Article

Rethinking Decisionmaking in International Environmental Law: A Process-Oriented Inquiry into Sustainable Development

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"A point has been reached in history when we must shape our actions throughout the world with a more prudent care for their environmental consequences. Through ignorance or indifference we can do massive and irreversible harm to the earthly environment . . . ."[1]

I. INTRODUCTION

Almost forty years ago, the United Nations began recognizing a "rising [environmental] crisis of worldwide proportions."[2] Around the same time, the New Haven School was building worldwide "a jurisprudence of human dignity." That jurisprudence, a combined effort of sociologist Harold D. Lasswell and law professors Myres S. McDougal and W. Michael Reisman, described itself as "a contextual, policy-oriented jurisprudence, postulating as its overriding goal the dignity of man in an increasingly universal public

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1. U.N. Conference on the Human Environment, Stockholm, Swed., June 5-16, 1972, *Declaration*, ¶ 6, U.N. Doc. A/CONF.48/14 (June 16, 1972), *reprinted in* 11 I.L.M. 1416, 1417 [hereinafter Stockholm Declaration].

2. U.N. Econ. & Soc. Council, *Report of the Secretary General on the Problems of the Human Environment*, ¶ 1, U.N. Doc. E/4667 (May 26, 1969).

order."[3] Drawing on insights from the social and behavioral sciences, Lasswell and McDougal developed an elaborate system of legal analysis intended to flesh out the core values of human dignity, and the processes necessary to translate those values into universal theories of legal decisionmaking.[4] Their process-oriented jurisprudence produced an impressive body of scholarship.[5] It remains one of the major theories of law and one of the few that attempts to account for law in both domestic and international arenas.

The relationship between human dignity and the human environment in their jurisprudence raises a host of interesting questions. For example, what should this relationship look like in the realm of sustainable development, an area that has now become central to international environmental law, and yet has taken on a variety of meanings? Numerous treaties, proclamations, and declarations have adopted sustainable development as a goal, expressing it in terms of a global consensus.[6] However, attempts to implement sustainable development rapidly run into a Wittgensteinian dilemma where the same term means very different things to different thinkers acting in a variety of contexts.[7] Thus, widespread agreement on a principle does not translate into agreement on the principle's normative content.

This Article suggests that a re-engagement with the New Haven School's process-oriented jurisprudence might cast light on this dilemma that international environmental law faces: how to reconcile the competing visions of sustainable development offered by decisionmakers from widely different cultures. To that end, this Article heeds the New Haven School's call for a clearly defined methodology for identifying problems, goals, conflicting

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3. MYRES S. MCDOUGAL ET AL., STUDIES IN WORLD PUBLIC ORDER ix (1960).

4. *See* HAROLD D. LASSWELL & MYRES S. MCDOUGAL, JURISPRUDENCE FOR A FREE SOCIETY (1992) [hereinafter LASSWELL & MCDOUGAL, JURISPRUDENCE].

5. These New Haven School thinkers produced too voluminous a literature to permit exhaustive citation. Publications I drew upon for this project include: LUNG-CHU CHEN, AN INTRODUCTION TO CONTEMPORARY INTERNATIONAL LAW: A POLICY-ORIENTED PERSPECTIVE (2d ed. 2000); LASSWELL & MCDOUGAL, JURISPRUDENCE, *supra* note 4; MYRES S. MCDOUGAL & W. MICHAEL REISMAN, INTERNATIONAL LAW IN CONTEMPORARY PERSPECTIVE: THE PUBLIC ORDER OF THE WORLD COMMUNITY (1981); MYRES S. MCDOUGAL, HAROLD D. LASSWELL & LUNG-CHU CHEN, HUMAN RIGHTS AND WORLD PUBLIC ORDER: THE BASIC POLICIES OF AN INTERNATIONAL LAW OF HUMAN DIGNITY (1980); and Myres S. McDougal, *The Impact of International Law on National Law: A Policy-Oriented Perspective*, 4 S. D. L. REV. 25 (1959) [hereinafter McDougal, *The Impact of International Law*]. Other major New Haven School works are cited throughout this essay.

6. Sustainable development is a central commitment of the U.N. Millennium Development Goals, UNITED NATIONS DEPT. OF ECON. & SOC. AFF., THE MILLENNIUM DEVELOPMENT GOALS REPORT 2006 (2006), *available at* http://mdgs.un.org/unsd/mdg/Resources/Static/Products/Progress2006/MDGReport2006.pdf, and was the focus of the 2002 World Summit on Sustainable Development. *See* U.N. Report of the World Summit on Sustainable Development, Johannesburg, S. Afr., Aug. 26-Sept. 4, 2002, U.N. Doc A/CONF.199.20. The United Nations has established the U.N. Division for Sustainable Development and the affiliated Commission on Sustainable Development. *See* United Nations Commission on Sustainable Development, http://www.un.org/esa/sustdev/csd/policy/htm (last visited Apr. 27, 2007). In December 2002, the U.N. General Assembly declared 2005-2014 as a decade of education for sustainable development. *See* G.A. Res. 57/254, ¶ 1, U.N. Doc. A/RES/S7/254 (Dec. 20, 2002); UNESCO, http://www.unesco.org/education/desd (last visited Apr. 27, 2007). *See also* PHILIPPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 252-66 (2d ed. 2003) (presenting the development of the concept of sustainable development in international environmental law).

7. *See generally* LUDWIG WITTGENSTEIN, PHILOSOPHICAL INVESTIGATIONS §§ 26-34 (G.E.M. Anscombe trans., 2d ed. 1999) (discussing ostensive definitions).

claims, and imbedded policy choices.[8] To account for the complex interdependencies that pervade environmental interactions,[9] this Article explores several important New Haven School tenets: its recognition that every decisionmaker brings to the task of "authoritative decision"[10] perspectives embedded in her particular circumstance; its insistence that legal decisions are inherently about policy; and its embrace of interdisciplinary investigation. Ultimately, this Article suggests that environmental law, domestic and international, must recognize the inescapable interdependence of people and places, and therefore must embrace one of the most striking attributes of the New Haven School line of reasoning, namely its "natural[] receptive[ness] to both an ecological perspective and a futurist concern with assuring the life-chances of subsequent generations."[11] Indeed, the New Haven School's insistence that law and policy must begin from a global concept of community, "premised on the interdependence of the entire earth-space arena in which people interact,"[12] ought to become a guiding insight for modern international environmental law.

While some New Haven School ideas resonate powerfully in this context, exploring this question also highlights some of their weaknesses. In particular, New Haven School writings invoke scientific methods in a fashion both instructive and cautionary. Their engagement with science is two-pronged—sometimes offering their methods as a means for developing scientific information, and sometimes as a means for rendering legal decisions scientific. Exploration of these two strands of thought in the context of sustainable development highlights some problematic questions about the relationship between law, science and policy.

Part II of this essay gives a brief explanation of sustainable development and exposes the conflicts that emerge as decisionmakers attempt to shape its contours. Part III situates these conflicts within a globalizing world, in which new actors wield decisionmaking powers traditionally reserved to the state. Part IV explores how these shifts in decisionmaking power shape competing visions for achieving sustainable development by focusing on the debate over precautionary versus risk-based analysis. Part V assesses the various roles

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8. For example, McDougal, Lasswell, and Reisman state that a configurative jurisprudence must be contextual, problem-oriented, and multi-disciplinary. Myres S. McDougal, Harold D. Lasswell & W. Michael Reisman, *Theories About International Law: Prologue to a Configurative Jurisprudence*, 8 VA. J. INT'L L. 188, 196 (1968) [hereinafter McDougal, Lasswell & Reisman, *Prologue*]. I take seriously Professor Moore's injunction that "just as one should not imbue a methodology with the ability to solve problems, one also should not underestimate the effect which a methodology can have on problem solving." John Norton Moore, *Prolegomenon to the Jurisprudence of Myres McDougal and Harold Lasswell*, 54 VA. L. REV. 662, 673-74 (1968).

9. A good general reference for applying New Haven School ideas to international environmental law is ELLI LOUKA, INTERNATIONAL ENVIRONMENTAL LAW: FAIRNESS, EFFECTIVENESS, AND WORLD ORDER (2006).

10. The New Haven School developed an extensive vocabulary of its own. A central concept, authoritative decision, represents the synthesis of effective control with a legitimated process comporting with the "shared expectations of the members of a community about how decisions should be taken." McDougal, Lasswell & Reisman, *Prologue*, *supra* note 8, at 195 n.15.

11. Richard A. Falk, The Sherrill Lectures delivered at the Yale Law School (1974), *quoted in* Eisuke Suzuki, *The New Haven School of International Law: An Invitation to a Policy-Oriented Jurisprudence*, 1 YALE STUD. WORLD PUB. ORD. 1, 11 (1974).

12. W. Michael Reisman, *Myres S. McDougal: Architect of a Jurisprudence for a Free Society*, 66 MISS. L.J. 15, 19-20 (1996).

ascribed to science in resolving this dilemma and uses New Haven School jurisprudence to examine the complex relationship between law, science, and policy.

There is much to learn from New Haven School ideas about the decisionmaking process and about the many conceptual layers on which legal decisionmakers simultaneously engage. McDougal and Lasswell were ahead of their time in recognizing that decisionmakers act in a context influenced by community values, and answer to multiple constituencies, each of which evaluates the decisions through the lens of its own set of values. Understanding (and influencing) the contours of those decisions necessitates first identifying and evaluating those values and contexts. Particularly as suggestions of a unitary state are re-emerging in international legal discourse,[13] these New Haven School teachings are worth revisiting.

As a tool for determining how to best achieve the goals of sustainable development, however, resort to New Haven School ideas can be dissatisfying. Two rival methods offered as the means to achieve sustainable development—precautionary and cost-benefit analysis—can each be characterized as legitimate products of social world views that respect human dignity; therefore, it is not clear that the New Haven School offers a means of choosing or mediating between them. Moreover, questions surrounding the role of science in New Haven School analysis are particularly troubling. New Haven School writings embrace a relationship between law and science that was deeply embedded in a particular historical and intellectual context. The contemporary reader cannot help but question what appears to be an unrealistic quest for precision in a world marked by chaos and change.

II. THE PROBLEM OF SUSTAINABLE DEVELOPMENT

In the 1972 Stockholm Declaration, the international community recognized that it was possible for humans to "do massive and irreversible harm to the earthly environment on which our life and well-being depend."[14] Since that time, environmental law has become an integral part of the international law world. The 1992 United Nations Conference on the Environment and Development[15] (UNCED or the Rio Conference) focused global attention on environmental concerns and more particularly on the unsustainable nature of human activities. The Rio Declaration focused attention on the poorly understood interactions between co-penetrating biological, physical and social systems.[16] More importantly, the Rio Declaration recognized that human activity was undermining the integrity of natural systems on which human life and society depend.

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13. *See, e.g.*, JACK L. GOLDSMITH & ERIC A. POSNER, THE LIMITS OF INTERNATIONAL LAW (2005).

14. Stockholm Declaration, *supra* note 1, ¶ 6.

15. U.N. Conference on Environment and Development, June 3-14, 1992, *Rio Declaration on the Environment and Development*, Annex I, at 3, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I) (1993) [hereinafter Rio Declaration].

16. *Id.*

Rio marked a transition point—the point at which sustainability entered environmental law's central narrative.[17] Sustainable development—the satisfaction of human needs in a fashion that does not impede the ability of future generations to also satisfy their needs[18]—became a new watchword in international environmental discourse. From Rio onward, an explosion of international treaty-making produced a wealth of multilateral environmental agreements covering everything from access to environmental information[19] to greenhouse gas emissions[20] to persistent organic pollutants.[21] Most or all of these agreements purport to advance the goal of sustainability.

