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MULTIDIMENSIONAL GOVERNANCE AND THE BP
DEEPWATER HORIZON OIL SPILL

*Hari M. Osofsky**

Abstract

This Article explores the governance challenges posed by the BP *Deepwater Horizon* oil spill and proposes strategies for developing more inclusive, responsive institutions to help meet them. It begins by analyzing the incident through five core dimensions—vertical, horizontal, direction of hierarchy, cooperativeness, and public–private—to demonstrate the multilevel, multiactor interactions taking place in offshore drilling and oil spill regulation. It then explains the ways in which the complex interactions in these dimensions translate into four core governance challenges: scientific and legal uncertainty, simultaneous overlap and fragmentation, the difficulties of balancing efficiency and inclusion, and inequality and resulting injustice. The Article next integrates conceptual approaches from several disciplines to propose three principles for better multidimensional governance: hybridity, multiscale inclusion, and responsiveness. It evaluates reform proposals made in the aftermath of the spill in light of those strategies. It considers the extent to which citizens’ councils, regulatory burden-shifting, voluntary industry-based regulatory institutions, and independent scientific and technical review bodies should complement efforts to make the federal process more rigorous and adaptive. The Article concludes by discussing the broader applicability of its analysis of multidimensional governance challenges.

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[C]omplex systems almost always fail in complex ways. . . . If we are to make future deepwater drilling safer and more environmentally responsible, we will need to address all [the] deficiencies together; a piecemeal approach will surely leave us vulnerable to future crises in the communities and natural environments most exposed to offshore energy exploration and production.¹

1. NAT’L COMM’N ON THE BP *DEEPWATER HORIZON* OIL SPILL & OFFSHORE DRILLING, REPORT TO THE PRESIDENT, *DEEPWATER: THE GULF OIL DISASTER AND THE FUTURE OF OFFSHORE DRILLING*, at viii, x (2011) [hereinafter NATIONAL COMMISSION REPORT] (quoting NASA, COLUMBIA ACCIDENT INVESTIGATION BOARD 6 (2003), available at http://anon.nasa-global.speedera.net/anon.nasa-global/CAIB/CAIB_lowres_intro.pdf) (internal quotation marks omitted), available at <http://www.gpoaccess.gov/deepwater/deepwater.pdf>.

INTRODUCTION

From a purely physical perspective, the BP *Deepwater Horizon* oil spill is overwhelming. Deepwater drilling itself pushes the limits of our technical capabilities, and containing a spill at that depth proved extremely difficult. Nearly five million barrels of oil spilled into the ocean and an unprecedented 1.8 million gallons of dispersants were used.² The full impacts of the spill on ecosystems and human health will only become clearer over the passage of many years.³

However, the governance challenges that the spill represents are equally daunting. The regulatory aftermath of the spill takes place at the intersection of two legal regimes: one governing offshore activities and the other addressing oil spills and other disasters. Both of these regimes crosscut every level of governance, from international to sublocal, and involve multiple actors at each of these levels. The overlapping, but fragmented, applicable law creates conflicts over who controls which aspects of the drilling and the emergency response, and when top-down and bottom-up approaches are appropriate. In addition, the technological difficulty requires a high level of involvement by the responsible private actors (BP and, at times, the companies with which it subcontracted) in the governmental response, even as the government also sues some of those corporations.

This Article argues that the BP *Deepwater Horizon* oil spill and the response to it represent an important example of multidimensional governance in action and provide an opportunity for assessing how law can approach complexity more effectively. Such an assessment is critical, not only because of the ongoing pressure to drill deep, but also because of the many other similarly complex problems, such as climate change, terrorism, and the global financial crisis. The Article provides a conceptual model for understanding complex regulatory problems and applies this model to the spill; it examines both the core governance challenges involved and how multidimensional governance—that is, governance that involves a wide range of governmental and nongovernmental actors in substantively crosscutting issues at local, state, national, and international levels⁴—could

2. See Nat'l Comm'n on the BP *Deepwater Horizon* Oil Spill & Offshore Drilling, *Stopping the Spill: The Five-Month Effort to Kill the Macondo Well* (Staff Working Paper No. 6, 2010), available at <http://www.oilspillcommission.gov/sites/default/files/documents/Updated%20Containment%20Working%20Paper.pdf>; Nat'l Comm'n on the BP *Deepwater Horizon* Oil Spill & Offshore Drilling, *The Use of Surface and Subsea Dispersants During the BP Deepwater Horizon Oil Spill* (Staff Working Paper No. 4, 2010), available at <http://www.oilspillcommission.gov/sites/default/files/documents/Updated%20Dispersants%20Working%20Paper.pdf>; *One Year Later Press Pack*, RESTORETHEGULF.GOV (Apr. 10, 2011, 3:27 PM), <http://www.restorethegulf.gov/release/2011/04/10/one-year-later-press-pack>.

3. For an analysis of the long-term ecological uncertainties in the context of the *Exxon Valdez* spill, see Stanley D. Rice, *Persistence, Toxicity, and Long-Term Environmental Impact of the Exxon Valdez Oil Spill*, 7 U. ST. THOMAS L.J. 55 (2009).

4. Professor Zygmunt Plater also uses the term “megasystems” to refer to these complex

be approached more effectively in the future. It acknowledges the aspects of the applicable legal infrastructure that would be difficult to change and highlights areas where progress can be made.

In so doing, the Article makes novel theoretical and practical contributions. Its conceptual approach builds on my previous law and geography scholarship to explore the nature of multidimensional governance more thoroughly. This exploration brings together, for the first time, the legal literatures on dynamic federalism, intersystemic governance, new governance, the New Haven School, global legal pluralism, and regulatory institutions; the geography literature on scale; and the interdisciplinary law–ecology literature on adaptive management.⁵ Although each of these literatures has a distinct set of core concepts and only a few of them have been brought together previously,⁶ they share a core similarity: an engagement with the fluid and nuanced character of law across levels of government and among key actors. This Article intertwines their approaches to create a fuller understanding of multidimensional governance.

