

Ronald B. Mitchell. "Compliance Theory: Compliance, Effectiveness, and Behavior Change in International Environmental Law" In Oxford Handbook of International Environmental Law. Editors: Jutta Brune, Daniel Bodansky, and Ellen Hey. Oxford University Press, 2007, 893-921.

CHAPTER 39

COMPLIANCE THEORY

COMPLIANCE, EFFECTIVENESS, AND BEHAVIOUR CHANGE IN INTERNATIONAL ENVIRONMENTAL LAW

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1 INTRODUCTION

STATES have spent considerable time and resources negotiating over 1,500 bilateral and over 700 multilateral environmental agreements, and have been signing such agreements at rates averaging about 20 multilaterals and 30 bilaterals per year.¹ Yet, after states negotiate such agreements, a central question becomes: ‘so what?’ Which of these international environmental laws have made a difference and how much of a difference and what type of difference have they made?

2 COMPLIANCE, EFFECTIVENESS, AND THE EFFECTS OF INTERNATIONAL ENVIRONMENTAL LAW

International lawyers and legal scholars often assess the effects of international environmental agreements (IEAs) in terms of the extent to which states comply with their commitments. International relations scholars tend to examine IEA effects through a broader set of questions (→ Chapter 10 ‘International Relations Theory’). They are concerned with any behavioural or environmental changes that can be attributed to an IEA—whether these changes involve compliance or not and regardless of whether

The material in this chapter is based upon work supported by the National Science Foundation under Grant no. 0318374 entitled ‘Analysis of the Effects of Environmental Treaties’ September 2003–August 2006. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation. This chapter has benefited from helpful comments from the editors of this volume.

¹ R.B. Mitchell, ‘International Environmental Agreements: A Survey of Their Features, Formation, and Effects’ (2003) 28 *Ann. Rev. Env’t & Resources* 429 at 438–9.

these changes were desired, unintended, or even perverse. International relations scholars also focus on the reasons why states change their behaviour and what aspects, if any, of an IEA explain those changes.

To see the difference between these approaches, consider four categories of behaviour: treaty-induced compliance, coincidental compliance, good faith non-compliance, and intentional non-compliance. This typology highlights that the compliance/non-compliance distinction does not always correspond well to the IEA influence/non-influence distinction. A strict focus on compliance creates two analytic problems. First, it overstates an agreement's influence by conflating coincidental compliance and treaty-induced compliance. States may comply with IEAs for a variety of reasons unrelated to their influence. For example, states join agreements to prescribe or proscribe actions that they plan to take or to refrain from taking in any event. Economic changes (for example, a recession or a major increase in oil prices) may also produce reductions in production that lead parties to an agreement to reduce their emissions of a regulated pollutant, bringing them into compliance with an agreement for reasons unrelated to agreement influence. Thus, equating compliance with IEA influence is analytically misleading if the compliant behaviours would have occurred even without the IEA.

Second, assuming non-compliance implies an IEA's lack of influence also misleads. States may make real efforts to foster an agreement's goals, but fall short of the agreement's legal standards in what can be called good-faith non-compliance. Thus, an agreement that establishes challenging behavioural rules might lead parties to undertake a range of environmentally beneficial behaviours that fall short of compliance, but nevertheless constitute more behavioural change than would have occurred had the rules been less aggressive. Although IEA comparisons do not yet allow empirically well-supported claims in this regard, it seems plausible that, for example, the moratorium on commercial whaling has led to fewer whales being killed than would have been killed had negotiators agreed to a low, but non-zero, commercial whaling quota.

Thus, evaluating compliance and non-compliance with an IEA is sometimes less useful than considering (1) whether actors have behaved differently than they would have absent the agreement and (2) why they have behaved as they have. Framed in this way, identifying the effects of IEAs raises several subsidiary questions. In what follows, I delineate these issues to highlight how the questions that legal and international relations scholars ask about the influence of IEAs—and the different ways in which they answer them—reflect different analytic goals and often explain what appear to be contradictory assessments of any particular IEA. Rather than prompting unproductive disagreements, this diversity of approaches to, and evaluations of, IEAs offers a deeper and richer understanding of when, how, and why some IEAs perform well and others perform poorly. I review the theoretical terrain and illustrate that nominally 'competing' perspectives have different insights to offer those seeking to improve the practice of international environmental law.

2.1 Identifying an Indicator of IEA Influence

First, we must ask: what should be evaluated? Where should we look for an IEA's effects?² We need an indicator of influence—that is, some phenomenon that we would expect to be influenced by an IEA. Three potential indicators are implied by the public policy trichotomy of outputs, outcomes, and impacts. Outputs can be thought of as the laws, policies, and regulations that states adopt to implement an IEA and transform it from international to national law (→ Chapter 40 'National Implementation'). The advantage of using national laws and regulation as evidence of IEA influence is that their adoption is usually easy to identify (since they are almost always public documents), and is a necessary precondition for behavioural changes in most countries. In addition, an IEA's influence is often clearly evident in legislative or regulatory language that references, or uses language from, the IEA. And, we would be rightly sceptical of attributing drastic reductions in emissions to an IEA in states whose governments have never adopted laws or policies aimed at encouraging such reductions. Yet new laws and policies seem incomplete indicators of IEA influence. Although necessary, they are certainly not sufficient to induce the behavioural changes that might produce environmental improvement.

We can also look for an IEA's influence in outcomes—that is, in changes in how governments or sub-state actors behave. Behavioural change is useful as an indicator since IEAs almost always identify behavioural changes that must occur to achieve agreement goals. Behavioural changes are necessary links in the causal chain from IEAs to environmental improvement—however, once again, we would be sceptical of crediting an IEA with any environmental improvement without evidence of change in some relevant human behaviour. The difficulties of using behaviour as an indicator of IEA influence are that (1) many behaviours are not readily observable, especially when those individuals engaging in them have incentives to keep them secret; (2) behaviours change in response to numerous non-IEA influences; and (3) demonstrating convincingly an IEA's influence on a particular behaviour is usually more difficult than on legislation or regulation. Behaviour is also somewhat unsatisfactory as an indicator of IEA effectiveness, since even significant changes in behaviour are often insufficient to resolve an environmental problem.

We can also look for IEA influence in impacts—that is, in changes in environmental quality. Using environmental improvement as evidence of IEA influence has the advantage of focusing on the ultimate object of concern as well as the motivation, at least avowed, for negotiating IEAs. Equally important, the absence of environmental improvement provides a valuable source of feedback to IEAs: if environmental quality is not improving, it suggests that further—or at least different—actions are necessary. The disadvantages of using environmental quality as an indicator are that so

² A. Underdal, 'One Question, Two Answers,' in E.L. Miles et al., eds., *Environmental Regime Effectiveness: Confronting Theory with Evidence* (Cambridge, MA: MIT Press, 2002), 1.

many factors other than IEAs—and even other than human behaviour—influence environmental quality, and often these factors include natural variation, making the isolation of IEA influence from other factors challenging at best.

Beyond the choice of laws and regulations, behaviour, or environmental quality, one must also choose whether to look at the indicators defined by the negotiators as being important or at other indicators. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) can be evaluated in terms of trade in endangered species, the hunting and harvest of these species, or efforts to protect these species. The International Convention for the Regulation of Whaling (ICRW) can be evaluated in terms of its effect on the whaling industry, the population of whales, or the legal standing of whales. And pollution agreements can be assessed through ambient pollution levels, reduced cancer rates, or reduced resource use.

2.2 Identifying a ‘Comparator’ of IEA Influence

Having chosen an indicator of IEA influence, one also needs a ‘comparator’ or a point of reference against which observed outputs, outcomes, or impacts can be compared. Three types of comparators are possible: the legal standard established in the IEA, the ‘counterfactual’ of what would have happened without the IEA, or some desired goal, either as defined by the IEA or by the analyst.