Despite this impressive body of normative law, one cannot escape the sense that the project's practical success has been underwhelming. The aggregate consequences of environmental exploitation continue to threaten the very existence of life on earth,[22] yet the legal project is stymied—unable to convert progress in negotiating legal instruments into significant advances in preserving and protecting the Earth's ecosystems. In many ways, the legal project seems doomed from the start. After all, environmental problems are complex and ambiguous, straddling multifaceted interactions between ecological and human systems. Successfully responding to these problems requires a dynamic balancing process capable of accounting for rapid technological change amidst conflicting national imperatives.

As if straddling the conflicting imperatives of the "right to development"[23] and the "right to the environment"[24] was not enough of a

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17. Robert M. Cover describes this central narrative as the "nomos" of the law. Robert M. Cover, *The Supreme Court 1982 Term—Foreword: Nomos and Narrative*, 97 HARV. L. REV. 4, 9 (1983) (detailing the "relations between the normative and the material universe, between the constraints of reality and the demands of an ethic").

18. This definition comes from the Bruntland Commission. WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE 42 (1987). A situation becomes unsustainable when natural capital is depleted more rapidly than it can be replenished. Thus, at a minimum, sustainability requires that human activity not exceed the regenerative rate for natural resources and capacities.

19. Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, June 25, 1998, 38 I.L.M. 517 (1999).

20. U.N. Framework Convention on Climate Change, May 9, 1992, S. Treaty Doc. No. 102-38, 1771 U.N.T.S. 107; Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 37 I.L.M. 22 (1998).

21. U.N. Environment Programme, Stockholm Convention on Persistent Organic Pollutants, May 22, 2001, 40 I.L.M. 532 (2001).

22. *See, e.g.*, FOOD AND AGRIC. ORG. OF THE U.N., THE STATE OF WORLD FISHERIES AND AQUACULTURE: 2006 (2007), *available at* ftp://ftp.fao.org/docrep/fao/009/a0699e/a0699e.pdf; U.N. Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa, June 17, 1994, 33 I.L.M. 1328 (1994); INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS—SUMMARY FOR POLICYMAKERS (2007), *available at* http://www.ipcc.ch/SPM2feb07.pdf.

23. *See, e.g.*, Declaration on the Right to Development, G.A. Res. 41/128, Annex, at 186, U.N. GAOR, 41st Sess., 97th plen. mtg., U.N. Doc. A/RES/41/128 (Dec. 4, 1986); *see also* THE RIGHT TO DEVELOPMENT IN INTERNATIONAL LAW (Subrata Roy Choudhury et al. eds., 1992) (exploring the ideological and theoretical grounding for a right to development); REFLECTIONS ON THE RIGHT TO DEVELOPMENT (Arjun Sengupta et al. eds., 2005) (exploring links between social choice and the right to development).

24. *See* Xiaobing Xu & George Wilson, *On Conflict of Human Rights*, 5 PIERCE L. REV. 31, 38-39 (2006) (discussing a broad construction of human rights that includes so-called 'third generation rights,' such as development or environment rights). *See generally* Luis E. Rodriguez-Rivera, *Is the Human Right to Environment Recognized Under International Law? It Depends on the Source*, 12

dialectical conundrum, the existence of cross-boundary environmental challenges in a world with clearly demarcated political boundaries makes it difficult for legal decisionmakers to respond on an appropriate scale. Achieving a balance of development and sustainability will require a dynamic, international process of authoritative decisionmaking. Through this process, the world community can respond to and manage change within a tangled web of social, political, and ecological relationships.

Supporting that tangled web are three "interdependent and mutually reinforcing pillars:" economic development, social development, and environmental protection.[25] The complex geometry of these three pillars shifts from one situation to another. The sheer complexity of the natural systems on which human life and society depend, and their myriad poorly-understood interactions, means that sustainability entails managing dynamic systems throughout their inflections of change.

Conflicts arise as individuals, groups, and societies seek to transform "sustainable development" into practical strictures for business and governance.[26] Despite some core agreement on the scope of the project, a wide range of choices can be ascribed to the obligation of sustainable development, growing out of a multiplicity of explicit and implicit interpretations offered in satisfaction of those principles. As societies adapt, apply, and interpret "sustainable development," cracks inevitably appear in the façade of international commitment to common goals. These cracks in turn diminish the ability of international law to achieve a minimum order consistent with these goals.

The interdisciplinary, problem-oriented approach championed by the New Haven School might help decisionmakers as they negotiate the divide between the malleability of the sustainable development imperative and the precision of the multilateral environmental agreements that shape international environmental law. By adopting a self-consciously normative stance, this approach could provide a systematic framework for assessing how to best advance shared goals vis-à-vis sustainable development. Such an approach is more likely to identify innovative opportunities for achieving these common goals with minimum damage to the unshared goals of each community. The next Parts will explore some of these opportunities, first pointing out the New Haven School's lessons for a sustainable development analysis and then highlighting some analytical weaknesses that such an application reveals.

III. EVOLUTION OF DECISIONMAKING AUTHORITY

McDougal and Lasswell posited a process of "authoritative decision" by which "the members of a community clarify and secure their common

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COLO. J. INT'L ENVTL. L. & POL'Y 1 (2001) (tracing the various arguments for a human right to environment).

25. 2005 World Summit Outcome, G.A. Res. 60/1, ¶ 48, U.N. Doc. A/RES/60/1 (Oct. 24, 2005).

26. For a description of how these practices shape treaty rules in a process of "bottom-up" lawmaking, see Janet Koven Levit, *A Bottom-Up Approach to International Lawmaking: The Tale of Three Trade Finance Instruments*, 30 YALE J. INT'L L. 125 (2005).

interests."[27] This authoritative decision encompasses "the factors that affect decision and the aggregate value consequences of different options in decision."[28] Thus, for New Haven School thinkers, authoritative decision forms a critical component of public order and global constitutive process.[29] In their systematic analysis, McDougal and Lasswell explored the relationship between power and control, and attempted to reduce each identified decision factor and value consequence into its component parts.[30]

One of the New Haven School's great contributions to legal analysis, both domestic and international, was its recognition that authoritative decision includes a wide range of social and political outcomes, not merely court decisions or negotiated treaties. Because they sought to illuminate the fashion by which humanity "pursu[ed] values through institutions using resources,"[31] the social processes of decisionmaking were necessarily central to their thinking.

This broad view of authoritative decision has particular resonance in the context of sustainable development which straddles global, national and local decision processes.

Although the decision process for sustainable development often begins internationally, with the diplomats of many states acting together to negotiate a treaty, the real decisions about implementing these agreements occur domestically, within the bureaucratic corps of each state.[32] Not only do these decisionmakers bring a different set of biases and interests to this question, but, as the New Haven School points out, their biases tend to reflect the values of their wider communities. Because they draw on the authority of different communities, these decisionmakers inevitably strike different balances for prioritizing economic and environmental values as they work towards sustainable development. The ambiguity of the agreements, so critical for creating international consensus, creates space for conflicting interpretations at the hands of domestic decisionmakers—though each decisionmaker may be authoritative at the national level.

It is an unfortunate reality that ecosystems are not co-extensive with the jurisdictional reach of nation-states.[33] The mismatch between jurisdictional

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27. 1 LASSWELL & MCDOUGAL, JURISPRUDENCE, *supra* note 4, at xxi.

28. 1 *id.* at xxii. For an in-depth exploration of authoritative decision, see 1 *id.* at 335-709.

29. 1 *id.* at 167-77, 362. (defining constitutive processes as those that establish the processes that will constitute authoritative decision and that sketch the contours of permissible participation in the decision process.) *See generally* Myres S. McDougal, Harold D. Lasswell and W. Michael Reisman, *The World Constitutive Process of Authoritative Decision*, 19 J. LEGAL EDUC. 253 (1967) [hereinafter *World Constitutive Process*] (exploring these ideas in detail).

30. 1 LASSWELL & MCDOUGAL, JURISPRUDENCE, *supra* note 4, at 335-61 (defining the value factors); *World Constitutive Process*, *supra* note 29, at 258-61 (describing the decision process).

31. 1 LASSWELL & MCDOUGAL, JURISPRUDENCE, *supra* note 4, at 336, 375.

32. Among the important points that McDougal and Lasswell raised as a challenge to legal realism was their insistence that actors other than judges made influential decisions about law and that decisionmakers were guided by community preferences in exercising their decisionmaking authority. Howard D. Lasswell & Myres S. McDougal, *Criteria for a Theory About Law*, 44 S. CAL. L. REV. 362, 373 (1971). It was this central insight that inspired the exploration of sustainable development in this Article.

33. *See* TRANSBOUNDARY HARM IN INTERNATIONAL LAW: LESSONS FROM THE TRAIL SMELTER ARBITRATION (Rebecca M. Bratspies & Russell A. Miller eds., 2006); Rebecca Bratspies, *Finessing King Neptune: Fisheries Management and the Limits of International Law*, 25 HARV. ENVTL. L. REV. 213 (2001).

boundaries and ecological boundaries means that it is not enough for individual states to work towards sustainable development within their domestic realms. International cooperation is necessary "to conserve, protect and restore the health and integrity of the Earth's ecosystems."[34] Rather than ensuring international cooperation, however, multilateral environmental agreements may merely have shifted the struggle onto new ground; now, debate centers on which conflicting interpretation of the agreements should hold sway.

In today's world, the line between the decisions that several or all states participate in making, what Professor McDougal termed "inclusive . . . decision[s],"[35] and those that are the unique province of a single state, McDougal's "exclusive decision[s],"[36] becomes ever more blurred. Just as economic globalization[37] renders the territorial delimitation of states less salient than it had been considered in the past; so too the global challenge of sustainable development respects no arbitrary political lines drawn on maps by the forces of history. As such, the decisionmaking processes of international institutions charged with monitoring and enforcing the various sustainable development agreements represent a new front in the struggle to shape authoritative decision.

A. *Authoritative Decision in the New World Order*

Globalization, and particularly the creation of the World Trade Organization (WTO)[38] radically reconfigured decisionmaking for many important public decisions. International organizations and transnational corporations now play a role in decisions that had formerly been the purview of states. This shift in turn raises questions about democratic legitimacy and whether such decisions are truly "authoritative" in the New Haven School sense of the word, that is, growing from community values and encompassing both power and authority.

As the distinction between inclusive and exclusive decisions continues to blur, this question attains additional urgency. The implementation of treaties through adoption of domestic environmental protection standards, once the sole preserve of individual states, has become the ground of the community of states. Fundamental decisions about the degree and kind of risk a society is willing to accept in anticipation of social and economic benefits are no longer made wholly by states and local communities. One effect of the move towards centralization is a shift in the locus of decision from the state, and, at least in theory, a concomitant broadening of the "community" whose values must be considered as part of the decision process.

In this new, more ambiguous system, a multiplicity of possible authoritative decisionmakers jockey for influence: international organizations

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34. Rio Declaration, *supra* note 15, Principle 7.

35. McDougal, *The Impact of International Law*, *supra* note 5, at 31.

36. *Id.*

37. For an excellent discussion of globalization and law, see Paul Schiff Berman, *From International Law to Law and Globalization*, 43 COLUM. J. TRANSNAT'L L. 485 (2005).

38. Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations, Apr. 15, 1994, 33 I.L.M. 1125 (1994) (commonly known as the Marrakesh Agreement).

promulgate standards that would traditionally have been the province of the state; states continue to assert their authority; and transnational actors, particularly corporations, set up alternative streams of power and control. These developments open new venues for negotiation, and influential states devote a great deal of energy to pressuring international organizations to adopt standards consistent with their domestic regimes. While it remains true that no single state may authoritatively impose its own unilateral interpretation of an international agreement upon other states, in a growing number of controversies states seem to be using the mechanisms of international organizations in an attempt to do covertly what they cannot do overtly. In the process, the international organizations are themselves modified: a reconstituted vision of authoritative decisionmaking requires in turn a reconstituted decisionmaker. The struggle is as much over how disputes reshape international organizations in their role as decisionmaker as they are about the particular decision in question.