This fuller understanding is critical to the Article’s practical and normative contributions. Namely, by embracing the substantive and structural complexity surrounding the BP *Deepwater Horizon* oil spill, the Article maps a realistic way forward for addressing this type of governance challenge. Its approach is innovative in two primary ways. First, it brings together concrete regulatory proposals with conceptual models from a range of disciplines to frame an integrated way of thinking about regulation in this context. Second, although the Article highlights a number of specific reforms proposed in the aftermath of this spill, its focus is on structuring governance more appropriately. The Article’s primary contribution is its analysis of how regulation in this context could be made more inclusive and adaptive without being unmanageable.

Such an approach is critical in an environment in which deepwater drilling is likely to continue for the foreseeable future. The United States faces national security concerns due to its dependence on foreign oil, and efforts to reduce oil dependence are not proceeding quickly enough to

governance structures. See Zygmunt J.B. Plater, *The Exxon Valdez Resurfaces in the Gulf of Mexico...and the Hazards of “Megsystem Centripetal Di-Polarity,”* 38 B.C. ENV. AFFAIRS L. REV. 391 (2011); E-mail from Zygmunt Plater to Hari Osofsky (Feb. 12, 2011) (on file with author). The challenges posed by this oil spill might also make it appropriate for classification as a “wicked” or even “super wicked” problem, to use the terminology of Richard Lazarus. See Richard J. Lazarus, *Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future*, 94 CORNELL L. REV. 1153 (2009).

5. For further discussion of each of these literatures, see *infra* Parts II and III.

6. For example, Professors J.B. Ruhl and James Salzman bring together literature on dynamic federalism, new governance, and transgovernmental networks, as well as adaptive systems theory, in their analysis of how to address massive problems more effectively. J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CAL. L. REV. 59, 97–98, 102–08 (2010).

address these concerns sufficiently in the short term. Deepwater drilling, despite its risks, represents one of the biggest potential sources for domestic oil production and has increased dramatically in recent years as the technology improves.⁷ As companies continue to push the boundaries of technological knowledge, regulators need more effective ways of managing the risk and complexity associated with offshore drilling.

Part I considers five dimensions of the legal regime applicable to deepwater drilling and oil spills: vertical (across levels of governance), horizontal (within a level of governance), direction of hierarchy, cooperativeness, and public–private dynamics. Part II then presents four core governance challenges emerging from the resulting complexity: scientific, technological, and legal uncertainty; legal overlap and fragmentation; the difficulties of balancing efficiency and inclusion; and inequality and resulting injustice. Part III recommends principles for addressing these governance challenges and applies them to post-spill reform proposals to analyze strategies for better incorporation of state and local actors and of structures for dynamic learning. The Article concludes by considering this oil spill in the larger context of multidimensional governance challenges and examining possibilities for the road ahead.

I. THE DIMENSIONS OF DEEPWATER DRILLING AND OIL SPILLS

A staggering quantity of law applies to deepwater drilling and oil spills, even if one focuses only on the core regime and not on other related important issues, such as waste disposal and worker safety. This Part attempts to make some sense of this morass by organizing the law conceptually rather than substantively. It analyzes five crosscutting dimensions of the applicable law that shape the possibilities for effective governance of drilling and disaster response. The first two dimensions define the spatial characteristics of the relevant law and regulation: interactions happen across vertical and horizontal axes among entities at different levels of government and within the same level of government. The other three dimensions are more crosscutting and define the nature of these spatial interactions. They focus on issues of hierarchy, cooperativeness, and public–private interactions.⁸

7. See Nat'l Comm'n on the BP *Deepwater Horizon* Oil Spill, *A Brief History of Offshore Drilling* (Staff Working Paper No. 1, 2010), available at <http://www.oilspillcommission.gov/sites/default/files/documents/A%20Brief%20History%20of%20Offshore%20Drilling%20Working%20Paper%208%2023%2010.pdf> (describing how advances in technology from the 1980s to the present day have permitted increased offshore drilling). For an analysis of why less pressure exists to drill in the Great Lakes and of the potential for additional regulation there, see Noah D. Hall, *Oil and Freshwater Don't Mix: Transnational Regulation of Drilling in the Great Lakes*, 38 B.C. ENV. AFFAIRS L. REV. 305 (2011).

8. In my previous work, I have applied the first four of these dimensions to analyzing the Obama Administration's approach to climate change. See Hari M. Osofsky, *Diagonal Federalism and Climate Change: Implications for the Obama Administration*, 62 ALA. L. REV. 237, 265–85

A. Vertical

First, and most fundamentally, the applicable law is multiscalar—international, federal, state, and local. This Section’s analysis of the vertical dimension focuses on the way in which law at different levels of government applies to deepwater drilling and the spill.⁹

International law provides the United States with the property rights that make deepwater drilling possible and with the incentives to drill deep. It also helps to establish the regulatory framework for mobile offshore drilling units (MODU) like the *Deepwater Horizon*. Although many international agreements and customary international law principles potentially apply to both drilling and the spill, three types of international law are most fundamental.

First, the principle of state sovereignty over natural resources provides nation-states with property rights to their natural resources. These property rights ensure that the geopolitics of oil revolve around the physical location of the resource. Because oil is mainly located in countries with which the United States has complex political relations, oil independence as a component of energy independence has become a national security issue.¹⁰

(2011). This Article adds the public–private dimension to its analysis, because that dimension plays such a critical role in structuring the governmental response. *See infra* Section I.E.

