The Kyoto Protocol: Testing Ground for Compliance Theories?

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I. Introduction

Some ten years after the adoption of the United Nations Framework Convention on Climate Change (FCCC),[1] the Kyoto Protocol to the convention has yet to enter into force.[2] While regrettable, this fact should not come as a surprise. After all, in looking to curb global greenhouse gas emissions, the Kyoto Protocol focuses on one of the core challenges of sustainable development. Much like the broader effort of the World Summit on Sustainable Development (WSSD) to chart a course towards global sustainable development, the climate change regime must grapple with the tensions between social, environmental and economic concerns. The regime that emerged from the efforts to flesh out the Kyoto Protocol is a compromise. Even if fully implemented, it will not produce a sufficient reduction of global greenhouse gas emissions to avert or even slow climate change. Rather, entry into force of the protocol would mark but one step, albeit a significant one, in the process of solution building and re-building that has come to characterize international environmental law and policy-making. And yet, the Kyoto Protocol may well become the single most important multilateral environmental agreement (MEA) ever concluded. It certainly promises valuable insights for the efforts to implement the goals of the Johannesburg Summit.

Most obviously, the Kyoto Protocol is a milestone because it signals the beginning of a policy shift towards sustainable energy production – a shift that is likely to have significant impact on technology development and competitiveness assessments. Thus, although a modest beginning, the protocol's emission reduction regime has the potential to generate a dynamic towards progressively greater participation and deeper reductions. Less obvious to all but close observers may be an-

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[1] United Nations Framework Convention on Climate Change, 9 May 1992 (entered into force 21 March 1994), (1992) 31 I.L.M. 849. As of 17 February 2003, 188 states had ratified or otherwise accepted the FCCC. Information available at <http://unfccc.int/resource/convkp.html> (accessed February 18, 2003).

[2] Kyoto Protocol to the FCCC, 11 December 1997, (1998) 37 I.L.M. 22. To enter into force, the protocol must have been ratified by not less than 55 parties to the FCCC, including Annex I parties accounting for at least 55 percent of the 1990 carbon dioxide emissions for these parties (Article 25.1). As of 22 January 2003, 104 states, including Annex parties representing 43.9 % of carbon dioxide emissions in 1990, had ratified or acceded to the Protocol. Information available at <http://unfccc.int/resource/convkp.html> (accessed February 18, 2003).

other set of reasons for the significance of the Kyoto Protocol, rooted in the fact that it has taken negotiators into largely uncharted territory. The regime that has emerged offers international lawyers and policymakers a living laboratory for testing and refining new approaches to global environmental problem solving. The Kyoto Protocol regime is unprecedented in several important respects, speaking directly to the preoccupations of the WSSD: its efforts to grapple with the challenges of "common but differentiated responsibilities", including through its controversial "North first" approach to greenhouse gas emission reductions; its attempt to use market-based mechanisms to facilitate meeting emission reduction goals and to promote compliance; and its effort to involve private entities in the international trading mechanisms envisaged by the regime.

The focus of this article is on a fourth important feature of the protocol regime: the inclusion of the most elaborate compliance regime ever developed under an international environmental agreement. The protocol's compliance regime is also the first such regime that combines facilitative and enforcement-oriented features. It therefore invites an examination both from a legal standpoint and from the standpoint of the theoretical debate on different approaches to promote compliance with international environmental commitments.

The article begins with a sketch of the main theoretical perspectives on compliance with MEAs. Much of the theoretical debate in the context of MEAs has focused on the respective merits of the "managerial" and "enforcement" approaches.[3] Both approaches can be situated within rational institutionalism. Relatively less attention has been paid in the MEA debate to explicitly constructivist frameworks, and to efforts to identify the features that enable legal norms to exert distinctive influence on actors. It will be argued that attention to such approaches would enrich the debate and provide important additional insights into ways to promote compliance with MEAs. The article then surveys the emergence and key features of MEA-specific non-compliance procedures. Next, it provides an overview of those aspects of the Kyoto Protocol that are directly relevant to the design of a compliance regime. Against this backdrop, it outlines the main elements and innovations of the *Procedures and Mechanisms on Compliance under the Kyoto Protocol* that were adopted at Marrakech in November 2001.[4] The article concludes with an assessment of the *Procedures and Mechanisms*, highlighting apparent trends in the design of MEA compliance regimes and their import for the theoretical debate on compliance.

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[3] On the "managerial" approach, *see* Abram Chayes & Antonia Handler Chayes, *The New Sovereignty: Compliance with International Regulatory Agreements* (1995). On the "enforcement" approach, see George W. Downs, "Enforcement and the Evolution of Cooperation", (1998) 19 *Mich. J. Int'l L.* 319.

[4] The *Procedures and Mechanisms on Compliance under the Kyoto Protocol* are contained in an Annex to Decision 24/CP.7 [hereinafter *Procedures and Mechanisms*], adopted as part of the so-called "Marrakech Accords". See *Report of the Conference of the Parties to the United Nations Framework Convention on Climate Change on its Seventh Session*, U.N. FCCC, U.N. Doc. FCCC/CP/2001/13/Add.1-3 (21 January 2002) [hereinafter Marrakech Accords].

II. Theoretical Perspectives on Compliance with MEAs

Until relatively recently, compliance issues were primarily the domain of international relations scholars and their inquiries into the causes of state behaviour. Only in the last ten to fifteen years have international lawyers focused more explicitly on matters of compliance, prompting a lively exchange between the two disciplines.[5] This exchange has been valuable both practically and theoretically. At a practical level, interdisciplinary debates have yielded a broader and more creative array of approaches to promoting compliance with international law. At a theoretical level, the engagement with compliance theories has refocused international lawyers' attention on fundamental questions about the role and influence of law in international society. As Benedict Kingsbury has observed, at bottom, all theories about compliance are also theories about "the nature and operation" of international law.[6]

Several broad sets of approaches can be discerned in the interdisciplinary engagement on compliance issues. Rationalist theories, notably institutionalism and political economy, have long dominated compliance debates. They conceive of states as strategic actors that proceed on the basis of rationally assessed and pursued self-interest.[7] Participation in a regime or compliance with a norm occurs if the net benefits outweigh those of unilateral action. A second set of theories has sought to explain how norms, rather than simply reflect underlying power and interest balances, come to influence states. On the international relations side, constructivist scholars have stressed the role of norms in framing social interaction and shaping actors and their interests.[8] On the legal side, scholars have sought to identify the distinctive features that enable international law to exert influence in the absence of systematic enforcement.[9] Some norm-oriented scholars have emphasized that interactions at the inter-state level must be complemented by processes of norm-internalization into the domestic spheres of states.[10] Only when an international norm

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[5] For overviews on the recent theoretical debates, see Benedict Kingsbury, "The Concept of Compliance as a Function of Competing Conceptions of International Law" (1998) 19 *Michigan Int'l L. J.* 345; Kal Raustiala & Anne-Marie Slaughter, "International Law, International Relations and Compliance" in: Carlsnaes *et al.*, eds., *Handbook of International Relations* (2002), at 541; Jutta Brunnée & Stephen J. Toope, "Persuasion and Enforcement: Explaining Compliance with International Law" (2002) *Finnish Ybook. Int'l L.* (forthcoming).

[6] Kingsbury, *supra* note 5, at 346. See also Steven Ratner, "Does International Law Matter in Preventing Ethnic Conflict" (2000) 32 *N.Y.U. J. Int'l L. & Pol.* 591, at 647 (noting that "data ... on how states can be induced to comply inevitably says something about why they would listen to normative arguments and choose to comply with norms at all").

[7] See Peter J. Katzenstein *et al.*, "International Organization and the Study of World Politics" (1998) 52 *Int'l Org.* 645, at 658.

[8] See Martha Finnemore & Katherine Sikkink, "International Norm Dynamics and Political Change" (1998) 52 *Int'l Org.* 887; Alexander Wendt, "Collective Identity Formation and the International State" (1994) 88 *Am. Pol. Sci. Rev.* 384.

[9] Thomas M. Franck, *The Power of Legitimacy Among Nations* (1990), at 26, 493; Jutta Brunnée & Stephen J. Toope, "International Law and Constructivism: Elements of an Interactional Theory of International Law" (2000) 39 *Col. J. Trans. L.* 19.

is internalized into its domestic order, will a state genuinely "obey" international law rather than simply adjust its behaviour for strategic reasons.[11] The focus on the domestic spheres of states is shared by a further set of theories, self-described "liberal" theories. These theories posit that the domestic politics of a state play a central role and, indeed, that "liberal states" may be more likely to comply with international law.[12] For liberal theorists, the extent to which international norms reach individuals is crucial to their ability to shape state conduct. The more directly individuals have recourse to international norms, through international or domestic processes, the more likely are these norms to be engaged.[13] Given the focus of this article on compliance regimes within MEAs, the following discussion will be limited to compliance theories that are centered on interstate processes.[14]

As already noted, in the context of MEAs, compliance scholarship has been dominated by rational institutionalism and by a debate between proponents of managerial and enforcement-oriented models.[15] While the latter tends towards the realist end of the institutionalist spectrum, the former draws upon norm-focused, process-oriented, explanations of compliance. The MEA debate has paid less attention to explicitly constructivist frameworks,[16] and to the features that enable legal norms to influence states in distinctive ways. As will be argued below, such approaches offer important additional insights and would help strengthen efforts to promote compliance with MEAs.