The World Trade Organization has been a focal point for such contests. Since its establishment in 1995, the WTO has become the institution through which important international trade matters are discussed, including conflicts between national policies and global trade rules. In a series of disputes, member-states have attempted to use the WTO to reshape the domestic law of their rivals. This top-down process is very different from the cooperation between voluntary transgovernmental networks that Anne-Marie Slaughter, Kal Raustiala and others describe.[39] The root contest is over which set of values will take precedence at the point of conflict; i.e., will fear of possible harm give way to desire for economic activity or vice versa? Perhaps even more fundamentally, who will make this determination and via what decisional process?

Since the late 1990s, the United States and the European Union have been at loggerheads over the import and production of genetically modified organisms (GMOs) in agriculture.[40] This trade dispute pits alternative visions for managing risks in an uncertain world against one another. As such, the GMO dispute is one iteration of a broader struggle over the values that will guide authoritative decisionmaking in a globalized world. The same questions and contentions are raised in the context of global warming, in the regulation of toxic and hazardous substances, in fisheries management and in other circumstances too numerous to mention. The GMO dispute thus offers a window into this ongoing contest over authoritative decisionmaking.

In previous eras, states would have been free to structure their regulatory systems to reflect varying degrees of concern about consumer safety and choice triggered by the availability of GMOs, varying worry about gene flow from genetically modified crops to wild relatives, and varying levels of social and political concern over the economic displacements that stem from

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39. ANNE-MARIE SLAUGHTER, A NEW WORLD ORDER (2004) [hereinafter SLAUGHTER, A NEW WORLD ORDER]; Kal Raustiala, *The Architecture of International Cooperation: Transgovernmental Networks and the Future of International Law*, 43 VA. J. INT'L L. 1, 10-22 (2002).

40. *See, e.g.*, Panel Report, *European Communities—Measures Affecting the Approval and Marketing of Biotech Products*, WT/DS291/R, WT/DS292/R, WT/DS293/R (Sept. 29, 2006) [hereinafter Panel Report, *E.C.—Biotech*].

consolidation of agriculture.[41] Resort to the WTO dispute resolution mechanism[42] effectively shifted that locus of decision from individual states to a centralized international bureaucracy. The expanding authority of the WTO is typically portrayed as a thickening of the legal-normative structures and a corresponding receding of politics. This formula—"more law, less politics"[43]—sharply contrasts with New Haven School thinking about the relationship between law and politics.

The WTO certainly has teeth. In a single decade it has become a primary actor in international law, and it has the power to impose significant costs on defectors. States disregard WTO decisions at their peril. Ad hoc WTO Panels and the Appellate Body have become the decisionmakers who, through their interpretation and construction of the WTO agreements, have begun to articulate a definitive global understanding of how risk should be tolerated or prevented. In the name of uniformity and facilitating international trade, the mantle of authoritative decision has shifted from the national or local decision processes that would formerly have resolved the disputes. Critics of this shift point to a democracy deficit.[44] They contend that the rising role of the WTO, coupled with the growing influence of transnational corporations both domestically and internationally, means that the key decisionmakers—and the states that use the WTO processes—are no longer democratically accountable to citizens.

Within the WTO process, this dispute takes a particular, stylized form. Rather than a naked contest between sovereign states, each attempting to force its vision of sustainability onto its trading partners in a globalizing economy, the struggle is couched in terms of "science," "rationality" and "precaution." However, this objectivist language is deceptive. The same regulatory decision about whether to permit import or production of GMOs, for example, can be cast as a measure pertaining to health and safety and morals, and thus

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41. *See, e.g.*, Judith Wise, *Hunger and Thieves: Anticipating the Impact of WTO Subsidies Reform on Land and Survival in Brazil*, 31 AM. INDIAN L. REV. (forthcoming 2007) (examining the pressure on indigenous land in Brazil resulting from the expansion of the export agriculture sector).

42. Understanding on Rules and Procedures Governing the Settlement of Disputes, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 2, Legal Instruments—Results of the Uruguay Round, 33 I.L.M. 1125, 1226 (1994) [hereinafter Dispute Settlement Understanding].

43. JOHN H. JACKSON, THE WORLD TRADING SYSTEM 109-11 (2d ed. 1997) (articulating the dichotomy between "rule oriented" and "power oriented" dispute resolution); Miquel Montañà i Mora, *A GATT with Teeth: Law Wins over Politics in the Resolution of International Trade Disputes*, 31 COLUM. J. TRANSNAT'L L. 103 (1993); Joost Pauwelyn, *The Transformation of World Trade*, 104 MICH. L. REV. 1, 6 (2005) (arguing that the WTO has insufficient participation or politics to sustain the high levels of discipline or law).

44. *See generally* ALFRED C. AMAN, JR., THE DEMOCRACY DEFICIT: TAMING GLOBALIZATION THROUGH LAW REFORM (2004) (arguing that decisions made by transnational actors are beyond the direct democratic control or influence of the publics that they impact); JOSEPH E. STIGLITZ, GLOBALIZATION AND ITS DISCONTENTS 18-22 (2002) (detailing how the IMF and the World Bank contribute to a democracy deficit); Benedict Kingsbury, Nico Krisch & Richard B. Stewart, *The Emergence of Global Administrative Law*, 68 LAW & CONTEMP. PROBS., Summer/Autumn 2005, at 15 (proposing global administrative space as a new approach to resolving the democratic deficit); Pauwelyn, *supra* note 43, at 6 (asserting that the WTO lacks popular support and input legitimacy). *But see* SLAUGHTER, A NEW WORLD ORDER, *supra* note 39, at 194-95 (observing that disaggregated transgovernmental networks are not inconsistent with democracy); Raustiala, *supra* note 39, at 10-11 (theorizing that transgovernmental networks will supplement rather than supplant liberal internationalism).

compatible with the 1994 General Agreement on Tariffs and Trade (GATT),[45] or as a non-tariff trade barrier inconsistent with the GATT.[46] The difference depends largely on the decisional stance and perspective of the viewer.[47] There is a wholly legitimate perspective from which each characterization is valid.

On the surface, the GMO dispute is a relatively mundane trade dispute over the trade of commodities. However, the conflict over the proper normative regulatory stance with regard to GMOs graphically illustrates the collision of different processes of authoritative decision and competing social preferences, each demanding recognition as the one true process. As such, this dispute is emblematic of a broader struggle over how to define values and goals in a shrinking, warming world, and over who will be the authoritative decisionmakers in that process. These are the questions that New Haven School thinkers had already begun exploring more than fifty years ago.

B. *Future Generations and Authoritative Decision*

One critical aspect of sustainable development is that it is intended to conserve the earth's resources for the benefit of future generations. Intergenerational equity requires that "each generation pass the planet on in no worse condition than it received it and provide equitable access to its resources and benefits."[48] As we consider authoritative decisionmaking, this imperative must find its way into the mix. This is a point where New Haven School ideas might usefully expand the dialogue. As early as the 1940s, Lasswell and McDougal were already proclaiming, "'We assume that there is today a world community in the fundamental sense that all peoples, whatever their location or function, are interdependent in achieving all the major values of our time.'"[49]

If we are to take sustainability seriously, authoritative decisionmakers must somehow include future generations as part of their calculus. International environmental law struggles with how to account for the interests of future generations and for the costs they will bear as they reap the results of risks sown in the past and the present. For example, Article 3(1) of

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45. General Agreement on Tariffs and Trade, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization [Marrakesh Agreement], Annex 1A, Legal Instruments—Results of the Uruguay Round, 33 I.L.M. 1125, 1154 (1994) [hereinafter GATT]. A good introduction to the WTO's decisions that impact environmental decisionmaking is available in LOUKA, *supra* note 9, at 383-423.

46. *See* Agreement on Technical Barriers to Trade pmbl., Apr. 15, 1994, Marrakesh Agreement, Annex 1A, Legal Instruments—Results of the Uruguay Round, vol. 27 (1994), http://www.wto.org/english/docs_e/legal_e/17-tbt.pdf (balancing the "[d]esir[e] . . . to ensure that technical regulations and standards . . . do not create unnecessary obstacles to international trade" with the "[r]ecogni[tion] that no country should be prevented from taking [technical and environmental] measures . . . at the levels it considers appropriate").

47. The operative words in the international discourse—"SPS measure," "trade barrier," "science" and "risk"—act more as labels describing the consequences of a decision rather than as explanatory factors accounting for that decision. The words alone cannot create irreducible spheres for regulatory activity nor can they articulate a bright line between the interpenetrating concepts of risk and precaution.

48. EDITH BROWN WEISS, IN FAIRNESS TO FUTURE GENERATIONS 24 (1989).

49. Myres S. McDougal, *The Law School of the Future*, 56 YALE L.J. 1345, 1352 (1947) (citation omitted).

the Framework Convention on Climate Change identifies as a basic principle that "[t]he Parties should protect the climate system for the benefit of present and future generations of humankind."[50] At the International Court of Justice, Judge Weeramantry's separate opinion in the *Maritime Delimitation in the Area between Greenland and Jan Mayen* (Denmark v. Norway),[51] his dissent in *Nuclear Tests 1995* (New Zealand v. France),[52] and his separate opinion in *Gabcikovo Nagymoros* (Hungary v. Slovakia),[53] explore the notion of the need to consider future generations as participants in the sustainable development project. Along the same lines, the Philippine Supreme Court recognized a cause of action on behalf of future generations.[54]

Despite the oft-repeated concern for intergenerational equity, that principle is typically viewed more as a moral duty towards future generations, rather than an imperative for transforming decisionmaking to include their voice by proxy. The New Haven School perspective that clarification of community goals necessarily involves assessing those goals across time may offer an answer to this challenge, and a means of expanding the decisionmakers to include a more direct voice for future generations.

IV. CHOOSING BETWEEN COMPETING VISIONS OF SUSTAINABLE DEVELOPMENT

As the complexity of environmental problems has mushroomed, and ambiguities inherent in the term sustainability have mounted, so too has controversy about the proper means of analysis. States tend to divide along a fault line of the methods by which regulatory policy should be focused to achieve sustainability. Where some states view precautionary analysis as an integral part of sustainable development,[55] others would use cost-benefit

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50. U.N. Framework Convention on Climate Change, *supra* note 20, art. 3, para. 1.

51. In this opinion, Judge Weeramantry referred to intergenerational equity, and specifically to "the concept of wise stewardship [of natural resources] . . . and their conservation for the benefit of future generations." Maritime Delimination in the Area between Greenland and Jan Mayen (Den. v. Nor.), 1993 I.C.J. 38, 241-43 (June 14) (separate opinion of Judge Weeramantry).

52. In his dissenting opinion in *Nuclear Tests 1995*, Judge Weeramantry characterized the issue before the court as raising "as no case before the court has done, the principle of intergenerational equity—an important and rapidly developing principle of contemporary environmental law." Request for an Examination of the Situation in Accordance with Paragraph 63 of the Court's Judgment of 20 December 1974 in the Nuclear Test Cases (New Zealand v. France), 1995 I.C.J. 288, 341 (Sept. 22) (dissenting opinion of Judge Weeramantry). He went on to note, "This case . . . raises in pointed form the possibility of damage to generations yet unborn." *Id.*

53. Case Concerning the Gabcikovo Nagymoros Project (Hung. v. Slovk.), 1997 I.C.J. 7, 110 (Sept. 27).

54. Oposa v. Fulgencio S. Factoran, Jr., G.R. No. 101083 (S.C., July 30, 1993), *available at* http://www.elaw.org/resources/text.asp?ID=278.