2.2.1 *Assessing IEA Compliance*

Using the legal standards established in an IEA as the comparator corresponds to assessing compliance. If an IEA establishes clear standards regarding the passage of certain implementing legislation; the banning, limiting, or requiring of certain behaviours; or the meeting of certain environmental quality targets, then we can compare actual legislation, behaviours, or environmental quality to those standards and identify those actors who are or are not in compliance with particular provisions of an agreement. Such assessments provide the foundation to allow various responses to these actors, in ways that may increase the effects of an existing treaty on those actors’ behaviours. Thus, such assessments may contribute to improving the performance of existing agreements. After an agreement comes into force, the relevant questions for many people are ‘which actors complied with, and which violated, their legal obligations’, and ‘what actions can be taken to increase the likelihood that all actors comply more in the future.’ Such assessments are regular elements in meetings of the parties or other institutional aspects of IEAs, but are also frequently undertaken by non-governmental organizations (NGOs). A major advantage of adopting legal standards as the comparator is that, at least in many cases, they can be easily identified simply by reading the IEA. A major disadvantage,

however, is that high and even perfect levels of compliance may tell us little about IEA influence.

2.2.2 *Assessing IEA Goal Achievement*

Using a goal as a comparator—whether the goal is specified by the IEA’s negotiators or some other goal separately identified by the analyst—corresponds to assessing treaty success. Comparing outputs, outcomes, and impacts to specified goals can help identify how existing agreements, even if well-complied with, fall short of their goals and can identify the need for new agreements with new, more aggressive, goals. Such assessments foster the negotiation of new IEAs and the renegotiation of existing IEAs. Those seeking to foster international environmental progress often undertake such assessments to investigate whether problems are being resolved and, if progress has been made, to identify ways in which to ‘move the bar’ so that environmental progress can continue.

2.2.3 *Assessing IEA Effects Using Behavioural Change and Counterfactuals*

Yet, those focused on assessing compliance or goal achievement often fail to carefully assess whether, or how much of, what occurs was caused by the IEA. Both compliance and goal achievement can be simply ‘happy coincidences’ that occurred for reasons completely separate from the IEA’s influence. If we desire to attribute compliance or goal achievement to an IEA—that is, to identify them as effects—our analysis must also incorporate counterfactuals. A counterfactual is an analytically established baseline of ‘what would have happened otherwise.’ A counterfactual approach focuses on whether the legislation or regulations put in place, the behaviours engaged in, or the environmental quality experienced would have been any different had the IEA not existed. Such an assessment helps identify which actions would not have been taken otherwise. Comparing observed outputs, outcomes, and impacts to what would have happened otherwise—rather than to an IEA’s legal standards—allows identification of a broader range of IEA effects than is possible with a narrow focus on compliance. Such an approach can highlight cases where actors are altering their behaviours in response to an IEA, but in ways that may fall short of, exceed, or produce results quite different from those intended by the IEA’s negotiators. Using counterfactuals can inform the renegotiation of existing, or the negotiation of new, agreements by identifying which elements of an IEA or which external factors have led to particular effects, be they better than expected, worse than expected, or simply different than expected. Such assessments can also identify factors that inhibit IEA influence by examining cases in which we would expect significant IEA influence, but have seen little or no influence to date. A major advantage of a counterfactual or ‘effects-oriented’ assessment is that it can be applied in many cases in which the other approaches are difficult or impossible. Thus, an effects-oriented approach allows us

to derive important insights from the many IEAs that lack clearly defined legal standards or clearly identified goals. Of course, the obvious challenge lies in establishing a convincing counterfactual of what laws, behaviours, and environmental qualities would have existed otherwise that would provide the basis for comparison and for inferences about the IEA's influence.

Whether a compliance, goal achievement, or effects orientation is most appropriate depends on the goals of the analyst. Identifying compliers and violators even if we cannot determine whether their actions are due to an IEA or not can be useful in knowing how to induce greater compliance, whether with sanctions, rewards, or some alternative response. Identifying goals that have been achieved and goals that have fallen short provides motivation for further efforts and insight into where to place such effort. Distinguishing states and sub-state actors who have been influenced by an IEA from those who have not, or IEAs that have had significant influence from those that have not, sheds valuable light on how to design IEAs, even when the actions of those being influenced fall far short of either compliance or goal achievement.

2.3 Selecting the Level of Analysis

Assessing an IEA's influence also requires identifying the level at which to assess the IEA. In some instances, we want to determine either the average or aggregate influence of an IEA across a range of countries in order to compare the performance of different agreements. In other instances, we want to assess the influence of a particular IEA on a particular country. In yet other instances, we want to compare the effects of several different rules within a single agreement in order to determine which rule is most effective.

The goals of evaluating an IEA also shape the type of questions and obstacles faced by this evaluation. Consider an effort to assess the influence on a particular developed country of an IEA that requires developed countries (1) to reduce their emissions of a certain pollutant by 20 per cent; (2) to contribute to a pollution reduction fund; (3) to collaborate with other countries in scientific research; and (4) to provide annual reports on emissions. How do we assess the IEA if the country reduces its emissions by 12 per cent, does not contribute to the pollution reduction fund, does extensive collaborative research, and provides detailed annual reports on emissions? We might decide to disaggregate the analysis, looking at each of the four requirements. Yet how do we compare the influence of the IEA on this country with its influence on another country that performed 'better' on two of the requirements but 'worse' on the others? How do we compare this agreement's influence to that of another pollution agreement that required a 5 per cent reduction in a pollutant that was much harder to control or that involved only developing country parties? And

how, if at all, do we compare the effects of any pollution-regulating IEA to a wildlife-preserving IEA? These questions demonstrate that claims made about IEAs that appear plausible and reasonable often require analytic assumptions and judgments that involve choices about aggregation and comparison that are, upon examination, neither obvious nor straightforward.

2.4 IEA Influence and Endogeneity

Assessing IEA influence also requires addressing endogeneity. Endogeneity problems arise when the factors responsible for a problem also influence the policies adopted to resolve it. In the domestic sphere, endogeneity is less of an analytic obstacle since the actors adopting regulations are rarely the targets of regulation. However, most international treaties require collective efforts by actors who are simultaneously regulators and targets of regulation. As a result, the forces that determine environmental behaviours also determine the design of the agreement as well as which states become parties. This creates two additional challenges to accurately assessing IEA influence. First, it reminds us that agreements are often acceded to only when states—and by those states that—are ready to limit environmental harm. Therefore, the most common comparisons used as evidence of IEA influence—that is, how the behaviours of parties differ from their behaviour prior to membership and from the behaviour of non-parties—may not confirm IEA influence. Rather, these comparisons may simply indicate that when states' interests become more environmental, they negotiate and become parties to agreements that require them to take actions that they would have taken anyway, and states whose interests have not changed end up remaining non-parties. Second, the possibility of endogeneity clarifies that comparing the influence of different IEA strategies requires surmounting the major methodological hurdle that those strategies most likely were not 'randomly assigned' to different IEAs. For example, we cannot assess the value of sanctions relative to rewards by simply comparing the average performance of sanction-based IEAs to reward-based IEAs—the types of problems for which states are willing to agree to include sanctions in an agreement differ systematically from those in which they are willing to agree to include rewards.³ And those systematic differences also influence how much or how little states change their behaviour in response to the IEA. These methodological problems can be surmounted—for example, only comparing IEAs that are independently identified as addressing the same problem type—but ignoring them is a recipe for drawing inaccurate conclusions about what makes IEAs work well.

³ R.B. Mitchell and P. Keilbach, 'Reciprocity, Coercion, or Exchange: Symmetry, Asymmetry and Power in Institutional Design' (2001) 55 *Int'l Org.* 891.

3 UNDERSTANDING THE INFLUENCE OF IEAs: HOW AND WHY DO THEY MAKE THE DIFFERENCES THEY MAKE?

Any analysis of IEA influence requires that we ensure that the IEA really is responsible for any changes in outputs, outcomes, or impacts that we observe, and that we can identify how and why those IEAs have had the influence they have had. Most IEAs have not been analyzed in this way. Agreements on stratospheric ozone depletion, dumping of wastes in the North Sea, and dumping of radioactive wastes globally are some that have been judged as being influential. Those addressing trade in endangered species, the world's natural and cultural heritage, tropical timber, and many fisheries regimes have been judged as being less effective.⁴ Yet such judgments depend considerably on whether one is most concerned with compliance, goal achievement, or behavioural change and counterfactuals.

3.1 Two Models of Actor Behaviour

International relations scholars view environmental agreements as having the potential to influence the behaviour of actors—whether individuals, corporations, or states—through two different behavioural logics: a logic of consequences or a logic of appropriateness.⁵ These logics, corresponding relatively closely to 'rational actor' and 'normative' models respectively,⁶ establish rather different understandings of why actors comply with or violate international environmental law (IEL).