The managerial approach finds its origins in the work of Abram Chayes and Antonia Handler Chayes. They argue for a "cooperative, problem-solving approach" to promoting compliance with international regulatory agreements such as MEAs.[17] The Chayes challenge the pessimistic realist assumption that states'

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[10] Harold Hongju Koh, "Why Do Nations Obey International Law?", Book Review of *The New Sovereignty: Compliance with International Regulatory Agreements* by A. Chayes & A. Handler Chayes, and of *Fairness in International Law and Institutions* by T.M. Franck (1997) 106 *Yale L. J.* 2599, at 2645 [hereinafter Koh, "Why Do Nations Obey"]; Harold Hongiu Koh, "The 1998 Frankel Lecture: Bringing International Law Home" (1998) 35 *Houston Int'l L.J.* 623.

[11] Koh, "Why Do Nations Obey", ibid., at 2603.

[12] See, e.g., Anne-Marie Burley, "Law among Liberal States: Liberal Internationalism and the Act of State Doctrine" (1992) 92 *Col. L. R.* 1907. And see David G. Victor, "Enforcing International Law: Implications for an Effective Global Warming Regime" (1999) 10 *Duke Envtl. L. & Pol'y F.* 147, at 157-160.

[13] See Anne-Marie Slaughter, "A Liberal Theory of International Law", *Proceedings of the 94th Annual Meeting of the American Society of International Law* 240, at 248 (2000).

[14] For an extensive empirical assessment of national implementation and compliance with key MEAs, see Edith Brown Weiss & Harold K. Jacobsen eds., *Engaging Countries: Strengthening Compliance with International Environmental Accords* (1998).

[15] For an overview on the debate between managerial and enforcement-oriented approaches, see Kyle Danish, "Management v. Enforcement: The New Debate on Promoting Treaty Compliance" (1997) 37 *Va. J. Int'l L.* 789.

[16] But see Kal Raustiala, "Compliance & Effectiveness in International Regulatory Cooperation" (2000) 32 *Case W. Res. J. Int'l L.* 387, at 405-409; George W. Downs *et al.*, "The Transformational Model of International Regime Design: Triumph of Hope or Experience?" (2000) 38 *Col. J. Transnat'l L.* 465, at 468 & 493 (suggesting that constructivist ideas underpin many recent efforts at regime design).

compliance or non-compliance decisions are driven solely by interests and power balances.[18] Instead they assume that states generally enter into commitments with an intention to comply and that non-compliance more often results from norm ambiguities or capacity limitations than from deliberate disregard.[19] Therefore, apart from the fact that "sanctioning authority is rarely granted by treaty, rarely used when granted", the Chayes argue that sanctions are "likely to be ineffective when used".[20] Rather than adopt an "enforcement model",[21] compliance strategies should direct attention to the actual causes of non-compliance and "manage" these through positive means. Managerial prescriptions consist in a blend of transparency (regarding both the regime's norms and procedures and the parties' performance), dispute settlement, and capacity-building.[22] The main engines of managerialism are continuous processes of argument and persuasion, "justificatory discourse" that ultimately "jawbones" states into compliance.[23] The Chayes highlight the role of international law in framing such discourse, noting that states' justifications of their conduct tend to be more compelling when in keeping with a legal rule.[24] The compliance strategy builds upon treaty parties' "general sense of obligation to comply with a legally binding prescription".[25] But the condition of the "new sovereignty" provides the ultimate underpinning for managerial strategies.[26] Given growing interdependence, most states can only realize their sovereignty through participation in various international regimes. The need to remain a "member in good standing of the international system",[27] therefore, is more likely to explain compliance than costs or benefits in the context of an individual regime.[28]

The main rival theory on treaty compliance is advanced by George Downs and colleagues and is grounded in rational choice and game theoretical models.[29] Downs *et al.* do not embrace the "enforcement model" label, they prefer to call themselves political economists. Indeed, they are not necessarily arguing for enforcement in the sense of genuine sanctions. Their concept of "sanction" encompasses a broad range of measures that create costs or remove benefits.[30] Downs *et al.* emphasize that the relative need for incentives and disincentives, and their feasibil-

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17 Chayes & Chayes, *supra* note 3, at 3.

18 Ibid.

19 Ibid., at 10-15.

20 Ibid., at 32-33.

21 The Chayes positioned their "managerial model" as an alternative to what they labeled the "enforcement model" of compliance, thus coining the terms that have framed much of the compliance debate. Ibid., at 3.

22 Ibid., at 22-25.

23 Ibid., at 25-26.

24 Ibid., at 119.

25 Ibid., at 110.

26 Ibid., at 26, 28.

27 Ibid., at 28.

28 Ibid., at 27.

29 George W. Downs, David M. Rocke, and Peter N. Barsoom, "Is the Good News about Compliance Good News about Cooperation?" (1996) 50 *Int'l Org.* 379, at 382-387.

30 Downs, *supra* note 3, at 320-321.

ity, depend upon the type of "game" and the incentive structures that underlie a given regime.[31] In brief, the claim is not that sanctions are always required to ensure cooperation, but only that they are needed where strong incentives exist for non-compliance. This is the case where treaties require states to depart significantly from what they would have done in the absence of the treaty ("deep cooperation").[32] According to Downs *et al.*, the most significant weakness of the managerial approach is that it provides policy advice without sufficient attention to context, and without sufficient evidence.[33] The Chayes do assert that empirical evidence supports managerialism.[34] But Downs *et al.* claim that managerial "policy inferences are dangerously contaminated by selection problems",[35] and build upon many treaty examples that involve merely "shallow" cooperation. Therefore, the patterns of compliance and absence of sanctions that were reported by the Chayes do not justify the conclusion that sanctions are never required or appropriate to ensure cooperation.[36] It is equally possible and, according to Downs *et al.*, even likely that "there is little need for enforcement because there is little deep cooperation".[37]

Aside from the differences in their policy prescriptions for compliance strategies, the managerial and enforcement schools place significantly different emphasis on the role of international law. Downs *et al.*'s approach casts states as rational, egoistic actors and thus as primarily motivated by incentives and disincentives. In this framework, then, international law's impact is at best indirect; it is a tool to create, structure or stabilize incentives and disincentives. By contrast, for the Chayes, law and legal processes play central roles as drivers of the compliance strategy. Much emphasis is placed upon the ways in which international law influences state behaviour by framing the boundaries of persuasion and argument. Drawing on Thomas Franck, the Chayes stress the importance of procedural legitimacy and basic substantive fairness in giving legal norms distinctive power – "compliance pull".[38] And yet, the Chayes too ultimately rely on interest-based explanations for compliance. It is the impact of the "new sovereignty", not international law, that accounts for the success of managerialism: "The need to be a member in good standing of the international system ensures that most compliance problems will yield to the managerial process we describe."[39]

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[31] Ibid., at 322.

[32] Downs *et al.*, *supra* note 29, at 382-338.

[33] Ibid., at 397.

[34] Chayes & Chayes, *supra* note 3, at 32-33, and Chs. 2 (Treaty-Based Military and Economic Sanctions), 3 (Membership Sanction), and 4 (Unilateral Sanctions).

[35] Downs *et al.*, *supra* note 29, at 380.

[36] Ibid., at 391.

[37] Ibid., at 388. See also Victor, *supra* note 12, at 152-157. Of course, this complaint must be seen against the background of the often noted difficulties in demonstrating conclusively that a commitment as such, rather than sanctions or incentives, influenced state behaviour. This problem renders it difficult to counter the "selection problem" argument. See, for example, Beth Simmons, "Compliance with International Agreements" (1998) 1 *Annu. Rev. Polit. Sci.* 75, 89-90.

[38] Chayes & Chayes, *supra* note 3, at 127-134. And see Franck, *supra* note 9.

By falling back on interest-based explanations, the Chayes do not fully exploit the norm focus of their account. They do not explain precisely how the processes they describe come to influence actors, or why legitimacy enhances the compliance pull of legal norms.[40] These gaps can be narrowed by drawing on the insights of constructivist IR theory. Given the Chayes' focus on processes of interaction and persuasion, constructivism provides a natural complement to managerialism.[41]

Like institutionalists, constructivists focus on interaction and discourse among actors. However, constructivist theory rejects the assumption that interests are separate from interaction, and that state action is mainly driven by strategic pursuit of interests. Constructivism focuses on identity formation through social interaction and on the identities of states as generators of interests.[42] Constructivists describe how institutions and norms foster "shared understandings" that can then shape both the identity of the actors and the further evolution of the institutions and norms themselves.[43] This emphasis on the shaping of identities has important implications: ideas, shared understandings, or norms are seen not as direct causes of behavior but as structures that both constrain and enable choices.[44] In this framework, international law can be understood as neither imposed social control nor as completely subordinate to the interests of states. Rather, law is generated and molded through interaction and, in turn, affects behavior by influencing actor identity, thereby reconstructing interests.

While constructivism provides a more norm-friendly account of international relations, it too does not fully illuminate the distinctive impact of legal norms on state compliance. In previous work, this writer has argued that the work of Lon Fuller holds particular promise for understanding the role of law in international society.[45] Fuller's account shares much common ground with constructivism in that he articulates an interactional view of law.[46] Through interaction, relatively stable patterns of expectation must emerge to allow the application of norms in specific contexts. Rules are persuasive and legal systems are perceived as legitimate when they are broadly congruent with the practices and shared understandings in society.[47] At the core of Fuller's explanation of the distinctive influence of legal

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[39] Chayes & Chayes, *supra* note 3, at 28.