55. The precautionary principle was first articulated in the World Charter for Nature, G.A. Res. 7, ¶¶ 14-24, U.N. Doc. A/37/L.4 (Oct. 28, 1982). Today, various formulations of the precautionary principle can be found in many treaties. *See, e.g.*, Rio Declaration, *supra* note 15, Principle 15; Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks arts. 5-7, Aug. 4, 1995, 34 I.L.M. 1542, 1550-53 (1995); Organization of African Unity, Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa art. 4(3)(f), Jan. 30, 1991, 30 I.L.M. 773, 781 (1991); U.N. Framework Convention on Climate Change, *supra* note 20, art. 3.3; U.N. Conference on Environment and Development, Convention on Biological Diversity arts. 2, 6,

analysis[56] to balance sustainable development's competing imperatives. Thus, the two analyses vie to shape the ongoing constitutive process by which authoritative decision is created, maintained, and modified. They begin from different normative stances and proceed along divergent interpretive trajectories. As such, they reflect different framings of technology's social implications and different appraisals of the feasibility of control.[57] To characterize a choice between these two approaches as a choice between policy and science, however, creates a false dichotomy. Instead, each approach represents a particular political view of how best to resolve the challenges posed by sustainable development.

A great insight of New Haven School thinking is the embrace of context and politics as an inherent part, rather than a corruption of, the legal process. Different communities could reach different conclusions about law based on their unique political circumstances and as long as the results did not compromise the goal of human dignity, the different results would be legitimate as authoritative decisions. Thus, for New Haven School thinkers, it would not be a problem that advocates of the two approaches line up largely along national lines—with Americans as the primary advocates of cost-benefit analysis and Europeans proposing precautionary regulation instead.[58] The fact that the differing approaches reflect different assessments of the power of science and scientific inquiry to reveal the truth, with Europeans far more skeptical than Americans about the scientific endeavor, would simply be a reflection of differing community values and priorities.[59] New Haven School ideas would recognize that both approaches draw on the authority of different communities and embody different constitutive decisions about the acceptability of assuming risk in light of scientific uncertainty. These differences lead inevitably to public order decisions embodying the respective processes for prioritizing economic and environmental values.

The problem is that the world has changed, and the boundaries of authoritative decision are no longer clear. Where states formerly would have pursued their own vision and balance, a world of ever denser interconnection means that the two perspectives, even if wholly valid expressions of community preference, cannot readily co-exist. As decisionmaking centralizes, the struggle over which approach will attain dominance becomes

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June 5, 1992, 31 I.L.M. 818, 822 (1992); Stockholm Convention on Implementing International Action on Certain Persistent Organic Pollutants arts. 1, 8.9, May 22, 2001, 40 I.L.M. 532 (2001).

56. *See* Jonathan L. Hafetz, *Fostering Protection of the Marine Environment and Economic Development: Article 121(3) of the Third Law of the Sea Convention*, 15 AM. U. INT'L L. REV. 583 (2000). *See generally* DAVID W. PEARCE, SUSTAINABLE DEVELOPMENT AND COST BENEFIT ANALYSIS (1988) (arguing that environmental costs can be valued and included in cost-benefit analysis in order to achieve sustainable development.).

57. McDougal, Lasswell & Reisman, *Prologue*, *supra* note 8, at 206 (advising that explicit comparison of rival systems of public order should be done in terms of their "consequences for preferred values").

58. *See, e.g.*, Samuel Loewenberg, *Precaution Is for Europeans*, N.Y. TIMES, May 18, 2003, § 4 (Week in Review), at 14. The rest of the world has lined up in either the American or the European camps, depending as much on primary trading alliances as on domestic proclivities.

59. Neither the European nor American view, as I have labeled them, is uncontested within its respective domestic sphere, and so I do not mean to discount domestic critics.

increasingly contentious.[60] This contest takes place against a backdrop of a world that not only embraces sustainable development, but is also in the throes of unparalleled industrial growth and integration. As such, it is one salvo in a broader struggle for dominance between those who view the world through the lens of the market and its efficiency, and those who would order society according to other values.[61]

The WTO finds itself having to choose between two normative strategies that diverge sharply and prioritize strikingly different social goals.[62] At stake is not merely the definition of just and proper rules of legal interpretation for a specific dispute, but also the nature, power, and function of governments in relation to their citizens and the broader world in which they exist.[63] It may not be too grand a characterization to view this contest as a competition between "aspiring systems of world public order,"[64] with an efficiency-based, utility-maximizing perspective that seeks to detach itself from its contextual moorings in pursuit of an abstract ideal of "science" and "rationality" engaged in a power struggle with a contextual, precautionary process, steeped in complexity and indeterminacy. New Haven School thinking, which combines a pursuit of "science" with an embrace of context might provide a new way of approaching this struggle.[65]

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60. For a discussion about how law is an ongoing process situated squarely within a larger social context, see Myres McDougal, Howard Lasswell & W. Michael Reisman, *World Constitutive Process*, *supra* note 29, at 404.

61. There are very real differences between those who believe that globalized free markets will solve most human problems and those who view those same markets as the source of many human problems. For differing perspectives on this big-picture question, see generally JOSEPH E. STIGLITZ, GLOBALIZATION AND ITS DISCONTENTS (2002) (exploring the inequities inherent to economic globalization); and THOMAS L. FRIEDMAN, THE LEXUS AND THE OLIVE TREE (2000) (providing an optimistic vision of how markets shape globalization).

62. *See* Rebecca Bratspies, *Trail Smelter's (semi)Precautionary Legacy*, *in* TRANSBOUNDARY HARM, *supra* note 33, at 153, 159-62. A major criticism of cost-benefit analysis is that it typically does not consider the social distribution of costs and benefits. Environmental risks tend to be borne disproportionately by a society's most vulnerable populations—the economically and politically disadvantaged, and frequently people of color—who are also less likely to share in the benefits that make up the other side of the cost-benefit calculus. *See generally* CLIFFORD RECHTSCHAFFEN & EILEEN GAUNA, ENVIRONMENTAL JUSTICE: LAW, POLICY, AND REGULATION (2002) (surveying and explaining the scholarly literature on environmental justice). What is often portrayed as an analytical preference for redistribution through private contracting rather than social planning operates—systematically and predictably—to preclude certain segments of the population from the promises of Coasean bargaining.

63. This struggle over regulatory frameworks reveals the poverty of the world view that conflates authority with power, and then compounds its error by defining power wholly with reference to coercive ability. *See, e.g.*, GOLDSMITH & POSNER, *supra* note 13, at 3-6. *See generally* ROBERT KAGAN, OF PARADISE AND POWER: AMERICAN AND EUROPE IN THE NEW WORLD ORDER (2004) (offering a vision of power based wholly on military might). *But see* Rebecca M. Bratspies, *This Too Shall Pass: A Response to Kagan's* Power and Weakness, 4 GERMAN L.J. 889 (2003), *available at* http://www.germanlawjournal.org/pdf/Vol04No09/PDF_Vol_04_No_09_889-899_SI_Bratspies.pdf (last visited Apr. 27, 2007). Such a view must be unacceptable to those who look for justice and democracy under law.

64. McDougal, *The Impact of International Law*, *supra* note 5, at 26. Although McDougal wrote this phrase to refer to the Cold War, its use in this context seems apt, as the struggle takes place against the backdrop of the ideology of sovereignty.

65. In this brief Article, I can do no more than introduce the competing claims and suggest some of the ways that New Haven School thinking might provide some fruitful lines of inquiry. Actually pursuing those inquiries and drawing conclusions will have to wait for another day.

V. THE ROLE OF SCIENCE

A useful insight from McDougal, Lasswell and the other New Haven School thinkers is that law and policy are inextricably intertwined and that any attempt to separate law from policy is itself a policy argument advocating, albeit implicitly, for maintaining the status quo.[66] While law may indeed be policy, policy is not science. As will be described below, cost-benefit and precautionary analyses go beyond the production of data to interpretations of their implications for the world—and thus leave the realm of science for that of normative judgments and relative assessments. Science can provide information, but a decision to regulate is necessarily political, as it entails assessing acceptability—both of risks and of the costs imposed to avoid or mitigate those risks. Science has little to say about what risks are acceptable to a society, nor about which configuration of law, science, politics, and economics should be adopted when their imperatives conflict.

The School's frequent rhetoric about science seems to reflect an intellectual yearning for a discipline that transcends politics, perhaps to replace the shattered image of law that the New Haven School and the legal realists wrested from that privileged position.[67] Earlier writings, in particular, emphasized scientific process and thought. Indeed, this tendency is a weakness to which New Haven School writing has been prone—the belief that enough information will render decisions value-free. No amount of wishing, however, can give legal thinkers the legal equivalent of Archimedes' proverbial place to stand from which he would move the world—a value-neutral decisional process.[68] Nor will an analytical method, no matter how detailed, solve problems by itself.

Science provides vital information for decisionmaking, but the processes of assessing and weighing scientific information are deeply political and contextual. Indeed, in the environmental context, a furious debate over the difference between science and science policy has repeatedly underscored this observation.[69] Science involves testable empirical claims, while science policy applies the insights of science in a political and social context marked by

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66. Of course, a similar critique can be leveled at arguments for change but, in the latter case, the speculations are more easily revealed for what they are and assessed on that basis. The speculation inherent in arguments that favor the status quo is much more difficult to identify—again, a valuable lesson from the New Haven School. *See, e.g.*, Suzuki, *supra* note 11, at 2.

67. The legal realists also turned to the social sciences, but not in the systematic way that Lasswell and McDougal advocated. *See* Harold D. Lasswell & Myres S. McDougal, *The Relation of Law to Social Process: Trends in Theories About Law*, 37 U. PITT. L. REV. 465, 467 (1976). Since Lasswell was a social scientist by training, their collaboration had from the beginning a stronger grounding in social science methodology than that of most other legal realists.

68. I say this without any intention of rehashing the constructivist/objectivist science wars of the late 1980s. Regardless of how one views the data generated by the scientific process, the interpretation of that data to determine appropriate policies for governmental action is a political rather than scientific process.

69. *See, e.g.*, RESCUING SCIENCE FROM POLITICS: REGULATION AND THE DISTORTION OF SCIENTIFIC RESEARCH (Wendy Wagner & Rena Steinzor eds., 2006) (exploring the intricate interconnections between science and policy, and showing that most regulatory decisions involve a mixture of both scientific and policy-based rationales); Wendy E. Wagner, *The Science Charade in Toxic Risk Regulation*, 95 COLUM. L. REV. 1613, 1639-40 (1995) (describing how decisionmakers cloak controversial policy decisions in the veneer of science).

contested visions of the values that should guide its application.[70] Scientific knowledge may lead two equally competent observers to quite different conclusions about "correct" policy choices.[71]

As a result, scientific information cannot, itself, generate determinate answers to policy questions. When an issue is both politically and scientifically contentious, it is possible for multiple perspectives to muster a compelling array of scientific support for their diverse perspectives. Choosing between them is an act of politics. As such, it is not a process driven by rational analysis or expert judgment, but by public debate about competing interests and values.[72] Indeed Lasswell and McDougal themselves cautioned that overstating the virtues of scientific modes of thought and investigation as a solution to policy questions does a disservice to science and to policy.[73] As Harold Lasswell noted, this process produces a politically, economically, and emotionally acceptable solution rather than the illusive "rationally best" solution.[74] In part, this is because the range of scientific perspectives is sufficiently rich and diverse to support conflicting political and public values. When confronted with distinctly different scientific frames of reference offering irreconcilable information about nature, resort to science detached from context cannot absolve authoritative decisionmakers from making challenging political choices.