The dominant understanding of why actors behave as they do corresponds to a rationalist logic of consequences. Within this logic, actors behave as they do as a result of explicit and instrumental calculations of how the consequences of the behaviours they have available will influence their interests. In this logic, actors come to behavioural decisions with clear and well-established goals and interests. They compare the consequences of engaging in their available alternatives using such information as they have about their alternatives, the potential consequences of those alternatives, and the likely actions of other actors. Within this decision context,

⁴ Miles et al., see note 2 above; E. Brown Weiss and H.K. Jacobson, eds., *Engaging Countries: Strengthening Compliance with International Environmental Accords* (Cambridge, MA: MIT Press, 1998); and M.J. Peterson, 'International Fisheries Management,' in P. Haas et al., eds., *Institutions for the Earth: Sources of Effective International Environmental Protection* (Cambridge, MA: MIT Press, 1993), 249.

⁵ J. March and J. Olsen, 'The Institutional Dynamics of International Political Orders' (1998) 52 *Int'l Org.* 943.

⁶ O.A. Hathaway, 'Do Human Rights Treaties Make a Difference?' (2002) 111 *Yale L.J.* 1935.

they choose behaviours based on ‘what is best for me’. This logic adopts a ‘rational actor model’ of behaviour in which actors are strongly invested in determining what actions are in their interests, and carefully gather information about available alternatives and consequences in order to calculate, quite consciously, the relative costs and benefits of their alternatives to determine which maximizes their utility. Within this logic, IEAs influence decisions by altering the consequences of engaging in certain behaviours—or the ability to engage in those behaviours—in ways that alter the actors’ calculations of what is in their interests. Actors’ goals are assumed to be determined by factors such as a state’s position in the world relative to other states; the material, economic, political, and social resources as well as the constraints it is operating under; the preferences and dispositions of its citizenry; and other factors, all of which are assumed to be impervious to the influence of international law.

An alternative approach, which many lawyers take as a starting point and which recent theoretical work in international relations now recognizes, understands behaviour as a response to an interplay of norms and identity (involving elements of both socialization and internalization) in a process characterized as ‘a logic of appropriateness.’⁷ Rather than calculating how available choices help or harm their interests, actors choose among behaviours based on an assessment of ‘what is the “right” thing to do in this situation for someone like me.’ In this view, IEAs establish or codify norms regarding what is ‘right’ and ‘wrong’ behaviour in particular situations for particular actors. Within this logic, agreements influence decisions by signalling that certain behaviours are ‘appropriate’ and others are ‘inappropriate’ or by signalling that actors’ behavioural choices will lead other actors to consider them as being a particular type of actor. Indeed, most legal proscriptions and prescriptions transform what was, prior to successful negotiations, a relatively undifferentiated spectrum of behaviours into the dichotomous categories of compliance and violation. Even if, as is often the case in IEL, consequences for compliance or violation are not defined in the agreement and do not seem likely in practice, the simple placement of behaviours into those social categories may have significant influence over some actors.

In this view, actors respond to IEAs based on the social identities that they have or seek to have. Rather than asking themselves ‘what is in my interests’, actors ask ‘how do I want to see myself’ and/or ‘how do I want other actors to see me?’ Thus, IEAs help define what a state must do to be considered ‘environmental’ or ‘green’. Equally important, they also define what a state must do to be considered a ‘law abiding’ state. The aspects of international environmental law that ‘do the work’ in this model are not the threats of sanctions for violation or promises of reward for compliance but, rather, the desire of actors to do what is right, what is legally required, or what others expect of them. Indeed, norms may operate through different mechanisms. Strongly socialized actors may accept either the broad legal meta-norm of *pacta sunt servanda*—that is, that legal agreements are to be observed—or the more IEA-specific norm that states should take certain actions to ‘protect the environment.’

⁷ Compare, e.g., March and Olsen, see note 5 above, and Hathaway, see note 6 above.

For those states or sub-state actors that internalize such norms, law takes on a 'taken for granted' character in which behaviours are engaged in with little if any calculation. Such actors identify what behaviours are legal and give little thought to engaging in those that are not. Such actors are driven by an internal commitment to seeing themselves as having particular identities. Consider a set of states or corporations generally committed to either environmental protection or law conformance but that are engaged in behaviours that a new IEA bans. If those actors promptly bring themselves in line with the agreement, especially if doing so is costly or if they do not seriously consider the costs, we can assume that these actors are operating according to a logic of appropriateness. For example, judges and lawyers, especially those in states with a strong rule-of-law tradition, may 'import' IEL into domestic legal decisions and structures with little consideration of the economic impacts of such rulings.⁸

Less strongly socialized actors engage in a calculus about their behavioural choices, but it is a calculus in which the perceptions of others, rather than their material responses, are central. A government may choose to violate an environmental agreement, but it cannot choose to do so and still have other states or even their own domestic audiences perceive them as 'green' and 'law-abiding.' Thus, the desire to be viewed by domestic and international audiences as a good environmental citizen may lead some governments to give little if any thought to violating an agreement. Interestingly, this logic helps explain why states that object to an agreement's rules or, in some cases, that have withdrawn from an agreement, may nonetheless behave in line with some aspects of those rules. Thus, Norway, Japan, and Iceland all opposed the ICRW's moratorium on commercial whaling (→ Chapter 16 'Biological Resources'). However, rather than simply ignore the moratorium, each country has sought to whale in ways that allow it to remain in compliance with the ICRW's provisions: Iceland has withdrawn from the agreement so that it would no longer be bound; Norway has remained a member but has followed the ICRW's 'opt out' procedures so the moratorium would not be binding on its whaling; and Japan has issued scientific permits for the whales that it kills annually. And, all three countries have kept their whaling well below pre-moratorium levels, and have selected levels and hunting techniques based on scientific principles delineated in the agreement. Thus, even cases that demonstrate the inability of IEL to achieve certain goals may demonstrate the power of norms to produce outcomes that we might not expect otherwise.

The intellectual distinctions between these models are valuable in assessing both whether and how IEL influences the behaviour of states. However, the value of the intellectual distinction should not be confused with a notion that IEL always, or even in particular cases, operates only through one or the other logic. Indeed, the distinction's value may lie precisely in its ability to generate competing observable implications from each of the models, which would allow us to identify IEAs that work

⁸ E.g., H. Koh, 'Why Do Nations Obey International Law?' (1997) 106 *Yale L.J.* 2598; and K. Raustiala and A. Slaughter, 'International Law, International Relations and Compliance,' in W. Carlsnaes et al., eds., *Handbook of International Relations* (London: Sage Publications, 2002), 538.

mainly through one logic, those that work mainly through the other, those in which the two logics are mutually reinforcing, and those in which the operation of each logic appears to undercut the other.

3.2 Explaining Compliance and Other Behaviour Changes

This distinction between models of state and sub-state actor behaviour provides a foundation for understanding not only when we should expect states to comply or violate IEAs, but also when we should expect to see evidence of IEA influence in the form of treaty-induced behavioural change. This chapter's initial distinction between treaty-induced and coincidental compliance sheds light on factors that explain, and conditions that foster, behavioural change. Consider first the reasons for coincidental compliance—that is, for why states behave in accord with a particular IEA even when that IEA lacks any causal influence. How impressed should we be by Louis Henkin's oft-quoted claim that 'almost all nations observe almost all principles of international law and almost all of their obligations almost all of the time?'⁹ High compliance levels owe much to the fact that international law reflects negotiation among the actors that will be subject to it. States often negotiate treaties precisely 'for the promotion of their national interests, and to evade legal obligations that might be harmful to them.'¹⁰ To the extent that states negotiate because they see that reaching agreement on some issue is in their interests, we should interpret subsequent behaviour that conforms to this agreement as most likely a reflection of those interests rather than as the influence of international law that codified those interests. The lack of mining in Antarctica has more to do with the availability of cheaper alternatives than with any IEA rules banning such mining, which themselves were possible only because the pressures to mine in Antarctica were not extreme. Economic and political conflicts have often led fisheries agreements to set catch limits that are at or above the levels that the parties can reasonably catch. When agreements require little or no change in behaviour or require behavioural changes the parties planned to make anyway, we should expect high compliance, but we should not interpret this compliance as evidence of agreement influence.