9. For a survey of scholarship examining regulation at different scales and across scales, see Osofsky, *supra* note 8, at 273–78. The scholarship connecting the international to multilevel domestic interactions has particular salience in this context. *See* Robert B. Ahdieh, *Dialectical Regulation*, 38 CONN. L. REV. 863 (2006) [hereinafter Ahdieh, *Dialectical Regulation*]; Robert B. Ahdieh, *Foreign Affairs, International Law, and the New Federalism: Lessons from Coordination*, 73 MO. L. REV. 1185 (2008); Robert B. Ahdieh, *From Federalism to Intersystemic Governance: The Changing Nature of Modern Jurisdiction*, 57 EMORY L.J. 1 (2007); Daniel A. Farber, *Climate Change, Federalism, and the Constitution*, 50 ARIZ. L. REV. 879 (2008); Douglas A. Kysar & Bernadette A. Meyler, *Like a Nation State*, 55 UCLA L. REV. 1621 (2008); Judith Resnik, *Law’s Migration: American Exceptionalism, Silent Dialogues, and Federalism’s Multiple Ports of Entry*, 115 YALE L.J. 1564, 1627–33 (2006); Judith Resnik, Joshua Civin & Joseph Frueh, *Ratifying Kyoto at the Local Level: Sovereigntism, Federalism, and Translocal Organizations of Government Actors (TOGAS)*, 50 ARIZ. L. REV. 709, 727–28 (2008); Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 ARIZ. L. REV. 681 (2008); Tseming Yang & Robert V. Percival, *The Emergence of Global Environmental Law*, 36 ECOLOGY L.Q. 615 (2009). For a discussion of the interaction between the subnational and international at the 2008 American Society of International Law Annual Meeting, see Robert B. Ahdieh et al., *When Subnational Meets International: The Politics and Place of City, State, and Province in the World*, 102 AM. SOC’Y INT’L L. PROC. 339 (2008).

10. For an analysis of how state sovereignty over natural resources enmeshes oil corporations in armed conflict, see Robert Dufresne, *The Opacity of Oil: Oil Corporations, Internal Violence, and International Law*, 36 N.Y.U. J. INT’L L. & POL. 331 (2004). For a discussion of the reaffirmation of the principle of state sovereignty over natural resources in the context of international energy law, see Melaku Geboye Desta, *OPEC Production Management Practices Under WTO Law and the Antitrust Law of Non-OPEC Countries*, 28 J. ENERGY & NAT. RESOURCES L. 439 (2010). For a broader discussion of state sovereignty over natural resources in international environmental law, see GEORGE ELIAN, *THE PRINCIPLE OF SOVEREIGNTY OVER NATURAL RESOURCES* (1979); NICO SCHRIJVER, *SOVEREIGNTY OVER NATURAL RESOURCES: BALANCING RIGHTS AND DUTIES* (1997); Hari M. Osofsky, *Learning from Environmental Justice: A New Model for International Environmental Rights*, 24 STAN. ENVTL. L.J. 71 (2005); Annecoos Wiersema, *A Train Without*

The U.S. cannot achieve oil independence from land-based resources alone, and thus feels pressure to drill deep in the ocean where there are promising large oil reserves, despite the technological difficulties.

Second, the United Nations Convention on the Law of the Sea (UNCLOS),¹¹ to which the United States is not party but largely recognizes as customary international law,¹² establishes that the U.S. property rights extend into the deepwater, which allows it to drill. Specifically, under UNCLOS, nations can establish a 200-mile exclusive economic zone (EEZ) in the water off their shores. Deepwater drilling sites, such as that of the *Deepwater Horizon*, are located in the U.S. EEZ and thus fall under U.S. regulatory authority.¹³ In addition, UNCLOS requires states to engage in environmental protection and contains measures regarding oil spills.¹⁴ It also has provisions for navigating the legal difficulties raised when ships, like the MODU at issue here, carry a flag from a country that is home to neither the drilling corporation nor the drilling site.¹⁵ Although UNCLOS establishes flag states' duties to enforce environmental protection, the Marshall Islands, the flag state of the *Deepwater Horizon* and a crucial regulator in this case, has less rigorous regulation and enforcement than the United States.¹⁶

Third, the United States is party to complementary conventions developed under the auspices of the International Maritime Organization (IMO) that create obligations for member states to establish safety standards and to prevent and respond to oil spills. For example, the International Convention on Oil Pollution Preparedness, Response and Co-operation, to which the United States is a party, has provisions throughout that apply to "offshore unit[s]," which are defined as "any fixed or floating offshore installation or structure engaged in gas or oil exploration, exploitation or production activities, or loading or unloading of oil."¹⁷ In addition, the IMO passed a resolution in 2009 establishing a Code for the

Tracks: Rethinking the Place of Law and Goals in Environmental and Natural Resources Law, 38 ENVTL. L. 1239, 1283 n.261 (2008).

11. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter UNCLOS].

12. See generally John A. Duff, *The United States and the Law of the Sea Convention: Sliding Back from Accession and Ratification*, 11 OCEAN & COASTAL L.J. 1, 10 (2006) (discussing the U.S. relationship with UNCLOS).

13. See UNCLOS, *supra* note 11, arts. 55–57; Scott J. Shackelford, *The Tragedy of the Common Heritage of Mankind*, 28 STAN. ENVTL. L.J. 109, 127 n.76 (2009).

14. See UNCLOS, *supra* note 11, arts. 192–237.

15. See *id.* art. 217.

16. See David Hammer, *Kenner Hearing: Marshall Islands-Flagged Rig in Gulf Oil Spill Was Reviewed in February*, NOLA.COM (May 12, 2010, 4:27 PM), http://www.nola.com/news/gulf-oil-spill/index.ssf/2010/05/kenner_hearing_marshall_island.html.

