the government has incentives to expropriate the investment.

We collect all of these cooperation problems, in which states have to worry that their partners might defect from an agreement, under the label “incentive to defect” and derive our second conjecture as follows.

C2: Everything else equal, high uncertainty about behavior leads states to rely on self-reporting only if there are low incentives to defect. States rely on delegated monitoring only if uncertainty about behavior is aggravated by large incentives to defect.

To assess these two conjectures we estimate a number of probit models. The data for these come from the COIL project. We include dummies for the issue areas in the sample, to control for characteristics specific to each issue area, as well as a variable for the number of participants in each agreement. All cooperation problems are coded as binary variables and have a value of 1 when present to a large extent (e.g., when uncertainty about behavior is high).²⁴ To determine whether a cooperation problem is present, coders took into account not only the agreement text, as published in the UNTS, but also the political, economic, and historical context of agreements. As an example, the Convention Concerning Equality of Treatment for National and Foreign Workers as Regards Workmen’s Compensation for Accidents (UNTS 602) is an example of a human rights agreement for which the underlying cooperation problem is characterized by UNCERTAINTY ABOUT BEHAVIOR as well as an ENFORCEMENT PROBLEM. States can easily discern if other member states have

²¹ Beth A. Simmons, *Mobilizing for Human Rights: International Law and Domestic Politics* (Cambridge: Cambridge University Press, 2009).

²² Judith O. Goldstein et al., “Introduction: Legalization and World Politics,” *International Organization* 54 (1999): 385–99. The difference between commitment problems and enforcement problems is subtle. The former arise if an actor’s current optimal plan for the future will no longer be optimal if the actor has a chance to reoptimize. The latter arise if an actor’s current optimal plan entails a defection. Enforcement problems can be alleviated by the existence of future periods (through punishment provisions), whereas commitment problems exist because of the future.

²³ Andrew M. Kerner, “Why Should I Believe You? The Costs and Consequences of Bilateral Investment Treaties,” *International Studies Quarterly* 53 (2009): 73–100.

²⁴ See the project website for the definitions of cooperation problems and for how coding decisions were made.

Table 27.3 Does the agreement call for a system of compliance monitoring?

	Coefficient	Std. Error	p-value
uncertainty behavior	1.05***	.260	.000
log (number)	.120	.095	.205
economics	.606**	.301	.044
environment	.547**	.272	.044
security	-.106	.300	.724
constant	-.484*	.288	.093
Log Likelihood	-142.12		
Number Obs.	234		

Probit estimates. *** significant at 1%; ** significant at 5%; * significant at 10%.

appropriately incorporated equal treatment into their domestic law, but it is quite difficult to tell if the laws are being enforced. This kind of uncertainty underlies many human rights agreements. The enforcement problem is created by a structure akin to the Prisoners' Dilemma: a state wants its workers to be treated well in other states, but would prefer not to spend resources on foreigners working within its borders.

C1 suggests that the presence of monitoring provisions should be associated with uncertainty about behavior. The estimation results are displayed in Table 27.3. As expected, the coefficient on uncertainty about behavior is positive and statistically significant at the 1 percent level. The effect is also meaningful in substantive terms. Figure 27.1, which shows the average predicted probabilities and 95 percent confidence intervals, illustrates the results: under uncertainty about behavior, the probability that an agreement includes monitoring increases by more than 50 percent. It moves from 51 to 85 percent, an increase of 34 percentage points.²⁵ This supports C1, suggesting that the variation showcased in the descriptive statistics is not randomly cluttered across agreements, but a purposeful response to a distinct cooperation problem: uncertainty about what other actors are doing. When such uncertainty is absent, states do not craft formal monitoring provisions in their agreements.

With respect to the design of monitoring provisions, C2 contends that states are more likely to delegate monitoring functions in response to high uncertainty about behavior only if they face incentives to defect at the same time. Absent incentives to defect, states have little reason to formally surrender sovereignty by inviting external

²⁵ To obtain predicted probabilities, we calculated for each issue area the predicted probabilities and averaged the predicted probabilities across issue areas (with weights according to the relative frequency of each issue area in the sample).