McDougal and Lasswell attempted to establish the social sciences as an invaluable source of normative guidance in legal decisionmaking. However, they were also well aware that their project could dwindle into merely borrowing the luster of science to give the impression that a legal critique was "scientific[ally]" informed.[75] We see the manifestations of this risk in the cost-benefit[76] versus precautionary debate. The trappings of a scientific process,

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70. *See* Thomas O. McGarity, *Resisting Regulation with Blue Ribbon Panels*, 33 FORDHAM URB. L.J. 1157 (2006) (noting that science is invariably contestable, and that there is a strong incentive to present scientific information to regulators in a fashion that advances a preferred regulatory outcome).

71. For example, several recent reports identify regional, ecosystem-based management as the answer to dwindling fish stocks and threatened marine environments. Such pronouncements are wrapped self-assuredly in an aura of scientific invincibility. However, these pronouncements all beg the question of how to identify the relevant region or ecosystem in which management should take place. The Gulf of Maine and the Southern Ocean (to name two examples) are each susceptible to multiple regional definitions depending on the mapping technique employed, the values considered in the line-drawing process, and the interests to be maximized or minimized. Lewis M. Alexander, *Regional Arrangements in the Oceans*, 71 AM. J. INT'L L. 84 (1977). This multiplicity of possible regions exists even though scientific information is used as the basis for decisionmaking. It is the choice to rely on particular pieces of scientific information and not others (rather than the data itself) that ultimately shapes the zone within which regional, ecosystem-based management will occur.

72. Daniel Sarewitz, *Science and Environmental Policy: An Excess of Objectivity*, *in* THE EARTH SCIENCES, PHILOSOPHY, AND THE CLAIMS OF COMMUNITY (Robert Frodeman ed., 2000).

73. Lasswell & McDougal, *Criteria for a Theory About Law*, *supra* note 32, at 373-74.

74. HAROLD D. LASSWELL, PSYCHOPATHOLOGY AND POLITICS 184-85 (Phoenix ed. 1977).

75. *See* Anthony Kronman, *Jurisprudential Responses to Legal Realism*, 73 CORNELL L. REV. 335, 337-39 (1988).

76. Cost-benefit analysis figured prominently in President Reagan's Exec. Order 12,291, 3 C.F.R. § 127 (1981), *revoked by* Exec. Order No. 12,866, 3 C.F.R. § 638 (1993), *reprinted in* 5 U.S.C. § 601 (1994). This order was part of the Reagan Administration's broader anti-regulatory agenda, which was designed to dismantle the administrative state in the belief that private ordering was preferable to administrative regulation. *See* Rebecca M. Bratspies, *Conflicting Imperatives*, 16 KAN. J. L. & PUB. POL'Y (forthcoming 2007). President Clinton revoked Executive Order 12,291 but left the use of cost-benefit analysis largely intact. *See* Exec. Order No. 12,866, *supra*; Richard H. Pildes & Cass R. Sunstein, *Reinventing the Regulatory State*, 62 U. CHI. L. REV. 1, 6-7 (1995).

particularly the ability to reduce issues to numbers and to run complex equations, can be used to obscure contingent and value-driven decisions under an enveloping cloak of assumed objectivity.[77] A veneer of legitimacy created by frequent resort to numbers and equations gives the illusion of detached, logical, and perhaps most important, value-neutral methodology.[78] Such a characterization overstates the possibilities of cost-benefit analysis by ignoring its intellectual boundaries.

To some extent, New Haven School writings embrace an enlightenment confidence in the power of science to provide concrete and neutral information. The most fundamental tenets of modern science involve the acknowledgement of chaos, uncertainty, and indeterminacy. A seeming unwillingness to grapple with the contingent nature of science itself is one of the weaknesses of early New Haven School writings that it would be a shame to see writ large across the field of international environmental law. The notion that "[a]ll the factors which may affect the outcome of a decision are to be identified and weighed"[79] rings false to the contemporary ear. While systematic analysis is the root of sound policy, over-reliance on the neutrality of scientific processes can become a license to polemics. It is important not to assume the attainability of an unrealistic state of detachment because the pursuit of such a state will warp the perspective of the decisionmaker even further than do the personal factors that already shape their perspectives.

New Haven School thinking thus straddles two opposing tendencies with regard to its conception of science. Science is a tool to inform legal analysis but is also sometimes offered as the goal towards which legal analysis should be striving. These competing visions of science find their echo in the international community's struggle to reconcile competing conceptual frames for generating and evaluating scientific data. While the New Haven School's commitment to empiricism, coupled with a deep skepticism about objectivity, offers an important starting point for analysis, the current struggle between cost-benefit analysis and precaution in the environmental arena mirrors this internal conflict within New Haven School thinking.

How New Haven School ideas might inform the interaction between these competing processes for authoritative decisionmaking is a rich area of further study. Using New Haven School ideas as a lens for exploring this dispute highlights the ways that science rhetoric is used to shape decisionmaking processes. At the same time, examining this dispute sharpens the distinctions between the differing strands of science talk within the New Haven School.

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77. For a detailed breakdown of how purportedly scientific numbers about costs and benefits have been used to distort regulatory discussions, see Lisa Heinzerling, *Regulatory Costs of Mythic Proportions*, 107 YALE L.J. 1981 (1998).

78. David Driesen demonstrates that cost-benefit analysis is inherently value-laden both on a theoretical and "as applied" basis. *See* David M. Driesen, *Is Cost-Benefit Analysis Neutral?*, 77 COLO. L. REV. 335 (2006); David Driesen, *The Societal Cost of Environmental Regulation: Beyond Administrative Cost-Benefit Analysis*, 24 ECOLOGY L.Q. 545 (1997).

79. Frederick Samson Tipson, *The Lasswell-McDougal Enterprise: Toward a World Public Order of Human Dignity*, 14 VA. J. INT'L L. 535, 573 (1974).

A. *Cost Benefit Analysis and Precaution*

One approach for trying to achieve rationality in the policymaking process is to treat science as a neutral space from which politics is strictly excluded. An alternative vision tries to embed scientific information firmly within political processes. The former approach finds its expression in the U.S. version of cost-benefit analysis, the latter in the European policy of precaution.

1. *Cost-Benefit Analysis*

Cost-benefit analysis as developed and promoted in the United States as a means of risk assessment hearkens back to the strain of New Haven School thinking that treats scientific rationality as the legal policy goal to be achieved through matrices and analytical processes. Operating from the central normative contention that regulation can best perform its essential function for the community when it distances itself from overt social policy,[80] cost-benefit analysis seeks to use science to minimize the political character of the legal decisionmaking process.[81]

A side-effect of this quest to import scientific precision into the legal system is that cost-benefit analyses can justify deferring difficult and potentially costly decisions on the ground that scientific evidence of their necessity is wanting. Lasswell and McDougal presciently cautioned that attempts to separate law and policy too often wind up as an implicit defense of the status quo. Like the U.S. approach to cost-benefit analysis, this aspect of the New Haven School's thinking about science embodies the contradiction between a quest for certainty and the embrace of policy in legal decisionmaking. Thus, cost-benefit analysis can be situated directly within the internal tensions in New Haven School thinking between the recognition that

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80. One of the more often cited discussions advocating risk-based or cost-benefit analysis appears in JOHN D. GRAHAM & JONATHAN BAERT WIENER, RISK VERSUS RISK: TRADEOFFS IN PROTECTING HEALTH AND THE ENVIRONMENT (1995). A former Harvard professor, Graham has spent the last few years implementing his version of risk analysis through his role as Administrator of the Office of Information and Regulatory Affairs. Critics have pointed out that his version of cost-benefit analysis systematically overstates the costs to industry of regulation while systematically devaluing the benefits derived from regulation. *See, e.g.*, FRANK ACKERMAN & LISA HEINZERLING, PRICELESS: ON KNOWING THE PRICE OF EVERYTHING AND THE VALUE OF NOTHING, 35-40 (2004); Frank Ackerman, Lisa Heinzerling & Rachel Massey, *Applying Cost-Benefit to Past Decisions: Was Environmental Protection* Ever *a Good Idea?*, 57 ADMIN. L. REV. 155 (2005); Mark Sagoff, *Can Environmentalists Be Liberals?: Jurisprudential Foundations of Environmentalism*, 16 ENVTL. L. 775 (1986); FRANK CLEMENTE & MELISSA LUTTRELL, PUBLIC CITIZEN'S COMMENTS ON OMB'S 2001 DRAFT REPORT TO CONGRESS ON THE COSTS AND BENEFITS OF FEDERAL REGULATIONS (May 2, 2001), http://www.citizen.org/congress/regulations/bush_admin/articles/cfm?ID=6691 (characterizing the entire report as a "monumental, complex waste of time").

81. In doing so, cost-benefit theorists hearken back to Wechsler's search for "neutral principles" and are subject to the same critique. Herbert Wechsler, *Toward Neutral Principles of Constitutional Law*, 73 HARV. L. REV. 1 (1959); *see also* M.P. Golding, *Principled Decision-making and the Supreme Court*, 63 COLUM. L. REV. 35, 55 (1963); Arthur Selwyn Miller, *Notes on the Concept of the "Living" Constitution*, 31 GEO. WASH. L. REV. 881, 904 (1963) (rejecting the possibility of identifying neutral principles for choosing between competing values). For a thoroughly reasoned rejection of the notion that cost-benefit analysis is "neutral," see generally ACKERMAN & HEINZERLING, *supra* note 81 (describing and rejecting the many value assumptions built into cost-benefit analysis.)

law is about policy and the school's elaborate matrices which are clearly intended to make the process of legal analysis "scientific."[82]

2. *Precaution*

Precautionary analysis is generally offered as an antidote and antonym to cost-benefit analysis. At the most basic level, the precautionary principle stands for the "common sense idea that public and private interests should act to prevent harm."[83] That means that decision makers must not wait for unambiguous proof of a cause and effect relationship between a substance, process, or activity and an environmental harm before acting to reduce or eliminate the harm. Thus, precautionary analysis to some extent responds to the New Haven School concern about valorizing the status quo.

A precautionary approach implies that decisions concerning the possibly unacceptable but as-yet-unknown effects of regulatory choices cannot be made once and for all, but must always be viewed as somewhat preliminary, open to revisions based on social changes or new relevant information.[84] Scientific information is certainly important to precautionary analysis, but it is only one tool among many rather than the sole consideration. As such, precaution is not so much a rule as a process—it serves as a guide for the process of interpretation and norm formation towards sustainability.[85] It is perhaps best perceived as "a meta-juridical principle which provides a conduit between legal and non-legal forms of normativity,"[86] a description that raises some parallels to New Haven School ideas about interdisciplinarity and its role in mediating the relationship between law and policy.

B. *The Relationship Between the Two Approaches*

This question of how to choose between precautionary and cost-benefit approaches continues to surface in international law. While New Haven

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82. Lasswell and McDougal would never have fully embraced the neutrality assumptions that accompany cost-benefit analysis because they viewed the social sciences as a "collection of conceptual tools" for making law's value explicit. NEIL DUXBURY, PATTERNS OF AMERICAN JURISPRUDENCE 175 (1995).

83. Phillipe H. Martin, *If You Don't Know How To Fix It, Please Stop Breaking It! The Precautionary Principle and Climate Change*, 2 FOUNDATIONS OF SCI. 263, 264 (1997) (citing INTERPRETING THE PRECAUTIONARY PRINCIPLE (Tim O'Riordan et al. eds., 1997)).