17. International Convention on Oil Pollution Preparedness, Response and Co-operation art. 2(4), Nov. 30, 1990, S. Treaty Doc. No. 102-11, 1891 U.N.T.S. 51. For a discussion of the relationship between UNCLOS and these conventions, see Craig H. Allen, *Revisiting the Thames Formula: The Evolving Role of the International Maritime Organization and Its Member States in Implementing the 1982 Law of the Sea Convention*, 10 SAN DIEGO INT'L L.J. 265, 271–87 (2009).

Construction and Equipment of Mobile Offshore Drilling Units (2009 MODU Code) to supersede its 1989 code. The new code will be applicable to new construction beginning in 2012, and so the older code applies to the *Deepwater Horizon*.¹⁸ The United States meets these obligations through statutory provisions and regulations, which are generally implemented by the U.S. Coast Guard.¹⁹

This international legal framework lays the groundwork for the rest of the complexities in the vertical dimension. In the U.S. federal system of government, federal, state, and local law each apply to particular aspects of the BP *Deepwater Horizon* oil spill. With respect to the regulation of the offshore drilling itself, the law at first blush is relatively straightforward. Because the blowout took place at a well approximately forty-one miles from the coast, the federal government, based on the Outer Continental Shelf Lands Act (OCSLA) and Coastal Zone Management Act (CZMA), regulated the drilling.²⁰ Although the Obama Administration's decision to issue now-defunct moratoria on deepwater drilling in the Gulf—first based on depth and then based on technology—created significant controversy and lawsuits, those suits challenged the appropriateness of the decision, not of the governance level.²¹

However, another layer of multiscalar law interacts with that regulatory regime due to the many corporations involved through subcontracting relationships in the drilling project. Although BP, as the lessee,²² has

18. See Int'l Maritime Org. [IMO], *Code for the Construction and Equipment of Mobile Offshore Drilling Units*, at 2, IMO Assemb. Res. A.1023(26) (Jan. 18, 2010), available at http://www.vta.ee/atp/public/A_26-Res.1023.pdf.

19. CURRY L. HAGERTY & JONATHAN L. RAMSEUR, CONG. RESEARCH SERV., R41262, *DEEPWATER HORIZON OIL SPILL: SELECTED ISSUES FOR CONGRESS 13–18* (2010), available at <http://www.fas.org/sgp/crs/misc/R41262.pdf>.

20. See Coastal Zone Management Act, 16 U.S.C. §§ 1451–66 (2006); Outer Continental Shelf Lands Act, 43 U.S.C. §§ 1331–56a (2006); BP, Press Release, BP Confirms that Transocean Ltd Issued the Following Statement Today, Apr. 20, 2010, <http://www.bp.com/genericarticle.do?categoryId=2012968&contentId=7061443> (last visited July 28, 2011). The division of state and federal authority over the submerged land offshore contained in these statutes was established under the Submerged Lands Act, ch. 65, 67 Stat. 29 (1953) (codified as amended at 43 U.S.C. §§ 1301–15). For an analysis of that evolution, see Rachel E. Salcido, *Offshore Federalism and Ocean Industrialization*, 82 TUL. L. REV. 1355, 1375–96 (2008).

21. For the decisions staying the first moratorium, see *Hornbeck Offshore Services, L.L.C. v. Salazar*, No. 10-30585, 2010 WL 3219469, at *1–2 (5th Cir. Aug. 16, 2010) (per curiam), and *Hornbeck Offshore Services, L.L.C. v. Salazar*, 696 F. Supp. 2d 627, 639 (E.D. La. 2010). For the decisions on the second moratorium, see *Hornbeck Offshore Services, L.L.C. v. Salazar*, 396 F. App'x 147, 148 (5th Cir. 2010) (per curiam); *Hornbeck Offshore Services, L.L.C. v. Salazar*, No. 10-1663, 2010 WL 3523040 (E.D. La. Sept. 1, 2010); *Enesco Offshore Co. v. Salazar*, No. 10-1941, 2010 WL 4116892, at *5 (E.D. La. Oct. 19, 2010). For an analysis of the issues surrounding the moratoria, see CURRY L. HAGERTY, CONG. RESEARCH SERV., R41132, *OUTER CONTINENTAL SHELF MORATORIA ON OIL AND GAS DEVELOPMENT* and JOSEPH R. MASON, *THE ECONOMIC COST OF A MORATORIUM ON OFFSHORE OIL AND GAS EXPLORATION TO THE GULF REGION* (2010), available at <http://www.noia.org/website/download.asp?id=40016>.

22. BP, *DEEPWATER HORIZON ACCIDENT INVESTIGATION REPORT 9* (2010), available at http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/incident_response/STAGING/local_assets/downloads_pdfs/Deepwater_Horizon_Accident_Investigation_Report.pdf.

primary legal responsibility for the spill, eleven other companies (depending on whether one treats subsidiaries as separate companies) played important roles. Regarding the rig itself, R & B Falcon, originally incorporated in Delaware, designed the *Deepwater Horizon* before being acquired by the Swiss-incorporated Transocean—the current owner of the rig.²³ Hyundai Heavy Industries, incorporated in South Korea, then built the rig. Transocean Triton Asset Leasing GmbH, a Swiss subsidiary of Transocean, operated the rig and registered it under a Marshall Islands flag.²⁴ The Delaware-incorporated Halliburton Energy Services did cement work for the well and had employees on the *Deepwater Horizon* at the time of the explosion.²⁵ The Swiss-incorporated Weatherford International Ltd., which has subsidiaries incorporated in Bermuda and Delaware, worked on the casing process for the well and designed the float collar.²⁶ Schlumberger Ltd., which is incorporated in Curaçao and based in the Netherlands, was supposed to perform a final test on a well seal the morning of the explosion, but BP canceled the test and sent Schlumberger's employees back to Louisiana.²⁷ Cameron International, another Delaware-incorporated company, manufactured the ill-fated blowout preventer used on the rig.²⁸ BP hired *M/V Damon B. Bankston*, registered under the U.S. flag, to service the rig; the boat was used after the explosion to evacuate workers.²⁹ M-I Swaco, a joint subsidiary of Schlumberger and Smith International, served as a source of mud engineers and had employees on board the rig at the time of the explosion.³⁰ Finally, Delaware-incorporated Anadarko Petroleum Corp. owns 25% stock and MOEX Offshore 2007 (also incorporated in Delaware but part of Japanese company Mitsui & Co. Ltd.) owns 10% stock in Macondo Prospect,