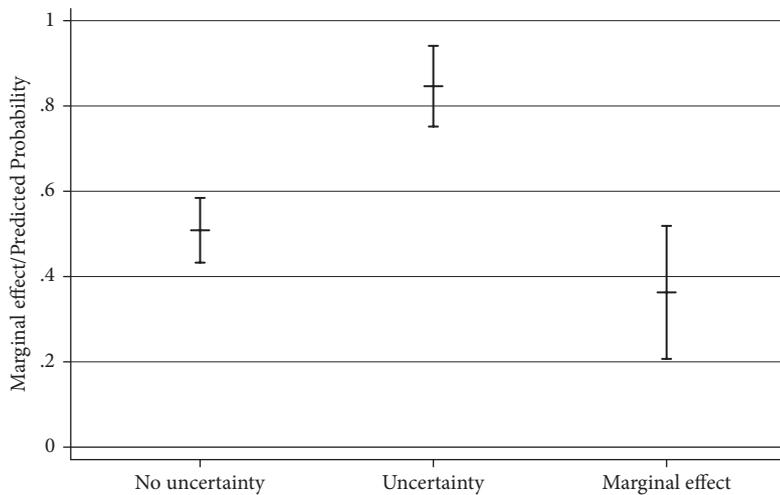


Figure 27.1 Average predicted probabilities, marginal effect, with 95 percent confidence intervals, based on the results in Table 27.3

actors to monitor their behavior. Instead, they can rely on self-reporting. To test this hypothesis, we use two probit models. In the first model, the dependent variable is coded 1 whenever member states self-report information and the agreement fails to stipulate who verifies this information.²⁶ In the second model, the dependent variable is coded 1 whenever states delegated the monitoring process to other actors. Our conditional argument is captured by including two additional variables in each model: the variable incentives to defect and an interaction term between this variable and uncertainty about behavior. Our conjecture predicts that in the first model, uncertainty about behavior has a positive effect only in the absence of incentives to defect. Thus, the coefficient on *UNCERTAINTY ABOUT BEHAVIOR* should be positive, while the coefficient on the interaction term should be negative and such that the overall effect of uncertainty about behavior cancels. In the second model, the effect of uncertainty about behavior should be positive and significant only in the presence of incentives of defect.

The results in Table 27.4 support our theory. In the upper panel, the dependent variable captures self-monitoring. Figure 27.2 visualizes the predicted probabilities and 95 percent confidence intervals. In the absence of incentives to defect, uncertainty about behavior has a strong, statistically significant effect on the probability that an agreement calls for self-monitoring. By contrast, if states have incentives to defect, uncertainty about behavior has virtually no effect (the effect is small and statistically not significant at conventional levels). This result supports the idea articulated

²⁶ The results are similar when the dependent variable is coded 1 whenever only member states, but no other actors or bodies, monitor compliance.

Table 27.4 Self-monitoring and delegated monitoring

	Coefficient	Std. Error	p-value
<i>DV: Self-Monitoring</i>			
uncertainty behavior	1.47***	.463	.001
incentive to defect	-.527**	.261	.043
uncertainty behavior x incentive to defect	-1.30**	.613	.034
log (number)	-.374**	.189	.048
economics	.918**	.447	.040
environment	1.05**	.416	.012
security	.750*	.440	.089
constant	-1.06**	.470	.024
Log Likelihood	-94.528		
Number Obs.	234		
<i>DV: Delegated Monitoring</i>			
uncertainty behavior	-.303	.509	.552
incentive to defect	.809***	.255	.002
uncertainty behavior x incentive to defect	1.08*	.608	.074
log (number)	.310***	.098	.002
economics	.241	.339	.478
environment	.111	.284	.697
security	-.429	.309	.165
constant	-1.48***	.319	.000
Log Likelihood	-127.05		
Number Obs.	234		

Probit estimates. *** significant at 1%; ** significant at 5%; * significant at 10%.