When agreements reflect lowest common denominator negotiations, most states and companies will find themselves already in compliance. Indeed, many states are parties to agreements that regulate behaviours that they are not, or are only minimally, engaged in, as evident in the many non-whaling members of the ICRW and the many countries that are parties to, but not significantly engaged in the behaviours

⁹ L. Henkin, *How Nations Behave: Law and Foreign Policy* (New York: Columbia University Press, 1979), at 47.

¹⁰ H.J. Morgenthau, *Politics among Nations: The Struggle for Power and Peace* (New York: McGraw-Hill, 1993), at 259.

regulated by, the International Tropical Timber Agreement or the Montreal Protocol on Substances That Deplete the Ozone Layer (Montreal Protocol). When leader states convince laggard states to contribute to solving an environmental problem, the 'leader' states are likely to have already established and implemented legislation that exceeds the requirements. A 1985 protocol to the Convention on Long-Range Transboundary Air Pollution (LRTAP Convention) required a reduction of sulphur dioxide emissions by 30 per cent from 1980 levels by 1993—a standard that many parties had already met before the agreement was signed. Even improvements in 'laggard' state behaviour must be examined carefully since they may reflect pressures by leaders on laggards to clean up their pollution that would have occurred even without an agreement—for example, because industries in leader states pressured their governments to 're-level the playing field' by demanding that foreign governments make their competition meet the same environmental standards. In other cases, the reaching of an agreement is itself evidence that the interests of the states involved have changed (otherwise the agreement would have been reached earlier). Often, these changes in interests could be expected to prompt corresponding changes in behaviour even without an agreement. Even agreements that require behaviours that appear costly at the time of negotiation may become either cheaper or even economically advantageous to conform to if favourable, but independent economic or technological conditions prevail. In short, a reasonable starting assumption when we observe compliance is that the behaviour in question reflects the short-term and self-interested behaviour of the parties, defined narrowly and independently of the actions of other states, and that such behaviour would have occurred anyway.

To urge that we start with such an assumption is not, however, to imply that we should end with it. Agreements can influence behaviour in several ways, with agreement influence evident either as treaty-induced compliance or good faith non-compliance. Start by considering how agreements may influence states when they operate within a logic of consequences. The process of international negotiation may lead states that are involved, while remaining self-interested, to re-define their interests in broader and longer-term ways even while not leading them to see their interests as interdependent on the actions of other states. Environmental negotiations require states to consider the environmental impacts of economic activities—impacts that are often sufficiently long term, unclear, ambiguous, or indirect that they would not be considered in a state's decision-making. Agreements that promote scientific research may show that particular behaviours harm the states engaged in them, independent of any impacts they may have on other states. Thus, reductions of acid precipitants under the LRTAP Convention appear to have been due, at least in part, to scientific efforts under that convention that clarified the local (rather than the foreign) effects of acid rain on forests, lakes, and fisheries (→ Chapter 14 'Atmosphere and Outer Space'). By making the environmental costs of otherwise beneficial economic activities clearer and more salient, negotiations lead states to change their policies and behaviours, not because they adopt a logic of appropriateness but

because they have new content in the consequences they consider. Thus, joining an agreement may alter how states calculate costs and benefits by raising the costs of certain behaviours and the benefits of others, both through quite material retaliation as well as through more social retaliatory effects. These dynamics as well as other related ones can lead states to take actions that are clearly in their interests but that they would not have taken otherwise.

IEAs may also provide opportunities for states to eschew independent action in favour of interdependent decision-making. The environmental realm, in particular, may appear to states as a realm in which they can reject the 'relative gains' model common to security and economic affairs, feeling free to improve their state's well-being in absolute terms without concerns that others will take advantage of them. Since environmental degradation is usually a by-product, rather than an intended outcome, of economic decisions, states can more readily assume that other states are not selecting levels of environmental degradation as part of a strategic game among states. States need not make worst case assumptions about other states and can use past experience and other factors to more accurately predict how other states will behave. For states who view the benefits of reducing a pollutant as contingent on how many other states also do so, the ability to reliably predict the reductions by other states may provide enough reassurance to take action that might otherwise seem too risky. And over time, initially reluctant states may gain information and confidence based on the changed behaviours of others and alter their behaviours accordingly.

Experience with an agreement also may bring behaviours more in line with agreement goals and rules due to habit, institutional inertia, or domestic legal implementation and internalization. These processes are consistent with states operating within a logic of consequences, but one that recognizes that states do not constantly recalculate decisions. Governments, corporations, and individuals may engage in a careful rational calculation about behaviours when a new treaty rule is adopted or enters into force, but standard-operating procedures, group think, and bounded rationality may make this choice, once it has been made, hard to revisit. Once agreement-consistent behaviour begins, bureaucratic and corporate supporters of such behaviour gain power and resources, while bureaucratic opponents lose power and resources. Thus, pollution treaties may foster the development of corporations and corresponding corporate interests that supply pollution-reduction technologies while hindering the development of corporations that produce polluting technologies. Material capabilities may atrophy so that violation becomes more difficult or expensive. Moth-balling whaling or fur-sealing ships or retooling factories that produced chlorofluorocarbons may involve processes that are as, or more, costly to undo as to do. In short, international rules allow actors to simplify or reduce the number of decisions they must make in a complex decision environment.

Now, consider how agreements may influence states when they operate within a logic of appropriateness. When an IEA simply codifies existing environmental

norms, of course, any norm-driven behaviour cannot be attributed to the IEA's influence. However, IEAs can strengthen existing norms or generate new ones. In these cases, it may be difficult to analytically separate what aspects or 'how much' behaviour has been prompted by norm-strengthening or norm-generating dynamics and how much by other, more instrumental, paths of influence. This analytic obstacle should not, however, be taken as evidence that norms are not a potentially powerful path of IEA influence. Governments often publicly discuss whether to join or comply with a particular IEA's provisions. They may refuse to join an agreement or, if they join, they may take reservations, request extensions of or opt out of particular provisions, use escape clauses, or withdraw altogether. However, the social context within which these discussions occur changes as the norms strengthen. When an agreement's norms are weak or non-existent—as when an IEA has just been signed or has few parties—government officials can legitimately ask 'are these commitments in our country's interest?' As norms strengthen, however, it becomes increasingly difficult to maintain an interest-based, rather than a norm-based, framing of this question. Thus, discussions in the United States of whether to test nuclear weapons in the atmosphere would have a significantly different, and more normatively driven, tone today than they did in 1960 before the Limited Test Ban Treaty was adopted. And the discussion in France and China to stop atmospheric testing presumably had a more normative tone because of the US and Soviet ban than they would have had without that ban.

Norms may operate at this general level—influencing all states relatively equally—but norms may also operate at the more specific level implied by the focus on identity of the logic of appropriateness. Certain types of states may be more susceptible to the general norm of *pacta sunt servanda*. Thus, we might expect democratic states to comply more often with international agreements because of the normative commitments of a state's government.¹¹ A democratic state will tend to value an identity as a country that is subject to the 'rule of law'—behaving in conformance with international commitments represents one social 'marker' of such an identity. Some states (for example, the Scandinavian states) may, at least for periods of time, want to maintain self-perceptions and international reputations as environmental leaders—perceptions undercut by failures to meet international environmental commitments. When doing so has large domestic costs, these pressures may not be determinative, as evident in Norway's ongoing commitment to commercial whaling; but, in less demanding cases, these pressures may tip the balance in favour of fulfilling IEA commitments. Equally important, international law influences, and is relied on by, judges, bureaucrats, and other actors within states. The aggregate effect of large numbers of such actors responding to international law in particular ways can alter the

¹¹ E. Neumayer, 'Do Democracies Exhibit Stronger International Environmental Commitment?' (2002) 39 J. Peace Res. 139.

internal dynamics of a state's legal system in ways that dispose the state to meet its environmental commitments. In short, state behaviour may reflect both a logic of consequences and a logic of appropriateness.

There is a normative dimension as well when states that are not yet complying ask 'should we comply' or when states are complying and ask 'should we violate'. A country that has behaved in line with an IEA's provisions for years may find it rhetorically difficult to argue that doing so is no longer in its interests. Its previous conformity with the agreement will have strengthened the general norm surrounding the IEA as well as specific normative expectations about that country by its own citizens and other states. Governments have an easier time using instrumental and interest-based arguments to reject a norm initially, but need stronger arguments to reject a norm that they have previously supported and urged others to support.