23. See R & B Falcon, Current Report (Form 8-K), at 2 (Aug. 17, 2001); Transocean Inc., Annual Report (Form 10-K), at 5, exhibit 21 (Mar. 1, 2007); Transocean Ltd., Current Report (Form 8-K) (Apr. 22, 2010); MALCOLM SHARPLES ET AL., OFFSHORE RISK & TECHNOLOGY CONSULTING INC., *prepared for MINERALS MANAGEMENT SERVICE, POST MORTEM FAILURE ASSESSMENT OF MODUS DURING HURRICANE IVAN 50–51* (2004), available at http://www.boemre.gov/tarprojects/548/Ivan_FinalReport.pdf.

24. See SHARPLES ET AL., *supra* note 23; Transocean Inc., Annual Report, *supra* note 23, at exhibit 21; Hyundai Heavy Indus. Co., Initial Statement of Beneficial Ownership (Schedule 13G) (Aug. 13, 2007).

25. DEEPWATER HORIZON ACCIDENT INVESTIGATION REPORT, *supra* note 22, at 23, 33; Halliburton Co., Current Report (Form 8-K) (Dec. 21, 2010).

26. DEEPWATER HORIZON ACCIDENT INVESTIGATION REPORT, *supra* note 22, at 70; Weatherford Int'l Ltd., Annual Report (Form 10-K), at exhibit 21.1 (Mar. 8, 2011).

27. Schlumberger N.V., Annual Report (Form 10-K) (Feb. 4, 2011); *Schlumberger Says Its Crew Left Horizon Day of Fire*, REUTERS, May 20, 2010, <http://www.reuters.com/article/idUUSTRE64J0GS20100520>.

28. Cameron Int'l Corp., Current Report (Form 8-K) (Jan. 7, 2011); DEEPWATER HORIZON ACCIDENT INVESTIGATION REPORT, *supra* note 22, at 154; see also *Deepwater Horizon Blowout Preventer "Faulty"—Congress*, BBC NEWS (May 13, 2010), <http://news.bbc.co.uk/2/hi/8679090.stm>.

29. DEEPWATER HORIZON ACCIDENT INVESTIGATION REPORT, *supra* note 22, at 24.

30. *Id.* at 33; *Corporate Profile*, M-I SWACO, <http://www.slb.com/services/miswaco/about.aspx>.

Mississippi Canyon 252, the site where *Deepwater Horizon* was working at the time of the oil spill.³¹

Because these companies are incorporated in a U.S. state (specifically Delaware) and countries around the world, a wide range of law potentially applies to them. In addition, although the federal government has regulatory authority over the site through OCSLA, state law as surrogate federal law applies to the extent it is not incompatible with other federal laws and regulations applicable to the contractual relationships among the companies. Because Macondo Prospect, Mississippi Canyon 252—the site of the explosion and spill—is off the coast of Louisiana, that state’s contract law is applied as federal law to these subcontracting arrangements.³²

The response and spill liability regimes arguably pose even more complex issues of regulatory scale. The federal government largely controlled the response under the National Oil and Hazardous Substances Pollution Contingency Plan, also known as the National Contingency Plan (NCP). The NCP is required under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), the Clean Water Act (CWA), and most recently, the Oil Pollution Act of 1990 (OPA).³³ The NCP sets up a federally controlled approach to the response, with opportunities for involvement and input by key state actors. Although the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) allows for a much more state-controlled

31. See *DEEPWATER HORIZON ACCIDENT INVESTIGATION REPORT*, *supra* note 22, at 15; Anadarko Petroleum Corp., Current Report (Form 8-K) (Nov. 12, 2010); Complaint at ¶17–18, 26, 28–29, *United States v. BP Exploration & Prod. Inc.*, No. 2:10-cv-04536 (E.D. La. filed Dec. 15, 2010).

32. See 43 U.S.C. § 1333 (2006); *Frugé ex rel. Frugé v. Parker Drilling Co.*, 337 F.3d 558, 560 (5th Cir. 2003) (“Federal jurisdiction is predicated on the Outer Continental Shelf Lands Act (OSCLA) . . . [and] OCSLA adopts the law of the adjacent state (Louisiana) as surrogate federal law, to the extent that it is not inconsistent with other federal laws and regulations.” (citations omitted)). For an example of the relevant Louisiana law, see LA. REV. STAT. ANN. § 9:4807(C) (2010) (“A subcontractor is one who, by contract made directly with a contractor, or by a contract that is one of a series of contracts emanating from a contractor, is bound to perform all or a part of a work contracted for by the contractor.”).