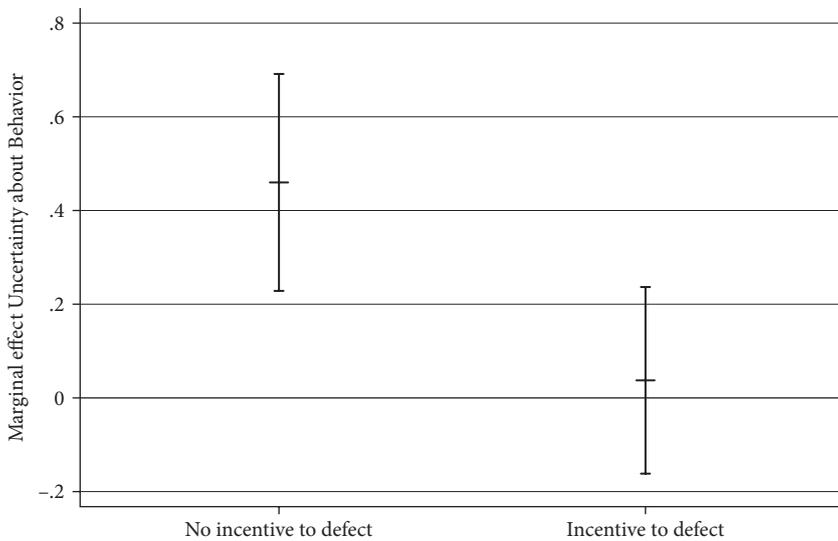


Figure 27.2 Marginal effects, with 95 percent confidence intervals, of uncertainty about behavior on self-monitoring, in the absence and presence of incentives to defect. Based on results in Table 27.4

in C2 that states rely on self-reporting in the presence of uncertainty about behavior only if there are few concerns that other states will defect from the agreement.

The lower panel of Table 27.4 supports the second part of C2: not only are states wary of relying on self-reporting when faced with a combination of uncertainty about behavior and incentives to defect; they also turn to alternative means of information gathering by involving external actors in the monitoring process. In fact, Figure 27.3 is the mirror image of Figure 27.2: uncertainty about behavior alone has a small, statistically insignificant effect on the probability that states delegate monitoring tasks. However, when states face incentives to defect, uncertainty about behavior has a large, positive, and statistically significant effect on the probability that monitoring tasks are delegated. The probability increases from 41 percent to 69 percent, and the effect of uncertainty about behavior is statistically significant with a p -value of .009. Uncertainty about behavior alone is not sufficient for states to delegate monitoring tasks, while when in combination with high incentives to defect are states willing to give up control over the monitoring process.

We now turn to two additional considerations: the role of informal monitoring, and some of the trade-offs in choosing information providers, such as international organizations. With respect to the former, a potential drawback of our survey of monitoring provisions is that we focus on formal monitoring provisions exclusively. Formal monitoring provisions are not the only way to obtain information. In particular, individuals and nongovernmental organizations may engage in informal monitoring in ways that go beyond the formally negotiated treaty text. If

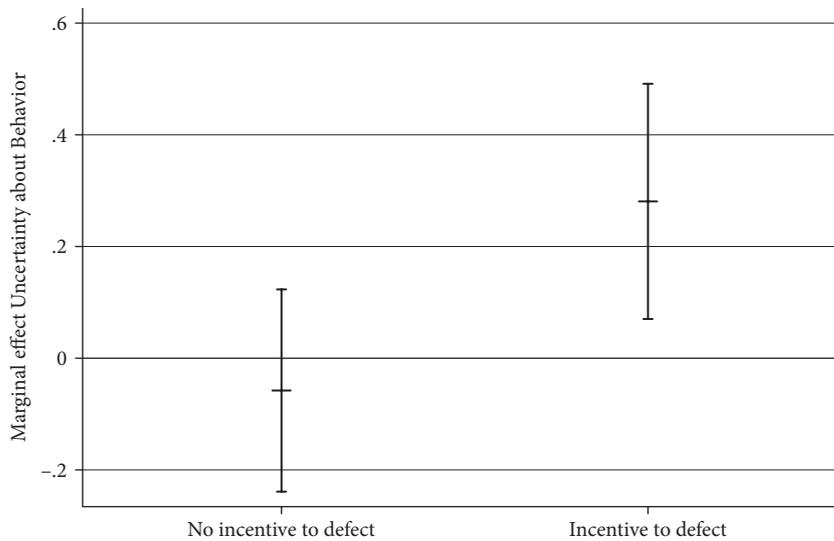


Figure 27.3 Marginal effects, with 95 percent confidence intervals, of uncertainty about behavior on delegated monitoring, in the absence and presence of incentives to defect. Based on results in Table 27.4

so, one may expect that agreements without any formal monitoring provisions are effectively monitored through informal means. However, when uncertainty about behavior is a relevant concern, such informal ways of monitoring can best be seen as complementing existing formal monitoring procedures.²⁷