These normative forces may be even stronger at the corporate level. Businesses promulgate and train personnel in corporate procedures that reflect domestic and international laws, even when violations are likely to go undetected. Corporations cannot flout domestic laws the way states may flout international law. They cannot, at least publicly, discuss whether to comply or violate certain rules—whether international or not—based on whether doing so is in their interests or not. Indeed, certain multinational corporations adopt international rules even when these rules are not, or have not yet been, implemented through their home government's domestic laws since doing so is in line with a norm, and corporate culture, among many corporations that see themselves as abiding by all legal rules. In some cases, corporations will adopt particular behaviours simply because they reflect some IEA provision, without considering whether a violation is likely to be caught and sanctioned. And companies sometimes have little say in the matter. For instance, companies that transport oil and other cargo internationally are quite dependent on companies that build, insure, and classify large tanker and container ships, and these latter companies have a strong norm of requiring all those they do business with to meet international marine pollution standards regardless of where those ships are flagged.¹² Companies often do not ask 'is complying with these laws in our interests' but instead simply ask 'what is the law?'

3.3 Explaining Non-Compliance, Violation, and the Failure to Change Behaviour

When states or sub-state actors fail to adopt behaviours in line with an IEA, the reasons may simply be the converse of those just delineated. Commitments may go unfulfilled because, in line with a logic of consequences, actors calculate costs and

¹² R.B. Mitchell, *Intentional Oil Pollution at Sea: Environmental Policy and Treaty Compliance* (Cambridge, MA: MIT Press, 1994).

benefits and find the former to exceed the latter. Likewise, agreements that have not yet generated strong normative expectations are likely to have less influence than those that have. However, there are three additional factors to consider. The foremost of these is incapacity. States and sub-state actors may fail to fulfil their IEA commitments because they lack the resources to do so. Financial, administrative, or technological incapacities can all inhibit behavioural change. The failure of developing countries to meet their environmental commitments often reflects more pressing concerns, and the lack of adequate resources, more than a conscious decision that compliance is not in their interests. Indeed, the shift to a facilitative rather than an enforcement model of compliance in many environmental agreements—including compliance-financing mechanisms under the Montreal Protocol and the UN Framework Convention on Climate Change—reflects the increasing recognition of the role of incapacities in non-compliance (→ Chapter 43 ‘Compliance Procedures’).

Precisely because many, and perhaps most, IEAs require that governments alter the behaviour of a myriad of sub-national actors, governments that lack relevant administrative capacities may fail to alter the behaviours of those actors. Governments may lack requisite informational or regulatory infrastructures. Thus, efforts in developing countries to induce peasant farmers to restrict tree clearing or wetland draining may fail for lack of the knowledge regarding who is engaged in those activities or the ability to readily communicate new rules to them. Effective regulatory infrastructures may be lacking: tankers registered in Liberia and Panama rarely enter these countries’ ports, making flag state inspections under international marine pollution agreements difficult. Incapacities may sometimes be less country-specific. Negotiators may establish standards that exceed the capacities of current technologies—the hope that regulatory necessity will prompt technological innovation may prove unfounded, leaving companies with no, or only prohibitively expensive, ways to comply. Cultural, social, and historical contexts also may make compliance significantly more difficult to elicit from the companies and citizens of one country than another. The economic trajectories of some states’ economies make them harder to alter than others. Similarly, the policy styles of different governments may all but preclude adoption of policy instruments that would facilitate achievement of particular policy goals within that state’s available resources.

States may also fail to achieve as much behavioural change as intended due to inadvertence. Consider environmental rules establishing aggregate national targets for pollution reduction by specified deadlines. An unexpected economic boom may lead a tax established in good faith at a level deemed sufficient to achieve a 7 per cent reduction in carbon dioxide emissions by a specified date to induce only a 3 per cent reduction by that deadline. The inherent uncertainty regarding ultimate environmental affects that is characteristic of many policy strategies, particularly those giving targeted actors flexibility, means that even developed states’ efforts to alter their citizens’ and companies’ behaviours may fail to achieve their intended results. Programs adopted because they performed well in one country may, for a variety of

reasons, perform less well in others. Innovative policies based on sound theoretical predictions about their environmental effects may, in the messy real world of implementation, face obstacles that reduce or even eliminate any significant influence on behaviour.

Finally, normative and ideological factors need not always support an IEA. When an IEA's dictates fail to reflect the concerns of particular states, those states may well reject the IEA completely. Norms of fair treatment or norms regarding the right to develop may trump norms of environmental protection. Developing countries, most notably Malaysia, vigorously objected to negotiating a forestry agreement at the 1992 United Nations Conference on Environment and Development in Rio unless it included temperate and boreal, as well as tropical, forests.¹³ Likewise, many developing countries joined the Montreal Protocol only after their economic situations were properly reflected in the agreement's terms. Indeed, the ongoing conflict between environmental protection and trade may reflect a normative divide between states' attempts to square their identity as environmental states with their identities as economically 'liberal' states.

4 SYSTEMS AND STRATEGIES FOR INDUCING BEHAVIOURAL CHANGE

The foregoing sections have delineated reasons why states and sub-state actors fulfil, or fail to fulfil, IEA commitments and have discussed the processes by which IEAs may wield influence. They have not, however, explored the various ways IEAs attempt to promote compliance, behavioural change, and environmental improvement nor shed light on which IEAs perform better and how to improve IEA designs so that they achieve these goals. Central to questions of IEA influence are questions about how we explain the variation in performance of IEAs. Numerous case studies conducted in recent years have demonstrated clearly that, for any given IEA, certain countries are more likely to be influenced by the agreement than others.¹⁴ More recently, however, various scholars have sought to look at a larger set of cases to identify the sources of variation across IEAs rather than sources of variation across countries.¹⁵ This work

¹³ E.A. Parson et al., 'A Summary of Major Documents Signed at the Earth Summit and the Global Forum' (1992) 34 *Env't* 12.

¹⁴ E.g., Brown Weiss and Jacobson, see note 4 above; D.G. Victor et al., eds., *The Implementation and Effectiveness of International Environmental Commitments* (Cambridge, MA: MIT Press, 1998); and O.R. Young, ed., *Effectiveness of International Environmental Regimes: Causal Connections and Behavioural Mechanisms* (Cambridge, MA: MIT Press, 1999).

¹⁵ C. Helm and D. Sprinz, 'Measuring the Effectiveness of International Environmental Regimes' (2000) 44 *J. of Conflict Resolution* 630; Miles et al., see note 2 above; R.B. Mitchell, 'A Quantitative Approach to Evaluating International Environmental Regimes' (2002) 2 *Global Env'tl Pol.* 58.

sheds valuable light on the ways in which IEAs can be designed and re-designed to increase their ability to influence the behaviour of member states.

For over a decade, this rich empirical work has often been discussed in terms of whether IEAs, and international law more generally, achieve better results with an 'enforcement' or a 'managerial' approach. Those committed to an enforcement view see states as operating according to a logic of consequences, but a logic of consequences in which sanctions are far more influential than any alternative ways of altering consequences. They contend that inducing significant behavioural change requires international agreements with 'teeth' in the form of potent sanctions.¹⁶ Most international agreements are 'shallow' and require parties only to engage in behaviours they would have engaged in anyway. To the extent that they require 'deep' cooperation involving significant behavioural change, they will lack influence unless the IEA can threaten sanctions that make behavioural changes, however costly, cheaper than not making them. By contrast, those committed to the managerial view contend that states have many mechanisms other than sanctions with which to induce actors to behave in ways consistent with an agreement.¹⁷ They view state behaviour as being dependent on both a logic of consequences and a logic of appropriateness, and see state failures to meet their commitments as generally reflective of incapacity, inadvertence, or normative differences. Sanctions, while sometimes useful and effective, are more often inappropriate or ineffective, and altering behaviour requires procedures that encourage and facilitate compliance rather than punishing non-compliance. This either/or model of management versus enforcement captures important analytic distinctions but, in the process, obscures or ignores a large variety of ways by which IEAs influence state behaviour. In many cases, IEAs have components of both models and, in others, their components do not readily fit into these overly simplified categories.