[40] Koh, "Why Do Nations Obey", *supra* note 10, at 2640-2641 (commenting on managerialism), and at 2645 (commenting on Franck).

[41] See also Downs *et al.*, *supra* note 16; Raustiala & Slaughter, *supra* note 5, at 544; Raustiala, *supra* note 16, at 407 (all noting managerialism's constructivist leanings).

[42] Alexander Wendt, "Anarchy is What States Make of It: The Social Construction of Power Politics" (1992) 46 *Int'l Org.* 391, at 397-398.

[43] See John G. Ruggie, "What Makes the World Hang Together? Neo-Utilitarianism and the Social Constructivist Challenge" (1998) 52 *Int'l Org.* 855, at 869-870; Wendt, *supra* note 42, at 396-397.

[44] Ruggie, *supra* note 43.

[45] This paragraph is based on Brunnée & Toope, *supra* note 9, at 43-64. See also Jutta Brunnée & Stephen J. Toope, "Interactional International Law" (2001) 3 *International Law FORUM de droit international* 186.

[46] Lon L. Fuller, *The Morality of Law*, rev. ed. (1969).

[47] Gerald J. Postema, "Implicit Law" (1994) 13 *L. & Phil.* 361.

norms is that certain internal characteristics distinguish law from other forms of social ordering. In essence, they demand that rules are compatible with one another, that they impose reasonable requirements, that they are transparent and relatively predictable, and that promulgated rules actually guide the discretion of officials.[48] It is these internal characteristics that produce the "binding" quality of law,[49] rather than external factors such as the validity of sources, hierarchical authority, or the ability to enforce. The greater the extent to which the internal characteristics are present, the greater the legitimacy of the norms or legal system and the greater the power of law to promote adherence.

The implications of an interactional understanding of international law for compliance questions are significant. It helps elucidate the diverse ways in which law can promote compliance without resort to enforcement or to purely interest-based explanations of behavior. An interactional account of international law also shows that the unique ability of law to promote adherence, and therefore compliance, is rooted in both procedural and substantive characteristics. Procedurally, lawmaking must allow for interactional processes that permit the participation of all relevant actors in the mutual construction of identities and norms. Substantively, lawmaking must be sensitive to the internal characteristics that give norms distinctive legal legitimacy. When the underlying norms are generated with attention to these factors, when they are seen as legitimate, they are more likely to support meaningful compliance strategies, including enforcement.

III. The Emergence of Non-Compliance Procedures

Until relatively recently, MEAs contained only minimal compliance-related elements. Typically, these elements consisted in requirements for reporting by parties on their performance,[50] and compilation and publication of information on parties'

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[48] Fuller actually posited eight internal requirements: generality of rules; promulgation; limiting cases of retroactivity; clarity; avoidance of contradiction; not asking the impossible; consistency over time; and congruence of official action with the underlying rules. One of his most controversial theses was that law is recognizable by adhering to these eight requirements of "internal morality", and by subjecting its substantive conclusions to weak tests of "external morality". Because of his emphasis upon "internal morality", one can conclude that Fuller believed that the basis of legal obligation is found within the system of rules itself, and is not dependent upon an external validating principle. Adherence to an internal morality helps to render law more legitimate in the eyes of those to whom rules are directed. In addition, modest substantive commitments to external morality evidence an underlying congruence with commonly shared understandings in society, which also tends to support the legitimacy of rules. Fuller, *supra* note 46, at 33-94, 152-186.

[49] "[T]he internal morality of the law is not something added to, or imposed on, the power of law, but is an essential condition of that power itself", Fuller, *supra* note 46, at 46-91, 155.

[50] See, e.g., Vienna Convention for the Protection of the Ozone Layer (1987) *26 I.L.M.* 1529, Article 5 [hereinafter Vienna Convention]; Convention on Long-Range Transboundary Air Pollution (1979) 18 *I.L.M.* 1442, Article 4 [hereinafter LRTAP Convention]. Note that the LRTAP Convention also envisaged the operation of a Europe-wide emissions monitoring network (Articles 1(2), 5). For an overview, see United Nations Environment Programme (UNEP), *Study on Dispute Avoidance and*

performance through treaty bodies such as Secretariats or Conferences of the Parties.[51] In addition, MEAs generally made provision for the resolution of disputes related to the interpretation or application of the agreement.[52] Such dispute resolution clauses tended to be rudimentary, and required agreement of all parties concerned to the process.[53] To the extent that some of these clauses enabled a single party to trigger a settlement process, outcomes were limited to purely recommendatory awards.[54]

As the complexity of MEAs increased, and as they began to tackle global environmental issues, it became evident that compliance problems did exist.[55] These problems related both to the reporting obligations upon which compliance information rested and to parties' substantive commitments, such as emission reduction requirements. It also emerged that MEAs were not equipped to address compliance problems. Parties chose not to resort to dispute settlement processes.[56] Even if these processes had been used, it is doubtful that they would have been effective. Whether based upon the principles of the law of state responsibility, or upon the principles of treaty law, it is not clear that the standard "rule-breach-sanction" solutions of international law are suited to dealing with the compliance problems posed in the MEA context.[57] Quite apart from the diffuse nature of injuries to parties' common interest in broad compliance with treaty commitments, neither the law of state responsibility nor the law of treaties furnish obviously suitable responses to non-compliance with MEAs. These difficulties are rooted in the fact that MEAs typically involve "coordination problems" – common concerns that require multilateral cooperation and the greatest possible degree of compliance by the widest possible range of parties. The adversarial posture of standard approaches and the punitive flavour of potential non-compliance responses thus seemed ill suited to achieving the desired outcomes. At the same time, the importance of wide compliance to the achievement of collective environmental goals meant that MEAs could not ignore non-compliance but had to develop new strategies for promoting compliance.

Dispute Settlement in International Environmental Law, U.N. Doc. UNEP/GC.20/INF/16 (1999) at 18-25. See also Kamen Sachariev, "Promoting Compliance with International Environmental Legal Standards: Reflections on Monitoring and Reporting Mechanisms" (1991) 2 *Y.B. Int'l Envtl. L.* 31.

[51] See, *e.g.*, Vienna Convention, *supra* note 50, Articles 6(2)(b), 7(1)(b).

[52] See UNEP, *supra* note 50, at 54-56. And see Martti Koskenniemi, "Peaceful Settlement of Environmental Disputes" (1991) 61 *Nordic J. Int'l L.* 73, 82 and at note 62.

[53] See, e.g., LRTAP Convention, *supra* note 50, Article 8.

[54] See, e.g. Vienna Convention, *supra* note 50, Article 11; FCCC, *supra* note 1, Article 14.

[55] Edith Brown Weiss, "Understanding Compliance with International Environmental Agreements: The Baker's Dozen Myths" (1999) 32 *U. Richmond L. R.* 1555, at 1560-1561.

[56] Ibid., at 1582 (1999).

[57] See M.A. Fitzmaurice & C. Redgwell, "Environmental Non-Compliance Procedures and International Law" (2000) XXXI *Netherlands Y.B. Int'l L.* 35, at 37; Günther Handl, "Compliance Control Mechanisms and International Environmental Obligations" (1997) 5 *Tulane J. Int'l & Comp. L.* 29, 34-35.

In response to these concerns, several MEA-specific non-compliance procedures were developed over the past decade or so.[58] A number of others are under consideration.[59]

Several features, perhaps best exemplified in the non-compliance procedure under the Montreal Protocol on Substances that Deplete the Ozone Layer,[60] characterize the new approach to promoting compliance with MEAs. First, it builds upon more rigorous monitoring and reporting, and upon assessment of performance based upon the reported information.[61] Secondly, compliance regimes emphasize non-adversarial and cooperative processes, and seek to facilitate compliance rather than punish non-compliance.[62] The underlying approach is not to place blame for "breaches", but to identify and address the causes of non-compliance.[63]

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[58] The paradigm example remains the non-compliance procedure developed under the Montreal Protocol on Substances that Deplete the Ozone Layer, (1987) 26 I.L.M. 1550; adjusted and amended June 29, 1990, 30 (1990) 30 I.L.M. 539; adjusted and amended Nov. 25, 1992, (1993) 32 I.L.M. 875 [hereinafter Montreal Protocol]. Article 8 of the protocol called upon the parties to develop "procedures and institutional mechanisms for determining non-compliance" and for "treatment" of noncompliant parties. Id., Article 8. While an interim procedure had been adopted at the second Meeting of the Parties in 1990, only MOP-4 adopted the full noncompliance procedure (NCP). See *Report of the Fourth Meeting of the Parties to Montreal Protocol on Substances that Deplete the Ozone Layer*, U.N. Doc. UNEP/OzL.Pro.4/15 (1992), Decision IV/5, annexes IV, V, 32 I.L.M. 874 (1993) [hereinafter *MOP-4 Report*]. Some changes to the NCP, concerning the mandate of its Implementation Committee, were adopted at MOP-10. See *Report of the Tenth Meeting of the Parties to Montreal Protocol on Substances that Deplete the Ozone Layer*, U.N. Doc. UNEP/OzL.Pro.10/9 (1998), Decision X/10, annex II. A compliance procedure was also adopted under Article 7 of the Protocol to the 1979 Convention on Long-Range Transboundary Air Pollution on Further Reduction of Sulphur Emissions on June 14, 1994. See (1994) 33 I.L.M. 1540, 1545 (1994). In 1997, that convention's Executive Body extended the application of the procedure to all protocols to the convention. See *Concerning the Implementation Committee, its Structure and Functions and Procedures for Review of Compliance*, U.N. Economic Commission for Europe, Executive Body, U.N. Doc. ECE/EB.AIR/53 (1998), Decision 1997/2, annex III; see also id. Decision 1997/3, annex IV; *Concerning the Implementation Committee, its Structure and Functions and Procedures for Review of Compliance*, U.N. Economic Commission for Europe, Executive Body, U.N. Doc. ECE/EB.AIR/59 (1998), Decision 1998/6, annex II, in Edith Brown Weiss *et al.*, *International Environmental Law: Basic Instruments and References* (Supp. 1999). The procedure, which is now in operation, resembles the Montreal Protocol NCP. A third non-compliance regime was recently adopted under the Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, (1999) 38 I.L.M. 517 [hereinafter Aarhus Convention]. See Economic Commission for Europe, U.N. Doc. MP.PP/2002/9 (12 August 2002).