As an example, the WTO couples a formal monitoring process based on regular inspections, the Trade Policy Review Mechanism, with informal monitoring by individual firms, which can file complaints about the trade policies of foreign governments with their home governments and petition for the initiation of trade disputes.²⁸ The formal component of the monitoring process, the Trade Policy Review Mechanism, subjects all WTO members to regular inspections; for the members with the largest shares of world trade (the European Communities, the United States, Japan, and China), reviews take place every two years. The reviews rely on information from the state that is being reviewed as well as reports compiled by a body at the WTO Secretariat, which also assumes the sole responsibility for the reports. Each report contains chapters examining the member state's practices and policies in substantial detail; for instance, the report for Cameroon, published in 2013, contains an annex

²⁷ See also Victor, Raustiala, and Skolnikoff (eds.), *The Implementation and Effectiveness of International Environmental Commitments*.

²⁸ Chad P. Bown and Bernard M. Hoekman, "WTO Dispute Settlement and the Missing Developing Country Cases: Engaging the Private Sector," *Journal of International Economic Law* 8 (2005): 861–90; Laird, "Trade Policy Review Mechanism"; Trade Policy Review Mechanism, Marrakesh Agreement Establishing the World Trade Organization, Annex 3 (1994).

detailing the specifics of Cameroon's trade policies comprising almost a hundred pages of information. This formal review mechanism is complemented by informal monitoring. Firms which may be harmed by a foreign government's trade policies can petition their home government to file a trade dispute against the foreign government. If the home government decides to file a dispute, the foreign government's trade policies are reviewed. Individual firms have no legal standing in this process, and they cannot formally initiate a dispute against a foreign government. However, they may alert their home government to violations of commitments by foreign governments, and their home government may then decide to pursue the case.²⁹ Thus, while the formal Trade Policy Review Mechanisms "police" member states on a regular basis, individual firms can serve as low-cost monitors, or "fire alarms"³⁰ to direct attention to noncompliance by WTO members. The informal monitoring by firms can therefore best be seen as complementing the regular, but costly inspections.

States similarly may assume monitoring functions without formal delegation in the agreement text. In this regard, the United States plays a particularly important role, as it has the capacity and global interests—especially during the second half of the twentieth century—to provide monitoring informally and on its own. For instance, the United States Congress enacted a number of bills that mandate reports on nuclear proliferation around the world.³¹ Thus, in addition to monitoring of the Nuclear Nonproliferation Treaty by the International Atomic Energy Agency, the United States monitors and investigates as well. The United States Congress enacted similar bills with the goal of monitoring human rights practices abroad.

These examples of informal monitoring notwithstanding, in many circumstances it is difficult to rely on informal monitoring alone. Without a mandate sanctioned by international law, it might be easier for targeted states to question the reliability and accuracy of reports of informal monitors, and informal monitors may face additional obstacles and harassment trying to gather information. The example of the Strategic Arms Reduction Treaty (START) demonstrates the importance of formal monitoring provisions. Once START expired, the United States had to interrupt its inspections immediately. As a former special assistant to President George W. Bush noted, the expiration of the formal agreement literally implied losing "the holy grail to get on-site inspections," even for the most powerful state in the system.³² Thus, while modes of informal monitoring are potentially important in complementing the information from formal monitoring provisions, it would be difficult

²⁹ Timm Betz, "Domestic Politics and the Initiation of International Disputes," presented at the Annual Conference of the American Political Science Association, Washington, DC, August 2014.

³⁰ For the distinction between "fire alarms" and "police patrols" in the context of American politics, see Mathew D. McCubbins and Thomas Schwartz, "Congressional Oversight Overlooked: Police Patrols versus Fire Alarms," *American Journal of Political Science* 28 (1984): 165–79.

³¹ HR 4310 (112th): National Defense Authorization Act for Fiscal Year 2013, with Title XII Subtitle E requiring reports on nuclear weapons in the United States, China, and the Western Pacific region, and Subtitle G mandating reports on military and security development involving North Korea and Syria.