A basic distinction exists in whether IEAs are regulatory (identifying proscriptions or prescriptions for parties); procedural (establishing regular collective decision-making processes); programmatic (fostering the pooling of parties' resources for joint projects); or generative (fostering development of new social practices).¹⁸ The Montreal Protocol and a variety of other pollution-related agreements establish, in their agreement texts, regulatory limits on certain behaviours. By contrast, many fisheries agreements establish procedural institutions to generate scientific advice for use by the parties to set annual quotas that are often advisory rather than regulatory in nature. The Global Environment Facility operates under a programmatic instrument designed to finance projects and programs in developing countries. Requirements in the Convention on Wetlands of International Importance Especially as

¹⁶ G.W. Downs et al., 'Is the Good News about Compliance Good News about Cooperation?' (1996) 50 *Int'l Org.* 379.

¹⁷ A. Chayes and A. Handler Chayes, *The New Sovereignty: Compliance with International Regulatory Agreements* (Cambridge, MA: Harvard University Press, 1995).

¹⁸ O.R. Young, *Governance in World Affairs* (Ithaca: Cornell University Press, 1999), at 24ff.

Waterfowl Habitat (Ramsar Convention) that countries make ‘wise use’ of their wetlands may best be characterized as generative. These distinctions between four major types of IEAs have implications in terms of which might be expected to have the largest behavioural effects. Yet, at present, we have little systematic empirical information regarding which types of legal norms are most or least effective in altering behaviour. More generally, the social and political process of defining ‘the problem’, and how it should be addressed, condition any agreement’s effects since they determine the costs, obstacles, and resistance to achieving it. Aggressive goals may motivate significant efforts or may be ignored as unachievable; more realistic goals may achieve prompt results but provide little motivation for further effort. The means chosen also surely matters, but even simple questions, such as whether binding agreements induce more change than non-binding resolutions remain open.¹⁹ It is generally difficult in any but regulatory regimes to assess compliance since the standards for doing so are either quite vague or difficult to identify. However, this need not mean that non-regulatory agreements do not significantly influence behaviour.

4.1 Systems of Regulation

Regulatory IEAs have, for analytic purposes, three distinct systems that contribute to their ability to induce behaviour change.²⁰ Effective agreements attempt to match these systems to the problem being addressed. The first system is a primary rule system that includes an IEA’s overarching goals as well as its more specific proscriptions and prescriptions. Primary rule systems can vary, *inter alia*, in whether they involve aggressive or limited goals; are specific or vague; proscribe, prescribe, or permit certain actions; ban or only limit behaviours; target relatively few or many actors; or regulate acts of omission or acts of commission. Deciding which activity to regulate and who will regulate it will dictate which actors with what interests and capacities must change their behaviour, how large and costly those changes will be, and whether other factors will reinforce or undercut compliance incentives. Designing more specific rules clarifies what is expected for those predisposed to comply, and removes the opportunity to claim inadvertence or misinterpretation for those predisposed to violate.²¹

Regulatory regimes also have information systems that generate information regarding the indicators of outputs, outcomes, and impacts that are central to determining (1) how actors have behaved—as a basis for responding to them in ways that enhance agreement performance and (2) what progress has been made towards the

¹⁹ E. Brown Weiss, ed., *International Compliance with Nonbinding Accords* (Washington, DC: American Society of International Law, 1997).

²⁰ R.B. Mitchell, ‘Compliance Theory: An Overview,’ in J. Cameron et al., eds., *Improving Compliance with International Environmental Law* (London: Earthscan, 1996), 3.

²¹ Chayes and Handler Chayes, see note 17 above.

agreement's goals—as a basis for revising the agreement. Regulating highly transparent activities or those that involve transactions between actors can reassure actors regarding the actions of others, and allow them to protect their interests if necessary. How information is generated and processed varies considerably, including the self-reporting that is common to most IEAs, through systems of implementation review and sunshine methods to independent verification systems such as TRAFFIC's database for monitoring trade in endangered species under CITES.²² Systems that supply incentives for, and build the capacity to, report perform better than others that sanction non-reporting or that fail to address practical obstacles to reporting. Many IEAs rely, whether explicitly or implicitly, on NGOs that often have both the incentives and capacity to monitor the agreement-related behaviours of governments and corporations. As environmental threats and concerns increase, intrusive monitoring and verification provisions may be added to some IEAs.

A regulatory regime's third system is its response system, which consists of its strategy for altering the behavioural decisions that actors make. Although direct 'tit-for-tat' reciprocity is thought to be central to effective trade and arms control agreements,²³ it is less appropriate in environmental realms. In the latter, agreement supporters are usually unwilling to degrade their environment to retaliate for such behaviour by others and, even if they did, such actions would have little influence on those unconcerned about the environment. In response, various scholars have stressed enforcement strategies involving the linkage of economic sanctions to careful monitoring and verification; 'management' using diplomacy, norms, and rewards; and a range of other strategies including eco-certification, prior informed consent, and the simple promotion of norms.²⁴

4.2 Strategies of Regulation

In devising regulations, IEAs select from six ideal types of response systems: punitive, remunerative, preclusive, generative, cognitive, or normative. IEAs can rely primarily on one of these approaches or combine aspects of several. The first two strategy types attempt to alter behaviour by altering the consequences of engaging in the behaviours available to the targeted actors. These strategies assume that actor behaviour stems from decision-making based in a logic of consequences and seek to alter that logic either through negative 'punitive' strategies or positive 'remunerative' ones.

²² On systems of implementation review and sunshine methods, see Victor, note 14 above; Brown Weiss and Jacobson, see note 4 above.

²³ R. Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984).

²⁴ J. Wettestad, 'Science, Politics and Institutional Design: Some Initial Notes on the Long-Range Transboundary Air Pollution Regime' (1995) 4 *J. Env't & Dev.* 165; Downs et al., see note 16 above; Chayes and Handler Chayes, see note 17 above; Victor et al., see note 14 above; and Brown Weiss and Jacobson, see note 4 above.

Punitive strategies seek to convince targeted actors that not fulfilling their IEA commitments will be noticed and that other states, NGOs, or their own citizens will impose economic, political, or social penalties such that—even if there is some chance the violation will go unnoticed—fulfilling those commitments becomes the more attractive alternative. As discussed in much of the literature on deterrence, the success of a strategy depends on the threat's credibility and potency—that is, on whether other actors are likely to detect such failures, are likely to respond to such failures when detected, and are likely and able to respond in ways that are costly relative to the pre-existing benefits of violation over compliance. A strategy of remuneration or rewards seeks to convince states that fulfilling their IEA commitments will be to their benefit not only due to the environmental benefits of cooperative action with other states, but also due to additional, direct, and specific benefits provided by other actors. These most often involve financial rewards for compliance, either involving making loans or grants available or offering improved trade relations.

Both these strategies require the coupling of after-the-fact monitoring with contingent responses. They operate by providing signals to targeted actors about how particular behaviours will be responded to after they occur in hopes of influencing choices before they occur. They depend on the IEA's information system being able to identify what actors did, and on its response system being able to mobilize the threatened or promised responses. The informational requirements of punitive strategies tend to be particularly demanding. The threat of sanctions tends to drive information out of the system—targeted actors have incentives to find clandestine ways to continue existing behaviour. By contrast, the promise of rewards can be made contingent on targeted actors performing requisite behaviours, and also providing convincing evidence of having done so.

Both strategies also face problems due to the incentives other actors have not to respond. Sanctions themselves pose a collective action problem among potential sanctioners because they involve diffuse benefits even if the sanctions succeed, but with concentrated costs that depend only on their being imposed. It also may be difficult to 'target' sanctions on an offending state and avoid spill over effects on others. Punitive strategies also frequently face a 'sanctioning problem' because the costs to the 'senders' imposing the sanctions exceed the benefits that would accrue to the sender if the offending state changed its behaviour in the desired manner.²⁵ And, even when a given state's benefits from sanctioning exceed its costs, there may be domestic political objections to sanctioning both from those sectors that will bear the costs of sanctioning, and from others demanding that all states that would benefit from the effective sanctions contribute to them. Remunerative strategies face similar obstacles: states that would benefit if the target is responsive have incentives not to contribute to their provision, and the incentives to actually provide the promised reward decline, and may vanish, once the targeted state has fulfilled its commitments.

²⁵ R. Axelrod and R.O. Keohane, 'Achieving Cooperation under Anarchy: Strategies and Institutions,' in K. Oye, ed., *Cooperation under Anarchy* (Princeton, NJ: Princeton University Press, 1986), 226.