[59] Compliance regimes are under consideration under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, (1999) 18 I.L.M. 657; the Espoo Convention on Environmental Impact Assessment in a Transboundary Context, (1991) 30 I.L.M. 1461; the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, (2000) 39 I.L.M. 1027; and the Convention to Combat Desertification, (1994) 33 I.L.M. 1016. For overviews, see Maas M. Goote, "Non-Compliance Procedures" (1998) 9 *Y.B. Int'l Envtl. L.* 146 (1999); 10 *Y.B. Int'l Envtl. L.* 155; and (2000) 11 *Y.B. Int'l Envtl. L.* 124.

[60] Montreal Protocol, *supra* note 58.

[61] See Thilo Marauhn, "Towards a Procedural Law of Compliance Control in International Environmental Relations" (1996) 56 *ZaöRV* 696, 698-699, 707-718.

[62] For example, the Implementation Committee under the Montreal Protocol is to secure "amicable solutions" to compliance problems. See *MOP-4 Report*, *supra* note 58, annex IV, 8.

Thirdly, given this approach, parties can usually bring themselves before a compliance body when they experience, or anticipate, compliance problems.[64] Indeed, while other parties or the treaty secretariat could request the review of a possible non-compliance case,[65] these triggers have not been employed to date. Fourth, the powers of the compliance body, composed of representatives of fellow treaty parties,[66] tend to be limited to making recommendations regarding findings of non-compliance and steps to bring about compliance.[67] Control of all parties over non-compliance proceedings is ensured by reserving the right to adopt decisions on cases of non-compliance to the treaty's plenary body. Finally, potential responses to non-compliance typically encompass a spectrum of measures ranging from advice, assistance, cautions, (peer) pressure, to withdrawal of rights or privileges under the MEA.[68] This toolkit has been described as one of "carrots and sticks",[69] although the sticks have tended to consist in withholding potential carrots, such as access to funding,[70] rather than in actual penalties.

IV. The Kyoto Protocol

The evolution of the climate change regime provides a vivid illustration of the rolling treaty-making process that has come to characterize the negotiation of MEAs. The 1992 FCCC furnished the initial framework for climate change law-making – an institutional and procedural setting, a basic commitment to addressing

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[63] See UNEP, *supra* note 50, at 4 (Conclusions 8(a) & (c) of the *Conclusions by the International Group of Experts on Dispute Avoidance and Dispute Settlement in International Environmental Law of the United Nations Environment Programme (UNEP)*).

[64] See, e.g., *MOP-4 Report*, *supra* note 58, annex IV, 4. See also Marauhn, *supra* note 61, at 701.

[65] See, e.g., *MOP-4 Report*, *supra* note 58, annex IV, 1, 3. But note that under the Aarhus Convention, *supra* note 58, members of the public can trigger the process. See Economic Commission for Europe, *supra* note 58, at 18-24.

[66] See, e.g., *MOP-4 Report*, *supra* note 58, annex IV, 5. Under the Aarhus Convention, *supra* note 58, members of the Compliance Committee are nominated by parties and non-governmental organizations. See Economic Commission for Europe, *supra* note 58, at 4.

[67] See, e.g., *MOP-4 Report*, *supra* note 58, annex IV, 9.

[68] For the NCP under the Montreal Protocol, possible responses to noncompliance are set out on an "indicative list of measures" and include appropriate assistance, cautions and suspension of rights and privileges under the protocol. See *MOP-4 Report*, *supra* note 58, annex IV. See also Marauhn, *supra* note 61, at 718-720.

[69] See Jacob Werksman, "Compliance and the Kyoto Protocol: Building a Backbone into a 'Flexible' Regime" (1999) 9 *Y.B. Int'l Envtl. L.* 48, at 57 (1999).

[70] For example, under the Montreal Protocol, a developing country party will lose eligibility for funding from the protocol's Multilateral Fund if it does not meet its obligations under the protocol. With respect to countries with economies in transition that receive funding from the Global Environment Facility (GEF), the GEF has made funding contingent upon their compliance with the Montreal Protocol (and its 1990 amendment). See O. Yashida, "Soft Enforcement of Treaties: The Montreal Protocol's Noncompliance Procedure and the Functions of International Environmental Institutions" (1999) 10 *Col. J. Int'l Envtl. L. & Pol'y* 95, 130. And see Peter Sand, "The Potential Impact of the Global Environment Facility of the World Bank, UNDP and UNEP", in: Rüdiger Wolfrum, ed., *Enforcing Environmental Standards: Economic Measures as Viable Means* 479, 495-496 (1996).

climate change, and principles to shape the approach to fleshing out that commitment.[71] In December 1997, the third Conference of the Parties to the FCCC (COP-3) adopted the Kyoto Protocol.[72] It set out specific emission reduction commitments for industrialized and industrializing countries and outlined various mechanisms for implementation, monitoring of performance and compliance control. However, the Kyoto Protocol too was very much a framework.[73] Several of the protocol's key provisions contained only the basic outlines of the regimes that the parties envisaged.[74] The protocol left it to subsequent meetings of the parties to approve the rules, guidelines, and procedures required to transform broad concepts into regimes that are sufficiently detailed to allow implementation and that enable states to decide whether or not to ratify the protocol.

When these details and their implications for protocol parties began to emerge more clearly, the resilience of the climate change regime was put to the test. Under the Buenos Aires Plan of Action, adopted at COP-4 in 1998, parties were to develop relevant draft decisions in time for COP-6 in November 2000.[75] However, rather than produce a final package that could enable entry into force of the protocol, COP-6 saw a break-down of negotiations. The regime appeared to be in dire straits. In March 2001, the United States decided to reject the Kyoto Protocol altogether.[76] Commentators highlighted the rifts among parties regarding various features of the protocol regime;[77] some observers even predicted the collapse of the Kyoto Protocol.[78] One might have expected the withdrawal of the largest contributor to global greenhouse gas emissions to have a sobering effect on the negotiations. However, it appears as if perceived US unilateralism actually spurred on other parties' efforts to salvage the Kyoto Protocol.[79] At the resumed sixth meeting

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[71] FCCC, *supra* note 1. For a review of the FCCC and its negotiating history, see Daniel Bodansky, "The United Nations Framework Convention on Climate Change: A Commentary" (1993) 18 *Yale J. Int'l L.* 451.

[72] Kyoto Protocol, *supra* note 2.

[73] See Hermann Ott, "The Kyoto Protocol: Unfinished Business" (1998) 40 *Environment* 3; Henry D. Jacoby *et al.*, "Kyoto's Unfinished Business" (1998) 77 *Foreign-Affairs* 54.

[74] See Articles 3.4, 5.1, 6.2, 7.4, 8.4, 12.7, 16, 17, and 18 of the Kyoto Protocol, *supra* note 2.

[75] See *Report of the Conference of the Parties to the United Nations Framework Convention on Climate Change on its Fourth Session*, U.N. FCCC, U.N. Doc. FCCC/CP/1998/16/Add.1 (1998), Decision 8/CP.4.

[76] On the United States' decision to abandon the Kyoto Protocol, see Press Briefing by Press Secretary Ari Fleischer, March 28, 2001, available at <http://www.whitehouse.gov/news/briefings/20010328.html> (accessed March 11, 2003). For an assessment of the prospects of US re-engagement in the Kyoto Protocol, see Timothy Wirth, "Hot Air over Kyoto: The United States and the Politics of Global Warming" (Winter 2002) *Harvard International Review* 72.

[77] See, *e.g.*, Michael Grubb & Farhana Yamin, "Climatic Collapse at The Hague: what Happened, why, and where do we go from here?" (2001) 77 *Int'l Affairs* 261; Herman E. Ott, "Climate Change: an Important Foreign Policy Issue" (2001) 77 *Int'l Affairs* 277.

[78] See, e.g., David G. Victor, *The Collapse of The Kyoto Protocol and the Struggle to Slow Global Warming*, at xi (2001) (considering the core of the "Kyoto architecture" to be "flawed"); John K. Setear, "Learning to Live with Losing: Climate Change and International Environmental Law in the New Millenium" (2001) 20 *Virginia Envtl. L. J.* 139 (predicting a "debacle of unparalleled proportions in international environmental law").

of the Conference of the Parties (COP-6 *bis*) in July 2001, parties were able to bridge many of the gaps that had separated their positions and to arrive at a compromise package, dubbed the Bonn Agreement.[80] The terms of this political agreement were then elaborated, cast into legal language and, at COP-7 in November 2001, adopted in the Marrakech Accords.[81] The Marrakesh Accords contain a series of draft decisions fleshing out the provisions of the Kyoto Protocol, which the FCCC COP recommends the Kyoto Protocol parties adopt at their first meeting upon entry into force of the protocol.