³² "START Expiration Ends U.S. Inspection of Russian Nuclear Bases," *Washington Post*, August 17, 2010.

Table 27.5 Does the agreement call for a system of compliance monitoring?

	Coefficient	Std. Error	p-value
uncertainty behavior	.998***	.272	.000
log (number)	.138	.099	.162
year	.012**	.006	.033
economics	.583*	.320	.069
environment	.522*	.280	.062
security	-.139	.303	.646
constant	-24.4**	11.2	.030
Log Likelihood	-139.90		
Number Obs.	234		

Probit estimates. *** significant at 1%; ** significant at 5%; * significant at 10%.

for informal monitoring to effectively substitute for formal monitoring. This view seems to be consistent with our data: if informal monitoring were to substitute for formal monitoring provisions, then given the increasing availability of entities that could provide low-cost informal monitoring—nongovernmental organizations, pre-existing international organizations, and individuals with access to the required technology for information collection and dissemination—we should see a decrease in formal monitoring provisions over time. Yet, as shown in Table 27.5, our data suggest that time is positively associated with the presence of monitoring provisions: agreements concluded later in time are actually more likely to include formal monitoring provisions.

As we documented in the previous section, even when states rely on delegated monitoring they have a variety of options. In particular, many agreements involve international organizations explicitly, while others rely on private actors and individuals. For example, under the Treaty on the Non-Proliferation of Nuclear Weapons, the International Atomic Energy Agency is explicitly tasked with verifying implementation and compliance, often by inspecting nuclear power facilities within states. These inspections occur on a regular basis. By contrast, the bilateral investment treaty between the United States and El Salvador empowers private actors, in this case firms from one state investing in the territory of the other, to bring disputes about compliance to an arbitral panel. This feature is typical of investment treaties, which generally rely on private actors to uncover noncompliance and judicial processes to address it, and is also found in investment provisions in many trade arrangements, such as the North American Free Trade Agreement.

What explains such differences in the choice of information providers? One potential explanation is the mere availability of established, well-functioning, international organizations to assume such tasks. If this is the case, we might expect international organizations to be most frequently involved in the monitoring process in economic agreements: two of the most prominent international organizations, the General Agreement on Tariffs and Trade and its successor, the WTO, and the International Monetary Fund, are directly involved in economic matters. These institutions are also considered to be among the more well-functioning agreements—so much so that the literature “regards the GATT/WTO as its beau ideal.”³³ However, the data we presented in Table 27.2 tells a different picture. Only 10 percent of economic agreements with a monitoring provision involve international organizations in the process, compared to over 60 percent in the case of human rights agreements. This pattern suggests that it is not the availability of established international organizations as information providers that explains who is tasked with collecting data.

Instead, it appears that the involvement of international organizations follows a logic that is similar to the distinction between “police patrols” and “fire alarms.”³⁴ Police patrols are inspections in regular intervals, whereas fire alarms are triggered in the event of violations. Market participants are relatively reliable information providers in economic agreements, since they often have an interest in detecting and terminating noncompliance. For instance, in trade agreements, exporters are hurt by violations of their rights by foreign governments and consequently have an incentive to alert their own government to these violations and push their governments to address these by filing trade disputes.³⁵ By contrast, in many human rights agreements, such self-reporting is much harder and much less reliable—victims may no longer be able to report violations, may be embarrassed to do so, or may refuse to do so due to fears of reprisals. In such cases, international organizations may be perceived as more neutral information providers than other sovereign states, and they may also acquire and provide the centralized expertise to implement such monitoring efficiently. Environmental agreements may fall somewhere in between on this scale. On the one hand, governments and some private actors may have little interest in publicizing noncompliance, for instance in agreements that require costly measures to reduce the output of pollutants. On the other hand, other actors, such as affected citizens, nongovernmental organizations, or neighboring states, have large incentives to publicize such noncompliance, rendering the involvement of international organizations unnecessary.³⁶

³³ Judith L. Goldstein, Douglas Rivers, and Michael Tomz, “Institutions in International Relations: Understanding the Effects of the GATT and the WTO on World Trade,” *International Organization* 61 (2007): 37–67.