33. 40 C.F.R. § 300.2 (“The NCP is required by section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. § 9605, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99–499, (hereinafter CERCLA), and by section 311(d) of the Clean Water Act (CWA), 33 U.S.C. § 1321(d), as amended by the Oil Pollution Act of 1990 (OPA), Pub. L. 101–380. In Executive Order (E.O.) 12777 (56 FR 54757, October 22, 1991), the President delegated to the Environmental Protection Agency (EPA) the responsibility for the amendment of the NCP. Amendments to the NCP are coordinated with members of the National Response Team (NRT) prior to publication for notice and comment. This includes coordination with the Federal Emergency Management Agency (FEMA) and the Nuclear Regulatory Commission in order to avoid inconsistent or duplicative requirements in the emergency planning responsibilities of those agencies. The NCP is applicable to response actions taken pursuant to the authorities under CERCLA and section 311 of the CWA, as amended.”).

emergency response and was invoked in the aftermath of the spill, the response has been organized primarily through the federal NCP structure.³⁴ Local government and local and sublocal community groups have also been involved in an array of response and cleanup efforts, which at times have been coordinated with NCP efforts and at times have conflicted with them.³⁵

OPA, paired with the CWA and other environmental law, provides a federal framework for oil spill liability, but explicitly does not preempt similar state laws.³⁶ Some of the impacted Gulf Coast states have laws similar to the OPA.³⁷ In this case, BP voluntarily gave funds directly to the states and to a trust fund used to establish the Gulf Coast Claims Facility (GCCF), which as of July 14, 2011, has paid out \$4,625,447,977.61 to 197,671 successful claimants.³⁸ However, the GCCF may not meet BP's obligations under the OPA, and the federal government has sued BP under both the OPA and CWA.³⁹ In addition to a handful of other regulatory suits by nongovernmental organizations, numerous impacted individuals have sued BP under state tort law, and injured oil rig workers have also sued under federal admiralty law.⁴⁰ In April 2011, BP agreed to provide one

34. See Robert T. Stafford Disaster Relief and Emergency Assistance Act, Pub. L. No. 100-707, 102 Stat. 4689 (codified as amended at 42 U.S.C. § 5121 (1988)). See *Decision-Making Within the Unified Command* (Nat'l Comm'n on the BP Deepwater Horizon Oil Spill and Offshore Drilling, Staff Working Paper No. 2, 2010), available at <http://www.oilspillcommission.gov/sites/default/files/documents/Updated%20Unified%20Command%20Working%20Paper.pdf> (analyzing the response to the oil spill under the NCP).

35. See *Decision-Making Within the Unified Command*, *supra* note 34, at 15.

36. 33 U.S.C. § 2718 (2006).

37. For a discussion of "state mini-OPAs," see Stanley A. Millan, *Escaping the "Black Hole" in the Gulf*, 24 TUL. ENVTL. L.J. 41, 66-67 (2010). For an exploration of BP's potential liability under the National Marine Sanctuaries Act, see Robin Kundis Craig, *The Gulf Oil Spill and National Marine Sanctuaries*, 40 ENVTL. L. REP. NEWS & ANALYSIS 11074 (2010).

38. See GULF COAST CLAIMS FACILITY, OVERALL PROGRAM STATISTICS: STATUS REPORT AS OF JULY 14, 2011 (2011), http://www.gulfcoastclaimsfacility.com/GCCF_Overall_Status_Report.pdf (status report dated July 14, 2011 on file with the *Florida Law Review*); *Frequently Asked Questions*, GULF COAST CLAIMS FACILITY, <http://www.gulfcoastclaimsfacility.com/faq#Q1> (last visited July 10, 2011); *Government Claims and Funding Requests*, BP (Aug. 2010), http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/gom_response/STAGING/local_assets/downloads_pdfs/Government_Claims_and_Funding_Requestsfact_sheet.pdf; Jackie Calmes & Helene Cooper, *BP to Set Aside \$20 Billion To Help Oil Spill Victims*, N.Y. TIMES, June 17, 2010, <http://query.nytimes.com/gst/fullpage.html?res=9503E5DE143FF934A25755C0A9669D8B63&ref=gulfmexico2010&pagewanted=1>.

39. Complaint, *supra* note 31, at 3. For an analysis of whether the GCCF is constituted under the OPA and ways in which, if so, it violates the OPA, see Hari M. Osofsky, Kate Baxter-Kauf, Bradley Hammer, Ann Mailander, Brett Mares, Amy Pikovsky, Andrew Whitney & Laura Wilson, *Environmental Justice and the BP Deepwater Horizon Oil Spill*, N.Y.U. ENVTL. L.J. (forthcoming 2011) (manuscript on file with authors). For an analysis of ways in which issues arising in the CERCLA context may also become concerns for the GCCF, see Alfred R. Light, *The Deepwater Horizon Oil Spill Trust and the Gulf Coast Claims Facility: The "Superfund" Myth and the Law of Unintended Consequences* (unpublished manuscript) (on file with author).

40. For a summary of the lawsuits over the BP *Deepwater Horizon* oil spill, see Tom Hals & Xavier Briand, *Summary and Status of Gulf Oil Disaster Litigation*, INSURANCE J. (Dec. 16, 2010), <http://www.insurancejournal.com/news/national/2010/12/16/115707.htm>. The *Louisiana Law*

billion dollars, constituting a not-yet-determined portion of its total liability, to the federal government and impacted Gulf Coast states to support restoration projects.⁴¹

In the vertical dimension, then, the multilevel interactions take place in an environment of strong federal control. As discussed in Sections I.C and I.D, this overarching structure raises questions about both the direction of hierarchy and level of cooperativeness of key players.

B. *Horizontal*

The legal complexity does not end in the vertical dimension. Because of the crosscutting nature of both drilling and the spill, numerous types of entities at each level of government have legitimate, legally based interests in being involved that often interact.⁴² For the sake of manageability, this Section focuses on the relevant federal agencies to give a sense of the horizontal overlap at that dominant level.

Regulation of offshore drilling largely takes place under the dual auspices of the Department of the Interior (DOI) and the Coast Guard.⁴³ Prior to the BP *Deepwater Horizon* oil spill, the DOI regulated drilling under the Minerals Management Service (MMS). However, in the wake of the spill, Secretary of the Interior Ken Salazar issued Order 3299, separating the MMS into the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE); the Bureau of Safety and Environmental Enforcement; and the Office of Natural Resource Revenue. This change separated leasing, environmental oversight, and money collection, but also created more opportunities for horizontal interaction.⁴⁴

Review dedicated a special issue to exploring liability and compensation in the aftermath of the spill. See Thomas C. Galligan, Jr., *Death at Sea: A Sad Tale of Disaster, Injustice, and Unnecessary Risk*, 71 LA. L. REV. 787 (2011); Patrick H. Martin, *The BP Spill and the Meaning of "Gross Negligence or Willful Misconduct,"* 71 LA. L. REV. 957 (2011); Linda S. Mullenix, *Prometheus Unbound: The Gulf Coast Claims Facility as a Means for Resolving Mass Tort Claims—A Fund Too Far*, 71 LA. L. REV. 819 (2011); Kenneth M. Murchison, *Liability Under the Oil Pollution Act: Current Law and Needed Revisions*, 71 LA. L. REV. 917 (2011).