V. Greenhouse Gas Emissions Reduction Commitments

The "ultimate objective" of the FCCC is to achieve "stabilization of greenhouse gas concentrations at a level that would prevent dangerous anthropogenic interference with the climate system".[82] All FCCC parties made various inventory, reporting and policy-related commitments to this end.[83] However, only developed country parties and parties with economies in transition, listed in Annex I to the convention (Annex I parties), undertook to "aim" to return, by the year 2000, to their 1990 levels of greenhouse gas emissions.[84]

The Kyoto Protocol was intended to take the climate change regime beyond the convention's stabilization goal, which was widely seen as insufficient to address climate change concerns.[85] Like the FCCC, the Kyoto Protocol contains no specific emissions related commitments for developing countries. The protocol is primarily designed to enshrine legally binding emission reduction and limitation commitments by Annex I parties, to establish emissions trading mechanisms that increase the options for meeting these commitments, and to set up processes to assess compliance and address non-compliance with the protocol commitments.

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[79] See Daniel Bodansky, "Bonn Voyage: Kyoto's Uncertain Revival" (Fall 2001) *The National Interest* 45, at 48.

[80] For the political agreement on the Kyoto Protocol reached on July 24, 2001, see Decision 5/CP.6, UN Doc. FCCC/CP/2001/L.7, available at <http://www.unfccc.int/resource/docs/cop6secpart/l07.pdf> (accessed March 11, 2003). For an overview on the resumed COP-6, Hermann Ott, "The Bonn Agreement to the Kyoto Protocol – Paving the Way for Ratification" (2001) 1 *International Environmental Agreements* 469.

[81] Marrakech Accords, *supra* note 4. The results of COP-7 are summarized in David A. Wirth, "The Sixth Session (Part Two) and Seventh Session of the Conference of the Parties to the Framework Convention on Climate Change" (2002) 96 *Am.J.Int'l L.* 648. See also Meinhard Doelle, "From Kyoto to Marrakech – A Long Walk Through the Desert: Mirage or Oasis?" (2003) 25 *Dalhousie L. J.* (forthcoming).

[82] See FCCC, *supra* note 1, Article 2.

[83] Ibid., at Articles 4.1 & 12.1.

[84] Ibid., at Article 4.2 (a) & (b).

[85] See Christopher Flavin, "Last Tango in Buenos Aires: While Climate Treaty Negotiators Dance on with their Slow Give-and-Take, the Climate Itself is Running Amok" (1998) 11 *World-Watch* 10, at 14.

The protocol's emission reduction commitments are anchored in its Article 3. Under Article 3.1, Annex I parties must ensure, "individually or jointly, that their aggregate anthropogenic carbon dioxide equivalent emissions of the greenhouse gases listed in Annex A to the protocol do not exceed their assigned amounts". The goal is to reduce Annex I parties' collective greenhouse gas emissions by at least 5 percent below 1990 levels in the first commitment period (2008 to 2012).[86] Individual targets ("assigned amounts") are listed in Annex B to the protocol; they range from 8 percent reductions to 10 percent increases.[87]

Although these commitments fall short of what is required to address global warming,[88] their implementation presents serious challenges to many Annex I parties.[89] Given emission trends since the adoption of the Kyoto Protocol, the actual reductions required from parties would be far greater than the percentages contained in the protocol.[90] Therefore, agreement upon emission reduction commitments was inextricably linked to flexibility in meeting these commitments.[91] The most important mechanisms for flexibility, the so-called "Kyoto Mechanisms", involve transfers of emission units or reduction credits between parties.[92]

VI. The Kyoto Mechanisms

Joint implementation (JI) under Article 6 and the clean development mechanism (CDM) under Article 12 both involve transfers of emission reduction credits generated by projects undertaken in other protocol countries. Given that one of the purposes of the CDM is to assist non-Annex I parties in achieving sustainable development, CDM projects must take place in non-Annex I countries (rather than in Annex I countries, as under JI). In part, the CDM is intended to demonstrate to developing countries the benefits that they could derive from emission reduction

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[86] But note that, if all flexibility options in the Marrakech Accords were used, the overall reduction is projected to be only 2.2 per cent. See Hermann E. Ott, "Climate Policy after the Marrakesh Accords: From Legislation to Implementation" (2001), at 12; available at <http://www.wupperinst.org/download/Ott-after-marrakesh.pdf> (accessed March 11, 2003).

[87] Annex B inscribes percentages of greenhouse gas emissions in 1990 for each Annex I party and the party's assigned amount is determined by multiplying this percentage by five, i.e. the number of years in the commitment period (Article 3.7).

[88] See Bert Bolin, "The Kyoto Negotiations and Climate Change: A Scientific Perspective" (1998) 279 *Science* 330; Flavin, *supra* note 85, at 14.

[89] See Peter Cook, "Kyoto: The Climate Changes", *The [Toronto] Globe & Mail*, 29 October 1999, B2. Cook notes that, rather than achieve an overall greenhouse gas emission reduction of 5 per cent below 1990 levels, "the world is on track to raise these emissions by 18 per cent".

[90] For example, the United States would have been required to make reductions of 30-35 per cent from business-as-usual projections for the 2008-2012 period. See Bodansky, *supra* note 79, at 47. Canada's situation is similar. See Chris Rolfe, *Opportunities and Liabilities from Greenhouse Gas Emissions and Greenhouse Gas Emission Reductions* (March 1999), at 4; at <http://www.wcel.org/wcelpub/1999/12753.html> (accessed March 11, 2003).

[91] Flavin, *supra* note 85, at 14-15.

[92] According to Article 3.10-3.12, the effect of such transfers is that emission units are added to or subtracted from, as the case may be, the assigned amounts of the parties involved.

efforts under the Kyoto Protocol. The most controversial of the Kyoto mechanisms is international emissions trading (IET) under Article 17 of the protocol. Unlike JI or CDM transactions, IET transactions do not involve the transfer of credits for actual emission reductions, but the sale or acquisition of portions of individual parties' assigned amounts.

The main arguments in support of the transfer mechanisms are that they provide avenues for more efficient and cost-effective emission reductions. Countries that face high compliance costs can elect to acquire lower-cost reductions (or emission units) elsewhere and thus reduce the need for emission reductions at home. The expectation is that market dynamics will create incentives to both generate tradable reductions and find lower cost domestic solutions that reduce the need to acquire emission units abroad.[93] To take full advantage of these dynamics, a key feature of the transfer mechanisms is that they allow the involvement of private business entities.[94] Such private entity involvement is an innovative attempt to get at one of the key problems for states in meeting international environmental commitments: the necessary action typically is not state action, but action by private parties. The legal and practical complexities of this approach, of course, are legion.[95] Nonetheless, the hope is that corporations and utilities will become so interested in "carbon commerce" opportunities that a private market evolves that can boost the state parties' efforts to meet their emission targets.[96]

The promise of the Kyoto Mechanisms, needless to say, comes at a price. While the mechanisms have the potential to assist and create incentives for compliance, they could also produce the opposite effect, undermining the emission reduction goals of the protocol. This could be the case, for example, if parties were able to sell emission units that exceed their assigned amounts, or sell units that they need to remain in compliance. These scenarios underscore the need to erect barriers against "over-selling", either by forestalling such transactions altogether, or by ensuring that the relevant emission units cannot be counted towards compliance by the acquiring state. Without such measures, one of the key premises of the mechan-

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[93] For an overview see Jonathan Wiener, "Designing Markets for International Greenhouse Gas Control", in Resources for the Future, Climate Issue Brief #6 (October 1997, Rev'd July 2000), at 3-9; available at <http://www.rff.org/environment/climate.htm#reports> (accessed March 11, 2003).

[94] See Articles 6.3, 12.9 & 17 of the Kyoto Protocol, *supra* note 2. While Article 17 does not mention private entity involvement, the trading rules included in the Marrakech Accords provide for it. See Marrakech Accords, *supra* note 4, Decision 16/CP.7, Draft Decision (Article 17), 5.

[95] An array of issues arises, for example, regarding the interface between states' international legal obligations under the Protocol and transactions of corporate entities under their jurisdiction. On questions of private international law arising in the context of contracts between entities engaging in Kyoto mechanism transactions, see Ibibia L. Woricka *et al.*, "Contractual Aspects of Implementing the Clean Development Mechanism and Other Flexibility Mechanisms under the Kyoto Protocol", in: W. Bradnee Chambers ed., *Inter-Linkages: The Kyoto Protocol and the International Trade and Investment Regimes* 215 (2001).

[96] For example, the World Bank launched a Prototype Carbon Fund, which invests in emission reduction projects and from which companies and governments can buy shares that will provide emission reductions for the purposes of meeting Kyoto Protocol commitments. See <http://www.prototypecarbonfund.org> (accessed March 11, 2003).

isms, that they are to allow re-allocation of emissions but not an increase in overall emissions, would be at risk. More generally, reliable information on parties' emission reduction performance and reliable tracking of all transactions emerge as crucial to the integrity of the mechanisms. Such information and tracking is central not only to the prevention of over-selling, but also to the valuation of the emission units that are traded.

In short, the success or failure of the Kyoto Protocol's market-based mechanisms – indeed, of the protocol – depends to a considerable extent on the balance struck in the rules that govern these mechanisms. For the trading regime to gain and maintain momentum, the mechanism rules must allow for efficient transactions. Yet, if the rules are too lenient, incentives might exist for abuse, ultimately leading to the breakdown of the mechanisms.