³⁴ Raustiala, “Police Patrols & Fire Alarms in the NAAEC,” 265; Koremenos and Betz, “Information and International Agreements”; Dai, “Information Systems in Treaty Regimes.”

³⁵ Betz, “Domestic Politics and the Initiation of International Disputes.”

³⁶ See Koremenos and Betz, “Information and International Agreements” for an argument that moves beyond differences across issue areas.

In sum, where compliance-relevant information is well hidden or confidential, involving international organizations in the form of “police patrols” should be more effective than privately triggered “fire alarms.” Conversely, fire alarms are effective when private actors can observe violations and can alert other parties to the agreement of a potential violation without fear of oppression. In many cases, police patrols and fire alarms are present at the same time, as in the American Convention on Human Rights. Part II of the Convention establishes a formal system that delegates the collection of information on compliance to member states, the Inter-American Commission on Human Rights, and to nongovernmental organizations. The Commission assumes functions that follow the logic of police patrols. Article 41 of the Convention gives the Commission the ability to prepare reports, to request information from governments, and to take action on petitions it receives. This, notably, includes investigations and onsite evaluations of the human rights situation. At the same time, fire alarm monitoring is provided by many nongovernmental organizations, which can bring complaints by themselves and on behalf of victims and may petition the Commission. Additionally, nongovernmental organizations may—and often do—provide *amici curiae* for determining the compliance of state parties.³⁷

CONCLUSION

The difficulties in obtaining information about state performance have been a leading concern for international relations policymakers and academics alike. In this chapter, we have provided systematic evidence from a conditional random sample of international agreements to assess this claim. We find that informational concerns are an important aspect of international agreements; nonetheless, about 40 percent of international agreements do not contain any provisions with respect to monitoring procedures. Of course, this is not to say that these agreements do not assume important functions, such as setting procedural rules, providing policy advice, or coordinating actions. We showed that the presence of monitoring provisions can be explained by the presence of uncertainty about behavior; when such uncertainty is absent, monitoring provisions are typically not included in agreements. We further discussed how the specific design of monitoring provisions

³⁷ Marisa Wetmore, “The American Convention on Human Rights: A Case Study on the Effectiveness of Monitoring Provisions in International Human Rights Agreements,” undergraduate student paper, University of Michigan (2014).

can be explained: in the coincidence of uncertainty about behavior and incentives to defect, states are willing to cede sovereignty by involving external entities, such as intergovernmental organizations, in the monitoring process. International organizations may be especially important information providers in cases where private actors are either less reliable or less able to reveal noncompliance. This is especially the case for human rights agreements, where more than half of the agreements with monitoring provisions involve international organizations in the monitoring process. International organizations may also assume important roles in verifying and disseminating information. For instance, the WTO, the World Bank, and the International Monetary Fund regularly publish extensive data on a variety of economic issues.

We conclude by noting that the availability of reliable, accurate information is not only important in itself, it is also crucial for the proper functioning of other design elements, such as punishment provisions, dispute resolution mechanisms, and escape clauses. To avoid opportunistic defections enabled by escape clauses, proper information on state behavior may be necessary. Similarly, the enforcement of international agreements may rely on reciprocal punishments. However, reciprocity cannot function properly without information about the behavior of other states. Put differently, monitoring provisions are what enables Axelrod's celebrated tit-for-tat to take place.³⁸ Absent monitoring provisions, even strategies as powerful and simple as tit-for-tat cannot function properly. Such links may even exist across agreements, as in the Bilateral Textile Trade Agreement between the United States and Cambodia, which enforces labor standards established and monitored by the ILO through the Cambodia Better Factories program.³⁹ These relationships between various design elements and patterns of international cooperation are an exciting area for future research and have the potential to further our understanding of both the functioning and design of international institutions.⁴⁰

³⁸ Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984).

³⁹ Drusilla K. Brown, Alan V. Deardorff, and Robert M. Stern, *Labor Standards and Human Rights: Implications for International Trade and Investment*, International Policy Center Working Paper Series No. 119 (Ann Arbor: University of Michigan, 2011).

⁴⁰ Laurence R. Helfer, "Flexibility in International Agreements," in *Interdisciplinary Perspectives on International Law and International Relations: The State of the Art*, ed. Jeffrey L. Dunoff and Mark A. Pollack (New York: Cambridge University Press, 2013).