41. John M. Broder, *BP Agrees to Pay \$1 Billion for Start of Gulf Restoration*, N.Y. TIMES, Apr. 21, 2011, <http://www.nytimes.com/2011/04/22/science/earth/22spill.html?ref=gulfofmexico> 2010.

42. I examined scholarship on horizontal dynamics in my consideration of that dimension in Osofsky, *supra* note 8, at 273–78. For examples of scholarship focused on horizontal dynamics, sometimes in interaction with other dimensions, see Allan Erbsen, *Horizontal Federalism*, 93 MINN. L. REV. 493, 498–510 (2008), and Noah D. Hall, *Toward a New Horizontal Federalism: Interstate Water Management in the Great Lakes Region*, 77 U. COLO. L. REV. 405, 448–56 (2006).

43. See *Decision-Making Within the Unified Command*, *supra* note 34, at 1–3.

44. Ken Salazar, U.S. Secretary of the Interior, Secretarial Order No. 3299, *Establishment of the Bureau of Ocean Energy Management, the Bureau of Safety and Environmental Enforcement, and the Office of Natural Resources Revenue* (May 19, 2010), available at <http://www.doi.gov/deepwaterhorizon/loader.cfm?csModule=security/getfile&PageID=32475>. For a discussion of the ways in which outside review failed to catch problems with MMS analysis and of how outside review could be more effective, see Holly Doremus, *Through Another's Eyes: Getting the Benefit of Outside Perspectives in Environmental Review*, 38 B.C. ENV. AFFAIRS L. REV. 247 (2011).

The administrative reform process has continued during the year since the spill, with Secretary Salazar and BOEMRE Director Michael R. Bromwich announcing in January 2011 that BOEMRE will be further subdivided by October 2011 into the Bureau of Ocean Energy Management (BOEM), which will focus on “the resource development and energy management functions,” and the Bureau of Safety and Environmental Enforcement (BSEE), which will perform the “the safety and enforcement functions.”⁴⁵

In addition to this reorganization, Secretary Salazar also established a new Ocean Energy Safety Advisory Committee, “a permanent advisory body of the nation’s leading scientific, engineering, and technical experts who will provide critical guidance on improving offshore drilling safety, well containment, and spill response,” in January 2011.⁴⁶ The committee quickly began its work, and by July 2011, had held its second meeting.⁴⁷

The Coast Guard also oversees offshore drilling, both with respect to safety and spill response. Its regulatory authority focuses on the platform level of the MODU, as opposed to the BOEMRE’s regulation of the subplatform drilling systems.⁴⁸

The NCP anticipates the need for many horizontal interactions and for a clear leader in response to disaster. To that end, it establishes a national response team of fifteen key federal departments and agencies and regional response teams that include state and local government representatives.⁴⁹ The response effort is led by a unified command system, which is headed by the On-Scene Coordinator.⁵⁰ Because this spill took place in coastal waters rather than on land, the On-Scene Coordinator was drawn from the Coast Guard; Captain Joseph Scott Paradis originally served in this role as his sector led the initial response, but then Admiral Mary Landry, commander of the Eighth Coast Guard District, replaced him, followed by Rear Admiral James Watson, Rear Admiral Paul Zukunft, and Captain

45. See Press Release, Dep’t of Interior, Salazar, Bromwich Announce Next Steps in Overhaul of Offshore Energy Oversight and Management (Jan. 19, 2011), available at <http://www.doi.gov/news/pressreleases/Salazar-Bromwich-Announce-Next-Steps-In-Overhaul-of-Offshore-Energy-Oversight-and-Management.cfm>; *Fact Sheet: The BSEE and BOEM Separation*, DEP’T OF INTERIOR (Jan. 19, 2011), http://www.doi.gov/news/pressreleases/upload/01-19-11_Fact-Sheet-BSEE-BOEM-separation-2.pdf.

46. Press Release, *supra* note 45; Establishment of the Ocean Energy Safety Advisory Committee, 76 Fed. Reg. 4128 (Jan. 24, 2011); *Ocean Energy Safety Advisory Committee Charter*, BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION AND ENFORCEMENT (Jan. 19, 2011), available at <http://www.boemre.gov/mmab/PDF/CommitteeCharter.pdf>.

47. Press Release, Dep’t of Interior, Salazar Names Members of Ocean Energy Safety Advisory Committee to Guide Oil and Gas Regulatory Program Reform (Mar. 11, 2011), available at <http://www.doi.gov/news/pressreleases/Salazar-Names-Members-of-Ocean-Energy-Safety-Advisory-Committee-to-Guide-Oil-and-Gas-Regulatory-Program-Reform.cfm>; Ocean Energy Safety Advisory Committee; Notice of Meeting, 76 Fed. Reg. 18,232 (Apr. 1, 2011); *Ocean Energy Safety Advisory Committee*, BUREAU OF OCEAN ENERGY MGMT., REGULATION & ENFORCEMENT, <http://www.boemre.gov/mmab/EnergySafety.htm> (last visited July 10, 2011).

48. HAGERTY & RAMSEUR, *supra* note 19, at 13–18.

49. 40 C.F.R. §§ 300.105(c), .110(a), .175(b) (2009).