VII. Situating the Compliance Regime of the Kyoto Protocol

As the previous section has illustrated, the Kyoto Protocol has a number of unique features, which pose unique challenges for the development of a compliance regime. First, the protocol will require Annex I parties to reduce greenhouse gas emission significantly below "business as usual" levels. It will require significant action in a broad swath of economic sectors and will impact on a wide range of commercial and private activities. Therefore, compliance with Kyoto commitments has significant – perhaps unprecedented – economic implications; non-compliance by some parties is likely to raise significant competitiveness concerns. Secondly, given that several Annex I parties will find it genuinely difficult to meet Kyoto's emission reduction commitments, it is conceivable that some will find themselves in non-compliance with the protocol. Thirdly, whereas under other MEAs non-compliant parties have tended to be developing countries or countries with economies in transition (CEITs), non-compliance with the Kyoto Protocol may well involve industrialized countries. Finally, the protocol's reliance on market-based mechanisms and the involvement of private entities in these mechanisms pose new and complex compliance issues.

In developing the compliance regime for the Kyoto Protocol, negotiators agreed early on that a compliance regime could not simply adopt wholesale existing models, such as the Montreal Protocol's non-compliance procedure. It had to be tailored to fit the unique features of the Kyoto Protocol, providing a multi-layered compliance system.[97]

[97] For a detailed account of the early stages of the compliance negotiations, see Jutta Brunnée, "A Fine Balance: Facilitation and Enforcement in the Design of a Compliance Regime for the Kyoto Protocol" (2000) 13 *Tulane Env. L. J.* 223.

VIII. Elements of the Compliance System

The Kyoto Protocol, in its Article 18, calls for the development of "appropriate and effective procedures and mechanisms to determine and address cases of non-compliance". Other key elements of the compliance system are found elsewhere in the protocol: in its inventory and reporting regime, in the rules governing the Kyoto Mechanisms, and in an expert review of parties' implementation efforts. A detailed discussion of these elements is beyond the scope of this article, which focuses on the *Procedures and Mechanisms on Compliance under the Kyoto Protocol* adopted in the Marrakech Accords.[98] However, given the many linkages between the *Procedures and Mechanisms* and other parts of the protocol, it is important to highlight some of the key features.

Article 5.1 of the protocol requires all Annex I parties to have in place, by 2007, a national system for the estimation of anthropogenic emissions by sources and removals by sinks of greenhouse gases. The national monitoring systems are intended to facilitate the production by each Annex I party of an annual inventory of greenhouse gas emissions and removals. These inventories, in turn, will enable parties to meet their reporting commitments under Article 7 of the protocol and, ultimately, will permit an assessment of parties' compliance with their emission reduction commitments. Inventory and reporting commitments, then, provide a crucial interface between the parties' implementation efforts and the compliance assessment process. In the Marrakech Accords, parties agreed on detailed guidelines that will flesh out the requirements of Articles 5 and 7, and that are intended to ensure rigorous and comparable methodologies.[99]

The Marrakesh Accords also contain the rules that are to govern the Kyoto Mechanisms. A key aspect of the mechanism rules is that they make the eligibility of an Annex I party for participation in the mechanisms contingent upon their compliance with the abovementioned inventory and reporting commitments under Articles 5 and 7 of the protocol.[100] These eligibility requirements are intended to ensure the availability of reliable information on parties' emission reduction performance, and to help prevent uses of the mechanisms that would undermine rather than support the protocol's reduction goals. For the same reasons, the mechanism rules also contain extensive rules on the tracking of all transfers of emission units. Each Annex I party is required, *inter alia*, to "establish and maintain a national registry to ensure the accurate accounting of the issuance, holding, transfer, acquisition, cancellation and retirement" of emission units.[101] Finally, the mechanism rules contain a number of requirements designed to address the previously men-

[98] Marrakech Accords, *supra* note 4, Decision 24/CP.7, Annex I.

[99] Marrakech Accords, *supra* note 4, Decision 20/CP.7, Draft Decision (Article 5.1); Decision 21/CP.7, Draft Decision (Article 5.2); Decision 22/CP.7, Draft Decision (Article 7).

[100] Marrakech Accords, *supra* note 4, Decision 15/CP.7, Draft Decision (Mechanisms), 5; Decision 16/CP.7, Draft Decision (Article 6), 21-29; Decision 16/CP.7, Draft Decision (Article 12), 31-34; Decision 16/CP.7, Draft Decision (Article 17), 2-4.

[101] Decision 19/CP.7, Draft Decision (Modalities for the accounting of assigned amounts), 17.

tioned risk of "over-selling" of emission units by individual parties. Most notably, under the rules that are to govern international emissions trading, Annex I parties must maintain a "reserve" of emission units that is to ensure compliance with their reduction commitments.[102] In addition, if a transferring party's compliance reserve falls below the required levels, any emission units acquired by another party will "not be valid for use towards compliance" with its emission reduction commitments "until the problem has been corrected".[103] This requirement will introduce a limited form of "buyer liability", shifting the risks of seller non-compliance to the acquiring party.[104]

The first step in the assessment of parties' performance is the regular review of information submitted by parties pursuant to Article 7 by expert teams. According to Article 8.3, this in-depth review is to provide "a thorough and comprehensive technical assessment of all aspects of the implementation by a Party of [the] Protocol".[105] It is important to note that the protocol tasks the expert review teams only with the identification of "questions of implementation",[106] not the determination of parties' compliance, let alone non-compliance, with their commitments. This mandate is designed to preserve the technical and factual focus of expert review and to clearly separate it from potentially sensitive and politicized compliance issues. In addition to the role of the expert review in the assessment of parties' Article 7 reports that is envisaged in the Kyoto Protocol,[107] the Marrakech Accords provide for expert review of several of the new mechanism-related compliance safeguards. For example, the review teams are to assess the performance of the abovementioned national registries, including through in-country visits.[108] Expert reviews are also to play a role in assessing whether a party that has lost eligibility to use the Kyoto mechanisms meets the requirements for reinstatement.[109] In short, the protocol's expert review process will play a crucial role in linking the protocol's compliance related elements and compliance assessment through the *Procedures and Mechanisms*.

IX. The Procedures and Mechanisms on Compliance

The declared goals of the Kyoto Protocol's Procedures and Mechanisms on Compliance are to "facilitate, promote and enforce compliance" with the proto-

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[102] Decision 16/CP.7, Draft Decision (Article 17), 6. See also Wirth, *supra* note 81, at 652-653.

[103] Decision 19/CP.7, Draft Decision (Modalities for the accounting of assigned amounts), 42(b), 43(b).

[104] Several different approaches to distributing the non-compliance risks inherent in emission units transfers were contemplated during the negotiations. See Brunnée, *supra* note 97, at 238.

[105] See Kyoto Protocol, *supra* note 2, Article 8.3.

[106] Ibid.

[107] Marrakech Accords, *supra* note 4, Decision 23/CP.7, Draft Decision (Article 8).

[108] Ibid., Decision 23/CP.7, Appendix I.

[109] Ibid., Appendix II.

col.[110] This set of goals takes the procedures and mechanisms beyond the largely facilitative range of approaches of existing non-compliance regimes. The Kyoto compliance regime also sets itself apart through institutional and procedural arrangements that reflect the broader range of its goals.

The regime's institutional core is a Compliance Committee, which will have a "facilitative branch" and an "enforcement branch".[111] The committee will have twenty members, with each branch comprising ten members.[112] Elected by the meeting of the parties to the protocol, committee members will be experts, serving in their personal capacities.[113] Each branch must include one member from each of the five UN regional groups and one member from the small island developing states. Each branch must also include two Annex I party members, and two non-Annex I party members.[114]

The task of the facilitative branch is to promote compliance with protocol commitments through advice and assistance, "taking into account the principle of common but differentiated responsibilities and respective capabilities" enshrined in the FCCC.[115] The facilitative branch is responsible for questions concerning the implementation of protocol commitments other than those related to Annex I parties' emission reduction commitments.[116] Emission reduction commitments under Article 3.1, and inventory and reporting commitments under Articles 5 and 7, are within the purview of the facilitative branch only when referred to it by the enforcement branch, or prior to and during a given commitment period.[117] In keeping with the role of the facilitative branch, the means at its disposal in addressing compliance problems include: advice and facilitation of assistance to individual parties, facilitation of financial and technical assistance, and recommendations to the party concerned.[118]

While the facilitative branch resembles existing compliance mechanisms, the enforcement branch displays a series of features that are unprecedented in the MEA context. The enforcement branch is tasked with the resolution of all compliance

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[110] *Procedures and Mechanisms*, *supra* note 4, I.

[111] Ibid., II.2.

[112] Ibid., II.3.

[113] Ibid., II.3 & 6.

[114] Ibid., IV.1 & V.1. In view of the fact that only Annex I parties have emission reduction commitments under the Kyoto Protocol, committee membership was a hotly contested issue during the negotiations. See Brunnée, *supra* note 97, at 251-252 (note 139). And see *infra* note 137 and accompanying text.

[115] *Procedures and Mechanisms*, *supra* note 4, IV.4, XIV.

[116] Ibid., IV.5.

[117] Ibid., IV.6; IX. 12. Compliance with the emission reduction commitment under Article 3.1 can be assessed only at the end of the five year commitment period. However, there is room for "promoting compliance and providing for early warning of potential non-compliance" during the commitment period (IV.6).