84. As noted earlier, the most familiar version of the precautionary principle appears in Principle 15 of the Rio Declaration from the 1992 United Nations Conference of the Environment and Development. However, general agreement dates the first clear articulations of the precautionary principle from the 1972 U.N. Conference on the Human Environment, *see supra* note 1, and the 1982 World Charter for Nature. In particular, the World Charter for Nature provided: "Activities which are likely to pose a significant risk to nature shall be preceded by an exhaustive examination; their proponents shall demonstrate that expected benefits outweigh potential damage to nature, and where potential adverse effects are not fully understood, the activities should not proceed." World Charter for Nature, G.A. Res. 37/7, ¶ 11(b), U.N. Doc. A/RES/37/7 (Oct. 28, 1982).

85. *See* James Cameron, *The Precautionary Principle in International Law*, *in* REINTERPRETING THE PRECAUTIONARY PRINCIPLE 13 (Tim O'Riordan et al. eds., 2001).

86. Jaye Ellis, *Overexploitation of a Valuable Resource? New Literature on the Precautionary Principle*, 17 EUR. J. INT'L L. 445, 458 (2006).

School ideas help highlight the different contexts that produce these different visions, they are less useful in navigating between the different approaches.

Notwithstanding vigorous domestic debate,[87] the United States government has embraced cost-benefit analysis full on and is seeking to persuade, cajole, and/or force the rest of the world to employ this analysis in a host of disparate contexts ranging from food safety[88] to global warming.[89] U.S. politicians frequently use their platforms before international organizations to advocate the adoption of this cost-benefit analysis process, thus underscoring its overtly political nature even as the discussion hides behind the seemingly neutral mantle of promoting science.[90]

It is a tough sell. In the wake of environmental catastrophes including Bhopal, Exxon-Valdez, and Chernobyl, precaution has become a significant decisional concept in international environmental law. Indeed, the precautionary principle is often portrayed by its proponents as a rule of customary international law[91]—a characterization heavily disputed by its opponents. Regardless of the approach's precise status, climate change, with its looming, potentially catastrophic unknowns, seems tailor-made for precautionary analysis. So too, the spread of GMOs, where there is an unquantifiable risk of permanent devastating harm that can only be detected with certainty after the fact. Precaution's growing influence can be attributed, at least in part, to the contingent nature of harms in a global economy.[92]

As precautionary decisionmaking has gathered steam, a backlash led by scholars and officials in the United States has emerged.[93] Critics characterize

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87. The scholarly voices weighing in on this topic are far too numerous to list here. For an exploration of some of the issues embedded in this debate, from those favorably disposed to cost-benefit analysis, see, for example, RICHARD A. POSNER, CATASTROPHE: RISK AND RESPONSE (2004) (embracing a modest form of precaution); James K. Boyce, *Let Them Eat Risk? Wealth, Rights, and Disaster Vulnerability*, 24 DISASTERS 254 (2000) (exploring how and whether risks are included in a cost-benefit analysis); Matthew D. Adler & Eric A. Posner, *Rethinking Cost-Benefit Analysis*, 109 YALE L.J. 165 (1999) (critiquing cost-benefit analysis); Kenneth J. Arrow et al., *Is There a Role for Benefit-Cost Analysis in Environmental, Health, and Safety Regulation?*, 272 SCI. 221 (1996) (suggesting that cost-benefit analysis is useful but ought not be the sole ground for decisionmaking); Cass R. Sunstein, *Cognition and Cost-Benefit Analysis*, 29 J. LEGAL STUD. 1059 (2000) (grounding a defense of cost-benefit analysis in cognitive psychology).

88. *See, e.g.*, Panel Report, *E.C.—Biotech*, *supra* note 40; Appellate Body Report, *European Communities—Measures Concerning Meat and Meat Products*, WT/DS26/AB/R, WT/DS48/AB/R (Jan. 16, 1998).

89. *See, e.g.*, *Efforts to Influence Science Policy: Hearing Before the Subcommittee on Investigation and Oversight*, 110th Cong. (2007) (testimony of Dr. James McCarthy, Professor, Harvard University); Andrew C. Revkin, *Bush Aide Edited Climate Reports*, N.Y. TIMES, June 8, 2005, at A1.

90. Damian Carrington, *Albright Marries Science and Diplomacy*, BBC NEWS, Feb. 22, 2000, http://news.bbc.co/1/hi/sci/tech/specials/washington_2000/652230.stm (describing Madeline Albright's February 2000 plenary address to the American Association for the Advancement of Science which emphasized the close coupling of science and politics).

91. ARIE TROUWBORST, EVOLUTION AND STATUS OF THE PRECAUTIONARY PRINCIPLE IN INTERNATIONAL LAW 260-84 (2002). *But see* Ellis, *supra* note 86, at 447-50 (expressing the view that debate over the status of the precautionary principle as customary law is a sidelight that does not affect the principle's broader application and influence).

92. *See* Jon van Dyke, *The Evolution and International Acceptance of the Precautionary Principle*, *in* BRINGING NEW LAW TO OCEAN WATERS 357 (David D. Caron & Harry N. Scheiber eds., 2004).

93. *See, e.g.*, Cass R. Sunstein, *Beyond the Precautionary Principle*, 151 U. PENN. L. REV. 1003 (2003); Jonathan B. Wiener, *Whose Precaution After All? A Comment on the Comparison and Evolution of Risk Regulatory Systems*, 13 DUKE J. COMP. & INT'L L. 207 (2003).

the precautionary principle as too indeterminate and no more meaningful than saying "take care"[94] or "better safe than sorry,"[95] and they emphasize confusion about the core meaning of the term.[96] Indeed, at least one U.S. official has characterized the precautionary principle as "a mythical concept, perhaps like a unicorn."[97] The ensuing ambiguity, it is claimed, permits political concerns rather than science to drive regulatory decisions.[98] While from a New Haven School perspective this attempt to separate law from policy makes no sense, Frank Garcia points out that this issue of allowing political concerns too much sway over substantive decisions has a particular resonance in a trade context because opposition to politicization (in the form of disguised protectionism) is a core value of the trade system.[99]

Critics also decry the precautionary principle as imposing unnecessary costs to address remote and improbable harms. The basis for this critique is obvious. Precautionary regulation restricts human actions and imposes costs that cannot be grounded in unambiguous scientific evidence. As such, critics compare it unfavorably with quantitative risk assessment which rarely permits regulation without scientific evidence of a "significant risk[]."[100] Typically motivated by the assumption that economic expansion and technological innovation increase overall social welfare, these critics perceive the precautionary principle as an unwelcome and technically unsound deviation from science-based regulation, and often perceive it to be little more than a non-tariff trade barrier in disguise.[101]

Applying New Haven School jurisprudential theories to assess the balance that should be struck between demands for cost-benefit or precautionary analyses in the international arena means walking an uneasy line. On the one hand, American liberal democratic values are the ideological backdrop for Lasswell and McDougal's jurisprudence. Their universalization of the American perspective finds its echo in a parallel aspect of the push to force adoption of cost-benefit analysis through the WTO. Yet that process's

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94. *See, e.g.*, Christopher D. Stone, *Is There a Precautionary Principle?*, 31 ENVTL. L. REP. 10790, 10792 (2001).

95. Frank Cross, *Paradoxical Perils of the Precautionary Principle*, 53 WASH. & LEE L. REV. 851, 851 (1996).

96. *See, e.g.*, Daniel Bodansky, *Deconstructing the Precautionary Principle*, *in* BRINGING NEW LAW TO OCEAN WATERS, *supra* note 92, at 381.

97. *See* John D. Graham, Administrator, Off. of Info. & Reg. Aff., The Role of Precaution in Risk Assessment and Management: An American's View, Address Before the European Commission (Jan. 11-12, 2002), *available at* http://www.whitehouse.gov/omb/inforeg/eu_speech.html.

98. Cass R. Sunstein, *Irreversible and Catastrophic*, 91 CORNELL L. REV. 841, 853 (2006) (describing the precautionary principle as incoherent and "stand[ing] as an obstacle to regulation and nonregulation, and to everything in between") For a critique of this viewpoint, see Ellis, *supra* note 86.

99. E-mail from Frank Garcia, Professor, Boston College Law School, to the Rebecca M. Bratspies, Associate Professor, CUNY School of Law (Mar. 6, 2007, 21:02 EST) (on file with author).

100. *See* Cross, *supra* note 95, at 923.

101. *See* Lawrence A. Kogan, *Exporting Precaution: How Europe's Risk-Free Regulatory Agenda Threatens American Free Enterprise* (2005), *available at* http://www.wlf.org/upload/110405MONOKogan.pdf. The European Union, by contrast, has embraced the precautionary principle. *See Communication from the Commission on the Precautionary Principle*, COM (2000) 1 (Feb. 2, 2000), *available at* http://europa.eu.int/comm/dgs/health_consumer/library/pub/pub07_en.pdf; Treaty Establishing Constitution for Europe art. III-233, Oct. 29, 2004, 2004 O.J. (C 310) 1, *available at* http://europa.eu.int/constitution/en/ptoc46_en.htm (enshrining precaution as a constitutional principle).

embrace of scientific neutrality[102] divorced from normative values seems to contradict a central New Haven School tenet—that law and policy are deeply interrelated—and flies in the face of the unabashedly value-laden form of inquiry they advanced.

C. *Exploring the Critiques Through a New Haven School Lens*

The point of departure between cost-benefit analysis and precaution is how each accounts for the many uncertainties embedded in complex environmental questions and their possible solutions. Uncertainties about the scale or even the very existence of a problem, or about the viability of a solution,[103] lead the two analytical approaches in widely divergent directions, with precautionary advocates willing to act despite scientific uncertainty about harm, while risk-based assessment advocates view preventive or palliative actions as illegitimate unless grounded in concrete scientific determinations of harm. The two approaches thus vary widely in the room they offer decisionmakers to maneuver based on judgments of how to best approach unknowns and uncertainties. For all of the New Haven School's rhetoric about science, its writings are surprisingly silent about scientific uncertainty. There seems to be an assumption that scientific processes will increase useful information upon which decisions can be made rather than generate further uncertainty.

At the highest level of abstraction, precautionary and cost-benefit analysis converge, with the primary difference being one of emphasis rather than kind. After all, there is not much difference between pronouncements that decisionmakers must fully assess all costs and benefits before permitting actions, and requiring that those same decisionmakers employ a precautionary approach.[104] Indeed, cost-benefit analysis figures prominently in the most

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102. A host of commentators have demonstrated the structural biases inherent to cost-benefit analysis. *See* ACKERMAN & HEINZERLING, *supra* note 80, at 35-40; Lisa Heinzerling, *Environmental Law and the Present Future*, 87 GEO. L.J. 2025, 2028 (1999); Thomas O. McGarity, *A Cost-Benefit State*, 50 ADMIN. L. REV. 7, 71-72 (1998) (citing Douglas E. MacLean, *Comparing Values in Environmental Policies: Moral Issues and Moral Arguments*, *in* VALUING HEALTH RISKS, COSTS, AND BENEFITS FOR ENVIRONMENTAL DECISION MAKING 83, 95 (P. Brett Hammond & Rob Coppock eds., 1990)). Laurence Tribe has characterized cost-benefit analysis as offering "illusory precision and the pretended neutrality of a pseudo-scientific calculus." Laurence H. Tribe, *Seven Deadly Sins of Straining the Constitution Through a Pseudo-Scientific Sieve*, 36 HASTINGS L.J. 155 (1984).

103. There are additional levels of uncertainty when one also considers the indeterminacy created because of the evolutionary nature of complex systems and the unpredictability of their response to human intervention.