Two strategies that receive less attention are not contingent on knowing how actors behave, relying on altering the opportunities actors have to engage in particular behaviours rather than the consequences of doing so. 'Preclusive' strategies seek to remove opportunities for actors to engage in proscribed behaviours. Unlike punitive strategies, preclusive strategies increase the difficulty or costs of engaging in specific behaviours, rather than the costs of having engaged in those behaviours. Thus, the Montreal Protocol bans parties from exporting specified chemicals to non-parties—to the extent that parties fulfil this commitment they actually prevent non-parties that lack the domestic ability to produce these chemicals from increasing their emissions of the ozone-depleting substances the agreement sought to reduce. Preclusive strategies, such as the eligibility requirements for emissions trading under the Kyoto Protocol or the CITES ban on trade with countries lacking adequate regulatory frameworks, nicely illustrate a form of IEA influence that a focus on compliance would miss—although the behaviour of non-parties cannot be considered non-compliant, such strategies may influence the behaviour of non-parties. Similarly, much of the influence of the International Convention for the Prevention of Pollution from Ships has been attributed to the response of shipbuilders who, although not required to do so by the agreement, incorporated the convention's environmental standards in their shipbuilding practices, effectively precluding any company—whether within a party state or not—from purchasing a ship that was not built to these standards.²⁶

Generative strategies, by contrast, attempt to create new opportunities and enhance capacities for actors to meet their IEA commitments. In this case, the goal is to provide opportunities that are preferred by those who would otherwise choose to ignore or violate their IEA commitments. Unlike remunerative strategies, generative strategies do not require the monitoring and the contingent provision of rewards. Rather than rewarding actors for having engaged in some behaviour, the strategy seeks to make it easier or less costly to engage in that behaviour in the first place. For example, port state control agreements make ship inspections far more effective at detecting violations of marine pollution agreements. These agreements require member maritime authorities to enter daily inspection reports in a central database; such up-to-date inspection information helps each maritime authority target their limited inspection resources on ships that other countries' maritime authorities have either not inspected recently or found in violation of international standards.²⁷ The agreements have created a new resource, a database that maritime authorities find it in their interest to use—there is no need to reward those who use it, it simply needs to be made available.

Neither preclusive nor generative strategies require well-developed information systems. Neither strategy involves contingent responses to the behaviours of targeted

²⁶ Mitchell, see note 12 above.

²⁷ G.C. Kasoulides, *Port State Control and Jurisdiction: Evolution of the Port State Regime* (London: Martinus Nijhoff, 1993).

actors, and so they need not monitor behaviour to distinguish actors based on how they behave. The nature of these strategies allows them to influence actors independent of knowing how the actors behaved with respect to the agreement's proscriptions or prescriptions. Just as banks place locks on their vaults and trash cans in their lobbies to make it harder for people to rob the bank but easier for people not to litter, so too environmental agreements can be structured to make violating their provisions more difficult and fulfilling their provisions easier. That said, effective versions of these strategies are often not available. Preclusive strategies work only if the parties that are supportive of an IEA control resources that other parties need to violate that IEA's provisions. Thus, IEAs that prohibit the export of banned substances to non-parties will have little influence on countries that have indigenous capabilities to produce those substances. Likewise, generative strategies require that alternatives are available that most actors will see as more attractive than the existing behaviours that run counter to IEA goals—a situation that is often not the case.

Finally, IEAs can adopt one of two strategies that involve altering the perceptions of targeted actors, by changing either the information or the value structure of the targeted actors. Cognitive strategies, or 'labels', involve efforts to provide states with information about the choices they face and the consequences of those choices for them and for others, with the expectation that improved information alone will alter their calculation of what choices best promote their interests. This strategy assumes that actors operate in a logic of consequences mode and engage in the behaviours that the IEA seeks to restrict—or refrain from behaviours that the IEA seeks to promote—only because they lack full and accurate knowledge of the consequences of their choices. IEAs regulating pesticides and hazardous waste seek to promote prior informed consent about these substances in the belief that simply ensuring the provision of better information will lead to either fewer or safer imports.

Normative strategies attempt to induce a much deeper change in the actors they target. They seek to alter actors' underlying values and norms and the goals they pursue. Rather than alter the means by which actors pursue pre-existing ends, such strategies seek to change the ends actors pursue or their beliefs about whether particular means are ever appropriate for pursuing their ends. Such strategies seek to induce actors using a logic of consequences to adopt a logic of appropriateness. By altering how an issue is framed and the terms of debate and by engaging actors in dialogue about an issue, such strategies can, over time, convince actors to alter what they view as appropriate goals to pursue and the appropriate means by which to pursue them. The incorporation of concepts such as 'the common heritage of mankind' (→ Chapter 21 'Private and Quasi-Private Standard Setting'), 'sustainable development' (→ Chapter 26 'Sustainable Development'), or the 'precautionary principle' (→ Chapter 25 'Precaution') involve efforts to shift how particular problems are perceived and discussed, and thereby influence how states behave with respect to issues involving resources with open access, economic development, or adoption of technologies, respectively. Embedding these concepts in international law raises the rhetorical standard against which governments are judged when defending—to

others or to their own polities—the extraction of deep sea-bed resources, the exploitation of their own country's natural resources, or the release of genetically modified organisms. Re-framing a debate so that certain actions are deemed illegitimate does not preclude those actions but may create pressures that, at the margin and over time, make actors who would previously have engaged in such actions see doing so as inappropriate.

Cognitive and normative strategies also have virtues and flaws. Both strategies, when successful, can lead to long-term, internalized shifts in actors. Subsequent monitoring or manipulation of incentives is unnecessary to maintain the desired behaviour. If actors become convinced that the consequences of their behaviour harm their own interests, whether other states manipulate these consequences or not, they will alter their behaviour without further pressure. Likewise, if actors become convinced that certain behaviours are simply inappropriate, they are likely to adopt and maintain corresponding behaviours. The fundamental weakness of cognitive strategies lies in the fact that, in many cases, more accurate information will only reinforce an actor's sense that their current behaviour is in their interests, even if not in the interests of others. Likewise, normative strategies depend on long-term efforts to shift the terms of debate and the perceptions of targeted actors. Such strategies may take longer to induce change than the environment can withstand. More important, it is simply quite hard to convince a state to adopt a logic of appropriateness that would lead them to reject a behaviour that the calculations of a logic of consequences suggest has considerable material benefits.

Finally, an important strategic element of international environmental regulation involves deciding whether rules should involve binding or non-binding commitments. This chapter focuses on binding international environmental law. Yet countries have established a variety of forms of non-binding international environmental cooperation, from declarations such as those that came out of the Stockholm, Rio, and Johannesburg conferences to ongoing programs of bilateral aid involving environmental contingencies to joint policy statements made by heads of state. Although some research has been conducted on the effects of non-binding environmental commitments,²⁸ systematic efforts will need to compare the influence of binding and non-binding instruments under comparable conditions before any credible claims can be made about which of these approaches is more effective and under what conditions.

5 OTHER CONSIDERATIONS

Much literature on IEA effects has focused on 'how do regimes influence the environmental behaviours of states?' but is more usefully guided by framing the question

²⁸ Brown Weiss, ed., see note 19 above.

as 'what explains variation in the environmental behaviour of states?' The latter question directs our attention to the many non-legal drivers of environmental behaviours that either hinder or facilitate IEA efforts. Accounting for the influence of economic, technological, political, and other factors on environmental behaviours not only improves the accuracy of claims of IEA influence by discounting alternative explanations, but also clarifies whether an IEA's influence depends on—and is 'large' or 'small' relative to—these other influences. Beyond the influence of IEA design discussed earlier, the numerous other factors that drive environmental degradation can be categorized as involving characteristics of the environmental problem, of the country, and of the international context.²⁹

Characteristics of the environmental problem explain not only the likely effects of an agreement on a given behaviour, but also the variation in these behaviours (over time, across actors, and across problems) that have nothing to do with the agreements. Obviously, problems that pose large, immediate, and visible environmental threats but require relatively cheap changes to avert them benefit from these factors, regardless of the type of agreement reached. Problems that require restraint in current behaviour are likely to do better than those whose resolution demands new behaviours or technologies, since the latter face obstacles due to incapacity as well as incentives. Actors have stronger incentives to continue the behaviours that cause some environmental problems than others—contrast the resistance to regulation of carbon dioxide with that of the regulation of chlorofluorocarbons. Market structures can reinforce or undercut regulatory efforts—the effectiveness of a 1911 fur seal agreement owed much to the fact that a single market for seal skins in London made monitoring easy.³⁰ Marine pollution agreements benefit from the incentives that shipbuilders and ship insurers have to monitor and enforce them while, by contrast, endangered species agreements create shortages and price increases that encourage smuggling.³¹ The influence of an IEA depends on other factors beyond the negotiators' control, including how many states contribute to the problem, the scientific uncertainty about the problem and its resolution, the positions of corporate interests, and the level of concentration of the regulated activity.³² These factors can change, and thereby influence behaviours, independent of any IEA. New science can mobilize action if an activity is shown to involve large and immediate costs for those engaged in it or on others who have clout with those who engage in it. Polluting behaviours often decline if environmentally friendly technologies become economically attractive whereas extractive behaviours (for example, fishing or whaling) tend to be less responsive to technological developments because environmental damage is more inherent to those behaviours.