[118] Ibid., XIV(a)-(d). In view of the facilitative aspects of the *Procedures and Mechanisms* it is unlikely that the "multilateral consultative process" under Article 13 FCCC will be applied to the Kyoto Protocol, as Article 17 of the protocol had contemplated. On this process, see Brunnée, *supra* note 97, at 241-242.

questions relating to Annex I parties' emission target related commitments: the reduction commitment under Article 3.1, relevant inventory and reporting commitments under Articles 5 and 7, and eligibility requirements for the Kyoto mechanisms.[119] Unlike compliance bodies under other MEAs, the enforcement branch not only determines whether a party is in compliance with its commitments but also applies "consequences" to non-compliance.[120] These consequences are cast not as punitive but as providing for "the restoration of compliance to ensure environmental integrity", and "for an incentive to comply".[121]

In terms of intrusiveness, the range of consequences contemplated under the Kyoto Protocol procedures begins roughly where the spectrum of consequences under existing non-compliance procedures tends to end. The consequences that can be applied under the *Procedures and Mechanisms* differ depending on the underlying commitment. In cases of non-compliance with inventory or reporting commitments, consequences will consist in a declaration of non-compliance and in the requirement that the party concerned prepare a "compliance action plan".[122] That plan must include an analysis of the causes of non-compliance, the measures that the party intends to take to remedy the non-compliance, and a time-table for their implementation. Progress in the implementation of the plan must be reported to the enforcement branch.[123] Where the enforcement branch has determined that a party has not met one or more of the eligibility requirements for the Kyoto mechanisms, the consequence will be suspension of the party from participation in the mechanisms.[124] Finally, in the case of the emission reduction commitments under Article 3.1, there will be a grace period after the completion of the expert review under Article 8, during which parties can acquire emission rights or credits to bring themselves within their assigned amounts.[125] Where a party nonetheless exceeds its emissions entitlement, it will suffer suspension from eligibility to transfer emission units under Article 17, and it will be required to develop a compliance action plan.[126] In addition, the excess emissions will be deducted, at penalty rate of 1.3, from that party's assigned amount for the next commitment period.[127] The penalty rate is intended to discourage parties from simply postponing their emission reductions to the subsequent commitment period.[128]

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[119] Ibid., V.4. With respect to the eligibility requirements, the *Procedures and Mechanisms* are complemented by the rules governing the Kyoto mechanisms. These rules provide that the enforcement branch is tasked with eligibility assessments. Id., Decision 15/CP.7, Draft Decision (Mechanisms), 5.

[120] *Procedures and Mechanisms*, ibid., I, V.6 & XV.

[121] Ibid., V.6.

[122] Ibid., XV.1.

[123] Ibid., XV.2&3.

[124] Ibid., XV.4. See also *supra* note 100 and accompanying text.

[125] Ibid., XIII, XV.5.

[126] Ibid., XV.5(a)&(b), 6&7.

[127] Ibid., XV.5(c).

[128] During the negotiations, many "penalty" options, including deduction of excess emissions and payments into a "compliance fund" were under discussion. See Brunnée, *supra* note 97, at 248-249.

Aside from the bifurcation of the compliance committee and its process into facilitative and enforcement-oriented tracks, the protocol's compliance regime has a number of other features that deserve attention.

First, the process is triggered by questions of implementation raised by expert reviews under Article 8, or raised by a protocol party, either with respect to itself or with respect to another party.[129] As noted earlier, in existing compliance regimes, proceedings have been triggered through self-reporting by parties anticipating compliance problems. In the case of the Kyoto Protocol, this route into the compliance process will likely play an important role for the facilitative branch, and for the enforcement branch during the commitment period. However, it is worth stressing that, once compliance with emission reduction commitments is assessed at the end of the commitment period, all questions of implementation indicated in expert review reports will come before the compliance committee.

Secondly, in view of the many linkages between the compliance process and the operation of core elements of the protocol the *Procedures and Mechanisms* provide for strict timelines.[130] Notably, an expedited procedure is provided for questions relating to compliance with eligibility requirements for the Kyoto mechanisms, both for proceedings to suspend eligibility and proceedings to have eligibility reinstated.[131]

Thirdly, the *Procedures and Mechanisms* go further than most other MEA-based compliance procedures in providing access to non-state actors.[132] While the compliance procedure can only be triggered by questions raised by expert reviews or by protocol parties, competent intergovernmental or non-governmental organizations can submit "relevant factual and technical information" to either branch of the compliance committee.[133] Unless the relevant branch decides otherwise, and subject to rules of confidentiality, all information considered by the branch is made public.[134] In addition, unless the enforcement branch decides otherwise, any hearings that it holds will be public.[135] In all cases, final decisions will be available to the public.[136]

Fourth, the Kyoto compliance committee itself will decide non-compliance cases. Failing consensus, it can adopt decisions by three fourths majority. Decisions of the enforcement branch will require the support of a majority of members from both Annex I and non-Annex I parties.[137] As noted earlier, other non-compliance

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[129] *Procedures and Mechanisms*, *supra* note 4, VI.1.

[130] Ibid., VII.3 (initial screening of implementation questions and allocation to branches); IX. (procedures of the enforcement branch).

[131] Ibid., X.1-4.

[132] But see *supra* notes 65 & 66 regarding the procedure adopted under the Aarhus Convention.

[133] *Procedures and Mechanisms*, *supra* note 4, Annex, VIII.4. Each branch may also seek expert advice. Id., VIII.5.

[134] Subject to rules of confidentiality, all information must be made public once a final decision is reached. Ibid., VIII.6.

[135] Ibid., IX.2.

[136] Ibid., VIII.7.

[137] Ibid., II.8&9.

procedures limit the compliance body's role to making recommendations to the treaty's plenary body. This approach is designed to reduce the pressures on the non-compliance process, and to leave political oversight in the control of all parties. At first blush, then, it may seem surprising that the protocol parties were willing to place decisions, including decisions resulting in significant consequences, in the hands of a relatively small body. A closer look reveals, however, that the balance is correctly struck for the purposes of the Kyoto Protocol. For a number of reasons, involvement of the meeting of the parties in all compliance decisions would not be feasible. Practically speaking, plenary oversight would slow down compliance decisions to an unmanageable degree. More fundamentally, plenary oversight could actually be potentially problematic. Only a relatively small number of parties will have emission reduction commitments under the protocol, and will be exposed to non-compliance consequences. For many Annex I parties, it would not have been acceptable that parties without such commitments or exposure might control non-compliance decisions. It is for this very reason that decisions of the enforcement branch require a majority of both Annex I and non-Annex I members. In any case, it is unclear that plenary proceedings on sensitive compliance issues would have assisted the compliance process. Further, it should be noted that the *Procedures and Mechanisms* actually do leave much of the control over the most sensitive matters – consequences to non-compliance with target related commitments – in the hands of all parties. In adopting the *Procedures and Mechanisms*, the parties will adopt a set range of predetermined consequences. The compliance committee does not actually decide on whether or not to impose consequences, or which consequence to impose. It merely determines, based on the expert review that precedes the compliance process, whether a party is in non-compliance and, if so, "applies" the predetermined consequences.

A final noteworthy feature of the Kyoto Protocol's compliance procedure is that it allows for an appeal of enforcement branch decisions relating to a party's compliance with Article 3.1. Since these decisions expose parties to the most significant consequences, the *Procedures and Mechanisms* permit an appeal to the meeting of the parties if the affected party "believes it has been denied due process".[138] The plenary, therefore, cannot revisit the substance of the enforcement branch decision but can focus only on procedural considerations. Further, in an approach loosely modeled upon the "reverse consensus" override of Appellate Body decisions in the World Trade Organization, the meeting of the parties must agree by a three-fourths majority vote to override the decision of the enforcement branch and send the matter back for review.[139] Importantly, appeals do not stay the decision of the enforcement branch.[140]

One issue remains to be addressed in this overview on the Kyoto Protocol's *Procedures and Mechanisms*. According to Article 18 of the Kyoto Protocol, the *Pro-*

[138] Ibid., XI.1.
[139] Ibid., XI.3.
[140] Ibid., XI.4.

cedures and Mechanisms are to be adopted through a decision of the first meeting of the parties to the protocol. However, "[a]ny procedures and mechanisms ... entailing binding consequences shall be adopted by means of an amendment to [the] Protocol". This requirement confronts the parties with a dilemma. An amendment can be adopted only once the protocol is in force and it will bind only those parties that ratify it.[141] Under this approach, then, the protocol would enter into force without a compliance regime that includes "binding consequences", and without any guarantee that all parties will be exposed to binding consequences. Based on the Bonn Agreement, parties initially pursued a two-pronged solution to this dilemma. One element involved making a party's participation in the Kyoto mechanisms contingent upon it having accepted an agreement supplementing protocol and containing the *Procedures and Mechanisms*.[142] The other element envisaged parties bringing the *Procedures and Mechanisms* into operation by simple decision, while recommending to the protocol's meeting of the parties that it adopt the regime "in terms of Article 18".[143]

The decisions adopted at COP-7 in Marrakech reflect the continuing disagreements among parties and leave the issue unresolved. Mechanism participation is not linked to acceptance of an agreement on the *Procedures and Mechanisms*. The decision on the Kyoto mechanisms simply provides for oversight of eligibility criteria by the enforcement branch, "assuming approval" of the *Procedures and Mechanisms* in a form to be determined by the future meeting of the parties to the protocol.[144] In the decision on the compliance regime itself, COP-7 adopted the "text containing the procedures and mechanisms relating to compliance under the Kyoto Protocol" (annexed to the decision).[145] As envisaged by the Bonn Agreement, it recommends to the meeting of the parties to the protocol that, at its first session, it adopts the procedures and mechanisms "in terms of Article18".[146] In addition, the decision's preamble notes that it is the meeting's prerogative "to decide on the legal form" of the compliance regime.[147]

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141 Kyoto Protocol, *supra* note 2, Article 20.4.