104. Although I use the terms "precautionary approach" and "the precautionary principle" interchangeably, I am not unaware that some have suggested that there are important nuances separating the precautionary principle from a precautionary approach. *See, e.g.*, FRANCISCO ORREGO VICUÑA, THE CHANGING INTERNATIONAL LAW OF HIGH SEAS FISHERIES 157 (1999). Indeed, three of the separate opinions issued in the Southern Bluefin Tuna Cases echoed this idea, suggesting that a precautionary approach was more flexible than the precautionary principle. *See* Southern Bluefin Tuna (N.Z. & Austl. v. Japan), Order Granting Requests for Provisional Measures, 3 Int'l Trib. L. of the Sea Rep. 280, 305 (Aug. 27, 1999) (separate opinion of Judge Laing); *id.* at 316 (separate opinion of Judge Treves); *id.* at 320 (separate opinion of Judge Ad Hoc Shearer). Others roundly reject this characterization, arguing that a precautionary approach and the precautionary principle are synonymous. TROUWBORST, *supra* note **Error! Bookmark not defined.**, at 3-6 (pointing out that many international agreements use the terms interchangeably). The debate over this distinction is beyond the scope of this Article.

heralded statement of the precautionary principle[105]—Principle 15 of the Rio Declaration—which states:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.[106]

As always, the devil is in the details. Cost-benefit analysis ideally consists of identifying every cost and every benefit; reducing them all to the same approximate unit of measure; and then comparing costs and benefits. As such, it seems in line with the New Haven School call to explore "all available knowledge and probabilities and all possible alternatives"[107] before making a decision. In the abstract such an approach holds some intellectual appeal, but to do it properly requires an unrealistically exhaustive analysis and an immense commitment of resources. And, of course, the problem of uncertainty remains.

When confronting well-defined or familiar risks, most decisionmakers are relatively confident in their ability to make an assessment and to decide accordingly. Other situations pose novel or unstructured risks—risks whose predominant characteristic is uncertainty.[108] In such situations, there is no clear sense of the probability that a risk will manifest or the magnitude of harm that the risk will impose on society. It is with regard to these latter risks that precaution and cost-benefit analysis struggle for dominance. At the margins, and indeed it is at the margins that these approaches differ most markedly, precautionary analysis errs on the side of over-regulation, even at the risk of suppressing useful activity. By contrast, cost-benefit analysis creates a systematic bias towards preserving the status quo—the costs of change are often more readily calculable than are the disperse and hard-to-quantify benefits of a proposed regulation.[109]

Again in the abstract, precautionary and cost-benefit analysis both agree that the function of regulation is to ensure the costs imposed by social activity, including environmental costs, do not outweigh the benefits. However, once uncertainty enters the mix, the two approaches differ sharply, reflecting different conceptions of the proper role of regulation, and different perspectives on the ramifications and consequences that flow from gaps in the

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105. *See* Andy Stirling, *The Precautionary Principle in Science and Technology*, *in* REINTERPRETING THE PRECAUTIONARY PRINCIPLE, *supra* note 85, at 61; Malcolm MacGarvin, *Science, Precaution, Facts and Values*, *in* REINTERPRETING THE PRECAUTIONARY PRINCIPLE, *supra* note **Error! Bookmark not defined.**, at 35, 49 (claiming that cost-benefit analysis is a narrow subset of precautionary analysis that provides less complete information about risks and that elides the ambiguity inherent in scientific analysis of events in complex systems).

106. Rio Declaration, *supra* note 15, Principle 15.

107. Tipson, *supra* note 79, at 574.

108. Ulrich Beck introduced the idea of a "risk society." ULRICH BECK, RISK SOCIETY: TOWARDS A NEW MODERNITY (Mark A. Ritter trans., 5th ed. 2004); ULRICH BECK, ECOLOGICAL ENLIGHTENMENT: ESSAYS ON THE POLITICS OF THE RISK SOCIETY (Mark A. Ritter trans., Humanities Press 1995) (1991).

109. For a discussion of this phenomenon, see Amy Sinden, *The Economics of Endangered Species: Why Less is More in the Economic Analysis of Critical Habitat Designations*, 28 HARV. ENVTL. L. REV. 129, 180-83 (2004) (identifying instances where monetizing benefits proved impossible).

scientific information offered to underpin a decision. Where precaution tries to weigh the costs of ignorance and views incomplete scientific information as a reason to proceed with caution, cost-benefit analysis can justify only a thin margin of safety as a response to a lack of scientific information.[110]

If we take seriously the proposition that law is more than filling gaps in a dogmatic system but is instead a means of understanding—a hermeneutic[111]—then we must confront rather than obscure the subjective nature of the tradeoffs among competing priorities that regulation (or a decision not to regulate) entails. To the extent that the New Haven School writings help focus attention on the enormity of consequence embedded in this contest over how authoritative decisionmakers will interpret sustainable development, they can serve as a reminder that that every rule and indeed every decision that balances environmental and economic interests contains a glimmering of the horizon at which the rule ceases to operate, no matter how seemingly objective or universalized.

D. *Inherent Value Judgments and Political Concerns*

For New Haven School thinkers, interdisciplinarity is a key element of problem-oriented jurisprudence. A danger in such an approach, however, is that legal decisionmakers can become enthralled with the methods they have borrowed from other disciplines, methods that are often poorly understood or over-simplified, and lose sight of the goals they were trying to achieve in the first place. As more and more lawyers attempt to wield the analytical tools of other disciplines—particularly economics—that point bears repeating. Economic considerations, rather than being used as one of many tools for understanding law, have in many ways become law's master—a confusion between means and ends that has somehow left at least some policymakers with the impression that economic efficiency is the end they are trying to achieve, rather than a factor to consider while working to achieve the wholly independent substantive goal of sustainability.[112] Moreover, use of borrowed methodological tools often gives decisionmakers a dangerous illusion that they are engaged in a mathematical or value-neutral process, rather than a deeply contextual process of choosing competing means toward a politically-

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110. For a discussion of this point, see Sonja Boehmer-Christiansen, *The Precautionary Principle in Germany—Enabling Government*, *in* REINTERPRETING THE PRECAUTIONARY PRINCIPLE, *supra* note **Error! Bookmark not defined.**, at 31, 52-57.

111. *See* Cover, *supra* note 17, at 40; *see also* James Boyd White, *Law as Language: Reading Law and Reading Literature*, 60 TEX. L. REV. 415 (1982).

112. Note, for example, the repeated argument from those advocating cost-benefit analysis that the focus of all law, including environmental law, should be on increasing material prosperity. Their rationale is that increased prosperity creates a demand for environmental amenities, and the best way to improve the health and living conditions of the poor is not to require pollution reduction or health measures but to "get out of the way" of commercial measures that will bring universal prosperity. *See, e.g.*, Frank Cross, *The Naïve Environmentalist*, 53 CASE W. RES. L. REV. 477, 493 (2002); Cross, *supra* note 95, at 851; Robert W. Tracinski, *"Sustainable" Development's Unsustainable Contradictions*, CAPITALISM MAG., Sept. 14, 2002, http://www.capmag.com/article.asp?ID=1858 (last visited Apr. 5, 2007); *see also* Bjorn Lomborg, The Global Environment: Improving or Deteriorating, Remarks at Harvard University Institute of Politics Symposium (Mar. 13, 2003), *transcript available at* http://www.iop.harvard.edu/pdfs/transcripts.

identified end.[113] With this caution in mind, let us turn to an assessment of the alternative analytical processes and the balances they strike between sustainable development's dialectical priorities.

Cost-benefit analysis and precautionary analysis represent different culturally-framed conceptions of the appropriate role that science, economics, ethics, politics, and law play in developing plans for sustainable environmental protection and management. Initial policy decisions about what constitutes a risk or a benefit, and how those risks and benefits will be measured, weighted, and compared will often be outcome determinative. These culturally-bound and value-driven decisions demarcate the realm within which the purportedly "neutral" scientific process of cost-benefit analysis occurs. Thus, a close examination of cost-benefit analysis reinforces the New Haven School caution that how one contextualizes jurisprudence determines not only how one frames the problems that law must resolve but also the tools one will employ in that assessment.[114]

The focus of environmental law is predominately non-monetary benefits from and costs to what has been characterized as "natural capital"[115]—functioning ecosystems, existing species, and other environmental amenities like beauty and ecosystem services. In many ways, these costs and benefits are incommensurate with monetary costs. That makes the process of cost-benefit analysis deeply political. What monetary value,[116] for example, should be assigned to a capstone species that provides critical environmental services,[117]

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113. Indeed, one of the great insights of Beck's risk society is that scientific concepts, laws and theories are all socially constructed. As such, these concepts are the product of particular, value-laden perspectives. Gérard Valenduc et al., *Intermediary Scientific Report* (Sci. & Precaution in Interactive Risk Evaluation, Working Paper No. 2, 2003), *available at* http://www.ua.ac.be/download.aspx?c=*SPIRE&n=17370&ct=012301&e=29067.

114. McDougal, Lasswell & Reisman, *Prologue*, *supra* note 8, at 196.

115. *See, e.g.*, Geoffrey Heal et al., *Protecting Natural Capital Through Ecosystem Service Districts*, 20 STAN. ENVTL. L.J. 333, 333 (2001); J.B. Ruhl, *Sustainable Development: A Five-Dimensional Algorithm for Environmental Law*, 18 STAN. ENVTL. L.J. 31, 59 (1999).

116. One of the great conflicts within cost-benefit analysis has been over use of a "willingness to pay" standard as a proxy to value resources for which there is no obvious market. Such a metric has been rigorously criticized as privileging consumer preferences over societal ideals and values, MARK SAGOFF, THE ECONOMY OF THE EARTH 27, 56, 65 (1988); privileging the desires of the rich over those of the poor, DANIEL W. BROMLEY, ENVIRONMENT AND ECONOMY: PROPERTY RIGHTS AND PUBLIC POLICY 18, 37, 44, 49, 76 (1991), and C. Edwin Baker, *The Ideology of the Economic Analysis of Law*, 5 PHIL. & PUB. AFF. 3, 6 (1975); failing to acknowledge that reported preferences may not be congruent with actual welfare, Matthew D. Adler & Eric A. Posner, *Implementing Cost-Benefit Analysis When Preferences Are Distorted*, 29 J. LEGAL STUD. 1105 (2000), and Daniel A. Farber, *The Problematics of the Pareto Principle* (U.C. Berkeley Pub. L. Res. Paper No. 114, 2003), *available at* http://ssrn.com/abstract=384142; and—perhaps most significantly—ignoring the extent to which existing social conditions (including the legal system) and behavioral psychology shape reported preferences, THE PERCEPTION OF RISK 32-50 (Paul Slovic ed., 2000), Amy Sinden, *In Defense of Absolutes: Combating the Politics of Power in Environmental Law*, 90 IOWA L. REV. 1405, 1423-30 (2005), John D. Hanson & Douglas A. Kysar, *Taking Behavioralism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630, 640-87 (1999). Robert C. Ellickson, *Bringing Culture and Human Frailty to Rational Actors: A Critique of Classical Law and Economics*, 65 CHI.-KENT L. REV. 23, 35-55 (1989).