²⁹ Brown Weiss and Jacobson, see note 4 above.

³⁰ K. Dorsey, *The Dawn of Conservation Diplomacy: U.S.-Canadian Wildlife Protection Treaties in the Progressive Era* (Washington, DC: University of Washington Press, 1998).

³¹ Mitchell, see note 12 above; and H.K. Jacobson and E. Brown Weiss, 'Assessing the Record and Designing Strategies to Engage Countries,' in Brown Weiss and Jacobson, see note 4 above at 521.

³² *Ibid.* at 536, Figure 15.2.

Country characteristics explain why countries vary in their environmental degradation and in their responsiveness to agreements. Economic factors, political forces, policy styles, and demographic and social characteristics all help explain why some countries adjust and others do not. Likewise, IEA influence varies across countries due to stable forces such as history and social and cultural commitments, geographic size and heterogeneity, and resource endowments; factors that vary more over time such as level of development, type of government, the role of NGOs and environmental parties, and attitudes and values; and immediate drivers such as administrative and financial capacity, leadership changes, and the activities of civil society groups.³³ In some cases, IEAs increase their influence by taking such factors into account. Thus, marine pollution agreements had little influence on ships when flag states were the only ones with enforcement rights. They became more effective when they extended enforcement rights to port states that were both more concerned and more able to enforce them.³⁴

Characteristics of the international context also influence environmental practices.³⁵ Large-scale shifts—the end of the Cold War, the start of the war on terrorism, global economic booms or busts, democratization, globalization, the development of new technologies—can alter how, and how many, countries protect the environment. The ebb and flow of global environmental concern helps explain when individuals, corporations, and countries adopt environmental behaviours and design clean technologies or do not. Global concern is promoted by international conferences such as the 1972 UN Conference on the Human Environment, the 1992 UN Conference on Environment and Development, and the 2002 World Summit on Sustainable Development and by major scientific reports on problems such as climate change, biodiversity, or ozone loss.³⁶ NGOs such as the Worldwide Fund for Nature and Greenpeace and intergovernmental organizations such as the UN Environment Programme and the World Bank have led countries to focus on environmental problems and have provided financial and informational resources to address them. These forces overlap and interact with agreement features to promote behavioural change. One potentially important element of IEA success in the future may be the interplay between an IEA and other international institutions, as illustrated both by the efforts to coordinate among the Convention on Biological Diversity, the Ramsar Convention, and CITES and by the possibility of incompatibilities between IEA commitments and World Trade Organization (WTO) law (→ Chapter 37 ‘Regional Economic Integration Organizations’ and Chapter 38 ‘Treaty Bodies’). The dynamics of such interactions among IEAs, and between IEAs and non-environmental institutions, has prompted a lively debate about whether the increasing density of environmental agreements fosters or inhibits the ability of each to

³³ *Ibid.* at 535. ³⁴ Mitchell, see note 12 above.

³⁵ Jacobson and Brown Weiss, see note 31 above at 528.

³⁶ R. B. Mitchell et al., eds., *Global Environmental Assessments: Information and Influence* (Cambridge, MA: MIT Press, 2006).

achieve its objectives, and about whether integrating all environmental agreements into a global environmental organization would facilitate or impede environmental progress.

In examining the influence of IEAs, two final caveats are in order relating to the influence of IEAs relative to that of other international organizations, national governments, and non-state actors. The first caveat is that IEAs have little if any persuasive power of their own. Their ability to influence behaviour depends on supportive governments, corporations, NGOs, and individuals taking the steps necessary to 'breathe life into' IEA provisions by monitoring the behaviour of relevant actors, responding to those behaviours in ways that foster behavioural change, shedding light on the environmental and economic consequences of particular behaviours, and engaging various actors in normative dialogue. Where a strong network of supportive actors exists, IEAs will tend to be influential regardless of their precise terms and even regardless of whether they are binding or not. Where such a network is absent, IEAs will be less likely to be influential. The second caveat is that, in evaluating the influence of IEAs, it is too often forgotten that we should compare them to the many alternative ways we might mitigate environmental degradation and improve environmental quality. We should not only compare performance across IEAs but also compare, on some basis, whether the same amount of social, political, and economic resources would produce more impressive results if applied to the tasks of incorporating environmental considerations into fundamentally non-environmental international law such as WTO law, inducing corporations to adopt environmental standards as is being done under the non-governmental International Organization for Standardization or having NGOs operate alone or with multinational corporations and governments to improve environmental protection through policies such as debt-for-nature swaps or the Johannesburg Summit 'type two' partnerships.

6 CONCLUSION

The scholarship and practice of international environmental law can be improved if those analyzing the effects of IEAs couple two questions traditionally posed by international lawyers—'are states complying with their IEA commitments?' and 'are IEA goals being achieved?'—with a crucial third question regarding the extent to which IEAs are responsible for the policies, behaviours, and environmental quality that we observe after an agreement is signed. Compliance often may not be a meaningful indicator of IEA impact, arising from economic, political, or social circumstances that foster those outcomes rather than from the relevant IEA's influence. Nor is non-compliance always evidence that an IEA lacks influence—IEAs may deserve credit for

significant progress that falls short of compliance for a variety of reasons. The behaviours of non-parties—and of corporations in non-party states—may be influenced by IEAs, even though these behaviours cannot be categorized as being compliant or not. State and sub-state actor behaviours are driven by two logics, one of consequences and one of appropriateness. IEAs influence behaviour through six strategies that either alter the evaluations of costs and benefits among alternatives that characterizes the former or alter the sense of what is right and wrong that characterizes the latter. Using insights from international relations scholarship to more carefully identify whether, when, and how IEAs alter policies and behaviours and improve environmental quality provides opportunities to help make international environmental law more effective in the future than it has been in the past.

RECOMMENDED READING

- E. Brown Weiss and H.K. Jacobson, eds., *Engaging Countries: Strengthening Compliance with International Environmental Accords* (Cambridge, MA: MIT Press, 1998).
- A. Guzman, 'International Law: A Compliance Based Theory' (2002) 90 Cal. L. Rev. 1823.
- C. Helm and D. Sprinz, 'Measuring the Effectiveness of International Environmental Regimes' (2002) 44 J. of Conflict Resolution 630.
- H. Koh, 'Why Do Nations Obey International Law?' (1997) 106 Yale L.J. 2598.
- E.L. Miles et al., eds., *Environmental Regime Effectiveness: Confronting Theory with Evidence* (Cambridge, MA: MIT Press, 2002).
- R.B. Mitchell, 'A Quantitative Approach to Evaluating International Environmental Regimes' (2002) 2 Global Env't'l Pol. 58.
- and T. Bernauer, 'Empirical Research on International Environmental Policy: Designing Qualitative Case Studies' (1998) 7 J. Env't & Dev. 4.
- K. Raustiala and A. Slaughter, 'International Law, International Relations and Compliance,' in W. Carlsnaes et al., eds., *Handbook of International Relations* (London: Sage Publications, 2002), 538.
- D.G. Victor et al., eds., *The Implementation and Effectiveness of International Environmental Commitments* (Cambridge, MA: MIT Press, 1998).
- O.R. Young, ed., *Effectiveness of International Environmental Regimes: Causal Connections and Behavioural Mechanisms* (Cambridge, MA: MIT Press, 1999).