142 Bonn Agreement, *supra* note 80, Dec. 5/CP.6, Annex, VI.11.

143 This approach was contemplated in the Bonn Agreement. COP-6 *bis* produced a draft decision under which the FCCC COP would adopt the compliance regime and, upon entry into force of the protocol, the meeting of its parties would "confirm" the COP decision through a decision that would bring the compliance regime "into operation". See draft decision -/CP.6, in *Preparations for the First Session of the Conference of the Parties Serving as the Meeting of the Parties to the Kyoto Protocol (Decision 8/CP.4) – Procedures and Mechanisms on Compliance under the Kyoto Protocol*, UN Doc. FCCC/CP/2001/CRP.12/Rev.1, at <http://www.unfccc.int/resource/docs/cop6secpart/crp12r01.pdf> (accessed March 11, 2003). This approach appealed to parties that were reluctant to accept binding consequences. See *Summary of the Resumed Sixth Session of the Conference of the Parties to the UN Framework Convention on Climate Change: 16-17 July 2001*, 12 Earth Negotiations Bulletin (IISD) 176 (30 July 2001), available at <http://www.iisd.ca/linkages/download/pdf/enb12176e.pdf> (accessed March 11, 2003), at 14 (commenting on the preference, expressed at COP-6, of Australia, Japan and the Russian Federation for a "politically binding" compliance regime).

144 Marrakech Accords, *supra* note 4, Decision 15/CP.7, Draft Decision (Mechanisms), 5.

145 *Procedures and Mechanisms*, *supra* note 4, 1.

146 See ibid., 2.

Much has been made of the question of "binding consequences".[148] In the end, the dilemma may be more apparent than real. Nothing would prevent the meeting of the parties to the protocol from adopting the *Procedures and Mechanisms* by simple decision. Since decisions of meetings of parties are not normally legally binding, this would mean that the consequences outlined in the *Procedures and Mechanisms* could not be considered to be binding strictly speaking. But would their adoption in legally binding form really make a significant difference to their impact? In the practice of the FCCC, other decisions have been adopted that are not formally binding but that contain an array of mandatory terms.[149] Notably, many of the decisions compiled in the Marrakech Accords, including the decisions governing the Kyoto mechanisms, contain such terms. The ambiguity of their legal status does not appear to be of undue concern to the parties, perhaps because many MEAs have used such "mandatory" but technically non-binding devices very successfully.[150] In short, it is not clear that adoption of the *Procedures and Mechanisms* in legally binding form would significantly enhance their effectiveness. If a party truly wished to resist the imposition of non-compliance consequences, it would likely do so whether they are formally binding or not. Insistence on adoption of the *Procedures and Mechanisms* by amendment merely allows parties to opt out of the compliance regime. Thus, adoption by simple decision, applicable to all parties, may well be more likely to create a successful compliance regime.[151]

X. Conclusion

In comparison to existing non-compliance procedures, the Kyoto Protocol's *Procedures and Mechanisms* bring an array of innovations. In part, these innovations are responses to the unique features of the protocol itself. In part, they are likely the result of the experience gained under other MEAs, and the growing degree of comfort with the operation of non-compliance procedures. For example, while the Montreal Protocol non-compliance procedure's role is to "secure an amicable solution ... on the basis of respect for the provisions of the Protocol",[152] observers have noted a gradual "hardening" of its practice, including increasing resort to "sticks" to address persistent patterns of non-compliance.[153]

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147 See ibid., preamble.

148 See, e.g., Matthew Vespa, "Kyoto at Bonn and Marrakech" (2002) 29 *Ecology L. Q.* 395, at 415-416.

149 Designated by words such as "shall", rather than "should" or similar terms.

150 For a detailed review of the role of COP decisions in law-making under the FCCC and other MEAs, see Jutta Brunnée, "COPing with Consent: Lawmaking under Multilateral Environmental Agreements" (2002) 15 *Leiden J. Int'l L.* 1.

151 See also Glenn Wiser, "Report on the Compliance Section of the Marrakech Accords to the Kyoto Protocol", at 4 (December 7, 2001); at <http://www.ciel.org/Publications/Marrakech_Accords_Dec01.pdf> (accessed March 11, 2003); Ott, *supra* note 86, at 7-8.

152 See *MOP-4 Report*, *supra* note 58, annex IV, 8.

153 See Victor, *supra* note 12, at 166-170.

The Kyoto Protocol builds on this tentative move towards more enforcement-oriented approaches. Indeed, given that the Kyoto Protocol will require "deep cooperation" from Annex I parties, it may be tempting to see the protocol as a testing ground for the claims of the "enforcement" school. At first blush, one may even be inclined to see that school's assumptions confirmed in the very design of the *Procedures and Mechanisms*. After all, it is precisely the protocol's most challenging commitments that would attract enforcement-oriented non-compliance consequences. However, only time, and actual practice under the regime, will tell which approach is most conducive to promoting compliance with the protocol – or whether it is in fact a combination of approaches that is required.[154]

The design of the *Procedures and Mechanisms* does combine facilitative, normative-discursive and enforcement-oriented approaches. In view of the Kyoto Protocol's strong reliance on market dynamics, interest-based compliance decisions and (dis)incentives will clearly matter. But this prediction is not inconsistent with the theoretical arguments advanced earlier in this article. Stressing the importance of constructivist-normative explanations of state behaviour is not to deny the relevance of rationalist explanations. As others have observed, cost-benefit calculations and normative socialization each explain important aspects of compliance processes.[155] In this writer's view, it is the potential for the two dynamics – and attendant reliance upon "sanctions" or "persuasion" – to complement one another that has not received sufficient attention. The assertion that "sanctioning authority is rarely granted by treaty, rarely used when granted, and likely to be ineffective when used" is incomplete. It does not sufficiently consider the conditions under which it may be possible both to agree upon sanctions and to make effective use of sanctions. Equally incomplete is the argument that sanctions will be needed to ensure compliance with "deep cooperation" commitments. Even if that assumption as such has merit, it does not elucidate how a regime would get to the point at which the adoption and imposition of effective sanctions is possible.

It is precisely these gaps that attention to the insights provided by an interactional account of international law can help fill. Arguably, the very processes that this article highlighted as important to the formation and persuasive power of legal norms are also crucial to enabling a regime to use enforcement-oriented approaches effectively. The promotion of compliance does not begin with the use of mechanisms for the application of pre-established rules. Nor can non-compliance mechanisms, simply through their creation within treaty regimes, be expected to ensure compliance. Incentives and disincentives, formal dispute settlement, and enforcement through sanctions all have a role to play in influencing international actors. But these means to promote compliance are more likely to be effective when em-

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[154] See also Raustiala, *supra* note 16, at 420 (highlighting the interaction between managerial and enforcement-focused elements in the context of the Montreal Protocol NCP).

[155] See, e.g., Finnemore & Sikkink, *supra* note 8, at 909-915; Kenneth W. Abbott & Duncan Snidal, "Hard and Soft Law in International Governance" (2000) 54 *Int'l Org.* 401, at 422; Downs *et al.*, *supra* note 16, at 468.

bedded in the broader interactional context that this article has sketched.[156] It is already in the processes through which norms are created that the foundations for ultimate compliance, and compliance strategies, must be built. Yes, enforcement-oriented approaches can make a useful contribution to promoting compliance, but only if a sufficiently strong body of shared understandings and legitimate processes has developed within a regime.

The Kyoto Protocol compliance regime has been heralded by many commentators as ground-breaking, notably because it is the first such regime to include enforcement-oriented features.[157] There is some irony in the fact that this apparent "hardening" of approaches to compliance with MEAs may well end up being accomplished in legally "soft" form. If so, the *Procedures and Mechanisms*' non-binding form should not automatically be seen as indicative of its weakness. The regime's ability to operate and to impose consequences will likely depend at least as much on its perceived legitimacy as on its legal form. Indeed, its adoption in binding form may create a false sense of assurance, diverting attention from the need to nurture the persuasive power of the climate change regime. If it enters into force, the Kyoto Protocol will provide a testing ground for compliance theories. But disentangling the factors that promote compliance will require not just an examination of the compliance regime's facilitative and enforcement-oriented elements. It will also require close attention to the legal norms and processes that anchor these elements.

[156] See also Jutta Brunnée & Stephen J. Toope, "Environmental Security and Freshwater Resources: Ecosystem Regime Building" (1997) 91 *Am. J. Int'l L.* 26, at 47. This earlier work developed the notion of a regime continuum (id., at 28). The conclusion that, in early stages of regime formation, soft and facilitative approaches to compliance are likely preferable to attempts to define non-compliance for purposes of penalties (id., at 57), does not exclude the usefulness of "harder" approaches once political and legal legitimacy has been achieved (id., at 47).

[157] See, e.g., Glenn Wiser, "Kyoto Protocol Packs Powerful Compliance Punch" (2002) 25 *International Environment Report* 86, available at <http://www.ciel.org/Publications/INER_Compliance.pdf> (accessed March 11, 2003); Ott, *supra* note 86, at 6. But see also Vespa, *supra* note 148, at 414-416 (arguing that the Kyoto penalties are inadequate to deter non-compliance).