117. Ecosystem services are the biological underpinning of human society. NATURE'S SERVICES: SOCIETAL DEPENDENCE ON NATURAL ECOSYSTEMS (Gretchen C. Daily ed., 1997). In addition to the direct production of goods like animals and plants (many of which are traded in markets), some of the most obvious ecosystem services that ought to be valued for purposes of any cost-benefit analysis include: purification of air and water, detoxification and decomposition of wastes, regulation of climate, regeneration of soil fertility and production, and maintenance of biodiversity. Gretchen C. Daily et al.,

or to soil fertility regeneration through nutrient recycling?[118] What costs are imposed by the loss of a healthy and diverse gene pool for a particular species like salmon that is both an important source of food and an important cultural icon?[119] It is precisely these diffuse, non-monetary costs and benefits—the ones of central concern to environmental law and sustainable development—that fit least well into a cost-benefit analysis. These benefits are by nature elusive, intangible, and diffuse while the costs are visible and concrete. The inability to accurately value these costs and benefits undercuts a premise at the heart of cost-benefit analysis itself: that relevant costs and benefits can be known and compared (i.e., that they are "commensurable" in some way).[120]

Politicization of the purportedly neutral cost-benefit analysis does not end with the inherent value judgments involved in its analytical framework. The U.S. experience offers a plethora of examples of how cost-benefit

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Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems, ISSUES IN ECOLOGY, Spring 1997, at 1. Any attempt to place monetary values on these services is fraught with difficulties because it is not known how degraded these services already are and whether the systems can absorb further impairment without significant harm. Without knowing how interdependent different ecosystem services are, and to what extent they are capable of self-restoration over a human timeframe, any valuation would be pure speculation. To get around this problem, these aspects are typically ignored in a cost-benefit analysis.

118. Waste recycling and disposal hinges on the interaction of the lifecycles of various bacteria and detritivoures with planet-wide cycles of carbon, nitrogen, and other elements. How does one place a value on this life-sustaining process? A fundamental disruption of the cycle would prevent, damage, or destroy human activities worth trillions of dollars annually. *See, e.g.*, E.O. Wilson, *The Little Things That Run the World (The Importance and Conservation of Invertebrates)*, 1 CONSERVATION BIOLOGY 344 (1987). Because these benefits are not traded in markets, however, they carry no price tags and attempts to assign dollar values systematically undervalue them, with distortion often introduced through inappropriate discounting. Frank Ackerman and Lisa Heinzerling explore this point in detail. *See* ACKERMAN & HEINZERLING, *supra* note 800, at 181-198. They characterize cost-benefit analysis as "involv[ing] the creation of artificial markets for things—like good health, long life, and clean air—that are not bought and sold." Frank Ackerman & Lisa Heinzerling, *Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection*, 150 U. PA. L. REV. 1553, 1562 (2002).

119. The State of Alaska reports that salmon fisheries are a $300 million per year industry. DOUG EGGERS, ALASKA DEP'T OF FISH & GAME, RUN FORECAST AND HARVEST PROJECTIONS FOR 2007 ALASKA SALMON FISHERIES AND REVIEW OF THE 2006 SEASON 2 (2007), *available at* http://www.sf.adfg.state.ak.us/FedAidpdfs/sp07-01.pdf. However, that number only scratches the surface of values added to Alaskan society from healthy salmon populations. An assessment of wild Pacific salmon's value for purposes of a cost-benefit analysis must go beyond its mere commercial take in the marketplace to include attendant value generated through tourism and employment, as well as to the existence value of the species, its contribution to self-respect, and to the aesthetic and intellectual appreciation of life. COMM. ON ASSESSING AND VALUING THE SERVICES OF AQUATIC AND RELATED TERRESTRIAL ECOSYSTEMS, NAT. RES. COUNCIL, VALUING ECOSYSTEM SERVICES: TOWARD BETTER ENVIRONMENTAL DECISIONMAKING 34-40 (2005) (discussing the role of economic valuation of ecosystems); David A. Dana, *Existence Value and Federal Preservation Regulation*, 28 HARV. ENVTL. L. REV. 343 (2004) (discussing existence value).

120. The concept of "incommensurability" has been the subject of considerable academic attention. Items are incommensurable if there is no common metric by which they can be assessed and ranked. *See* MARGARET JANE RADIN, CONTESTED COMMODITIES 118 (1996) ("By commensurability, I mean that values of things can be arrayed as a function of one continuous variable, or can be linearly ranked."). For discussions of incommensurability and cost-benefit analysis, see generally ELIZABETH ANDERSON, VALUE IN ETHICS AND ECONOMICS 44-64, 190-216 (1993); Jane B. Baron & Jeffrey L. Dunoff, *Against Market Rationality: Moral Critiques of Economic Analysis in Legal Theory*, 17 CARDOZO L. REV. 431, 432-33, 484-87 (1996); Cass R. Sunstein, *Incommensurability and Valuation in Law*, 92 MICH. L. REV. 779, 841-43 (1994); and Lawrence H. Tribe, *Ways Not to Think About Plastic Trees: New Foundations for Environmental Law*, 83 YALE L.J. 1315 (1974). For a particularly thoughtful analysis of the incommensurability problem from a proponent of cost-benefit analysis, see Matthew D. Adler, *Risk, Death and Harm: The Normative Foundations of Risk Regulation*, 87 MINN. L. REV. 1293, 1427 (2003).

analysis can be deliberately shaped to point toward politically desired results. From the construction of canals through Louisiana wetlands,[121] to the redaction of the assessment of climate change,[122] to the very act of developing cost-benefit analysis protocols,[123] overt political interests have not only influenced the elements to be weighed in a cost-benefit analysis, but have also directed how these items are placed on the scales and how the final tally has been totaled up. Cost-benefit analysis is the product of direct—as well as inherent—political processes, rather than a value-neutral "scientific" process.

VI. CONCLUSION

We live in a world of ever-increasing interactions on a global scale. The constantly accelerating rate of technological change means that the range and intensity of these interactions are rapidly expanding. The ramifications of these interactions transcend all national or other man-made boundaries. Writing forty years ago, Lasswell and McDougal presciently described this convergence, and began the process of thinking rigorously about its consequences for law.

The realities of global warming, ozone depletion, desertification, and spreading invasive species make a mockery of the traditional distinction between transboundary and wholly domestic harms.[124] If we are to live together and flourish on our shrinking, warming planet, we must reach beyond oversimplified and dated dichotomies, ones that place international and domestic law in separate realms. In the globalized arena, few, if any, matters are purely domestic. Instead, countless decisions made by individuals, private corporate actors, and government officials at every level have effects beyond the borders of any single nation-state. The New Haven School's efforts to grapple with the global community as an authoritative decisionmaker resonate profoundly with the struggle to confront global environmental challenges. In

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121. *See* LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE & WETLANDS CONSERVATION AND RESTORATION AUTHORITY, COAST 2050: TOWARD A SUSTAINABLE COASTAL LOUISIANA 40-44, 54-57 (1998), *available at* http://www.lca.gov/net_prod_download/public/lca_net_pub_products/doc/2050report.pdf (describing the adverse environmental effects of the canals). *See generally* Northeast Midwest Institute, Large-scale Ecosystem Restoration Initiatives, Protecting and Restoring Coastal Louisiana, http://www.nemw.org/louisiana.htm (last visited Apr. 5, 2007) (providing detailed information about the challenges facing Louisiana wetlands).

122. Juliet Eilperin, *Climate Researchers Feeling Heat from White House*, WASH. POST, Apr. 6, 2006, at A27; Andrew C. Revkin, *Bush Aide Edited Climate Reports: Ex-Oil Lobbyist Softened Greenhouse Gas Links*, N.Y. TIMES, June 8, 2005, at A1; Andrew C. Revkin & Katharine Q. Seelye, *Report by EPA Leaves Out Data on Climate Change*, N.Y. TIMES, June 19, 2003, at A1.

123. For example, in 2006, the United States Office of Management and Budget proposed a system for standardizing risk-assessment and cost-benefit analysis across federal agencies. Off. of Mgmt. & Budget, Proposed Risk Assessment Bulletin, 71 Fed. Reg. 2600 (proposed Jan. 17, 2006), *available at* http://www.whitehouse.gov/omb/inforeg/proposed_risk_assessment_bulletin_010906.pdf. The National Research Council, among others, issued a scathing critique of this proposal, characterizing it as deeply flawed and likely to increase manipulation of data to achieve predetermined results. The proposal was characterized as incomplete, unbalanced, and unsalvageable. NAT. RES. COUNCIL, SCIENTIFIC REVIEW OF THE PROPOSED RISK ASSESSMENT BULLETIN FROM THE OFFICE OF MANAGEMENT AND BUDGET 4-5, 67 (2007).

124. For a thorough exploration of this question, see TRANSBOUNDARY HARM IN INTERNATIONAL LAW, *supra* note 33.

particular, New Haven School thinking might provide a more effective way to take the needs of future generations into account.

New Haven School ideas provide a complex mixture of lessons for this analysis. The important and deep connection between law and politics can inform an exploration of how nation-states go about defining sustainable development. However, the reader is encouraged to look beyond superficial claims of neutrality and to reject the notion that science can somehow provide a way out of the problems that this connection entails.

The New Haven School is often criticized for the opacity of its methodology.[125] Through the lens of time, the various New Haven School matrices and assessment tools seem not only cumbersome but also vaguely quixotic.[126] The contemporary reader cannot but question what appears to be an unrealistic quest for precision in a world of chaos and change.[127] Moreover, the New Haven School methodology has too often provided convenient justifications for United States Cold War policies—thus undermining claims that its matrices enable decisionmakers to achieve a meta-state beyond parochial political concerns.

Nevertheless, much of the intellectual premise behind the New Haven School frameworks and matrices is sound, and some of its basic insights ring true today—successful legal analysis must be contextual, problem-oriented, and multi-disciplinary.[128] The New Haven School frameworks can serve as a guidepost for systematically exploring the context in which problems and possible solutions arise across time, place, and space.

That said, the lessons offered by earlier New Haven School thinkers for environmental problem-solving are cautionary as well as salutary. A simple reading of their rhetoric about science might lead a reader to facile conclusions about how New Haven School ideas inform the cost-benefit versus precautionary analysis debate. A more nuanced grappling with the School's voluminous literature reveals that precautionary analysis and cost-benefit analysis both find authority in strands of New Haven School thought, and suggests that a more robust engagement with New Haven School ideas might inspire new approaches to get beyond the current stalemate.

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125. Many have suggested that the use of overly complex terminology makes much of the New Haven School's scholarship impenetrable to those not willing to invest in learning the "meta-language." *See* DUXBURY, *supra* note 82, at 166-67 (implying that Lasswell's departure from the University of Chicago was at least partly related to the impenetrability of his "specialized vocabulary"). For a spirited defense of the terminology and methodology employed by the New Haven School scholars, see Moore, *supra* note 8, at 674-80.

126. *See* Moore, *supra* note 8 (identifying value analysis, phase analysis, and authority function as differing matrices applied by the New Haven School); *see also* Suzuki, *supra* note 11 (detailing the analysis under each matrix). Each of these matrices comes with a bewildering assortment of variables—power, enlightenment, wealth, well-being, skill, affection, respect, and rectitude along the value matrix; public order, civic order, common interests, and special interests along the interest matrix; intelligence, promotion, prescription, invocation, application, termination, appraisal, and participants as the decision matrix; and participants, perspectives, situations, base values, strategies, outcomes, efforts along the phases matrix—each with subcategories and functional alternatives. The sheer number of these variables overwhelms inquiry at its inception.

127. To say this is not to reopen the constructivist/objectivist science war that raged in the 1990s. For a very interesting discussion of that debate, see generally BEYOND THE SCIENCE WARS: THE MISSING DISCOURSE ABOUT SCIENCE AND SOCIETY (Ullica Segerstrale ed., 2000).

128. Suzuki, *supra* note 11, at 46.

Reframing a New Haven School-inspired analysis as one process of inquiry among many, rather than as *the* path or *a* correct answer, demonstrates just how much the School offers environmental decisionmaking. Its emphasis on the perspectives of decisionmakers, its recognition that decisions are inherently about policy, and its embrace of interdisciplinary investigation offer a means to account for the complex interdependencies that pervade environmental interactions. That accounting might spark new thinking about comprehensive solutions capable of serving the entire global community.