50. See *id.* § 300.105(c), (d).

Lincoln Stroh.⁵¹ In addition to the Unified Area Command, three Incident Command Posts were established, in Houma, Louisiana; Houston, Texas; and Mobile, Alabama.⁵²

The Coast Guard designated the disaster as a “Spill of National Significance” by late April and, as a result, a National Incident Command was also established, with Admiral Thad Allen designated as the National Incident Commander.⁵³ This designation raised another horizontal governance question, which the NCP does not answer clearly: what is the role of the National Incident Commander in relation to the Federal On-Scene Coordinator? In this case, the key entities of the response team divided responsibility three ways: (1) the Unified Area Command coordinated resources, communications, and the relationship with BP; (2) the Incident Command Posts made key tactical and operational decisions in their respective regions; and (3) the National Incident Command responded to high-level media and political inquiries.⁵⁴

In practice, however, many important horizontal interactions took place outside of the chain of command established in the NCP. To some extent, this activity likely arose from the magnitude of the spill; agency heads played an active role in interagency conference calls, supplanting their designated team members in the national response team. But in many other instances, key agencies, particularly the Environmental Protection Agency (EPA), National Ocean and Atmospheric Agency (NOAA), and United States Geological Survey (USGS), made important decisions outside of the command structure. Also, the NCP plan does not include the Department of Energy (DOE), but that agency played an important role in the containment efforts, which also added a horizontal piece outside of the command structure.⁵⁵

The long-term spill response has involved additional federal agencies and other entities that cover different but often overlapping, substantive areas. However, many of those entities are the same as those initially responding as part of the national response team. The official government website on the spill lists fifteen federal partners in the response: Corporation for National and Community Service, Department of

51. See *Admiral Paul Zukunft to Assume Role of Federal On-Scene Coordinator*, RESTORETHEGULF.GOV (July 10, 2011, 1:11 PM), <http://www.restorethegulf.gov/release/2010/07/10/admiral-paul-zukunft-assume-role-federal-scene-coordinator>; *Photo: Capt. Stroh Relieves Rear Adm. Zukunft as Federal On-Scene Coordinator*, RESTORETHEGULF.GOV (Dec. 22, 2010, 2:06 PM), <http://www.restorethegulf.gov/release/2010/12/22/photo-capt-stroh-relieves-rear-adm-zukunft-federal-scene-coordinator>; *Rear Adm. Landry to Resume Her Role as Coast Guard Eighth District Commander To Focus on Hurricane Readiness*, RESTORETHEGULF.GOV (June 1, 2010, 6:00 PM), <http://www.restorethegulf.gov/release/2010/06/01/rear-adm-landry-resume-her-role-coast-guard-eighth-district-commander-focus-hurri>.

52. See *Decision-Making Within the Unified Command*, *supra* note 34, at 4.

53. See *id.* at 4.

54. *Id.* at 5.

55. See *id.* at 9.

Agriculture, Department of Defense, DOE, Department of Homeland Security, DOI, Department of Justice, Department of Labor, EPA, Health and Human Services, National Aeronautics and Space Administration, NOAA, Small Business Administration, Research and Innovative Technology Administration, and the White House.⁵⁶ These entities work, often in tandem, on thirteen topics deemed core to the response and recovery: administration, assistance, data/energy, environment, food, health, investigation, military, travel, volunteer, weather, wildlife, and workers.⁵⁷

Like the vertical complexity, these horizontal dynamics are necessitated by the nature of deepwater drilling and the spill, but raise difficult questions about how these many interested agencies should interact. The two Sections that follow explore these issues by focusing on the dimensions of direction of hierarchy and cooperativeness.

C. *Direction of Hierarchy*

In both the vertical and horizontal dimensions, the overlapping yet fragmented legal regime and division of responsibilities have led to complex issues around the direction of hierarchy.⁵⁸ A working paper written by the staff of the National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling (Commission) titled *Decision-Making Within the Unified Command* lays out some of these complexities. This Section builds on that working paper to analyze the two primary types of difficulties that arose over the direction of hierarchy: uncertainty and discontent. Both categories of concerns were exacerbated by the emergency situation created by this hard-to-stop spill and the difficult choices that responders faced.

As noted above, while complex, the regulatory regime regarding deepwater drilling itself produces relatively clear divisions of authority. Statutory law establishes federal control over the water more than three miles out, and the relevant entities within the DOI share regulatory oversight with the U.S. Coast Guard in fairly well-defined ways.⁵⁹

However, the implementation of the National Contingency Plan created greater uncertainties. Not only did the key actors within the plan have to decide upon the division of authority, but also many crucial decisions came from outside of the NCP structure. At larger scales, federal agency heads

56. *Federal Partners by Agency A-Z*, RESTORETHEGULF.GOV, <http://www.restorethegulf.gov/category/agency-z> (last visited July 10, 2011).

57. *Federal Partners by Topic A-Z*, RESTORETHEGULF.GOV, <http://www.restorethegulf.gov/task-force/federal-partners/topic-z> (last visited July 10, 2011).

58. In my consideration of the dimension of hierarchy in Osofsky, *supra* note 8, at 278–80, I noted several scholars engaged in analyses of continuously shifting dynamics around hierarchy. I discuss their work below in my analysis of the governance challenge of simultaneous overlap and fragmentation. See *infra* notes 128–30 and accompanying text.

59. See *supra* notes 17–20 and accompanying text.

often made important response decisions outside the chain of command. At smaller scales, a number of Gulf Coast state and local officials took their own measures to try to protect their communities.⁶⁰ This Section will focus on these dynamics between federal and smaller-scale governments as they represent the nuances of struggle over hierarchy in the aftermath of the spill.

The seeds for confusion in federal–state dynamics were sown by the disaster-planning processes prior to the spill. The Commission’s staff report indicates that higher-level state officials often appeared not to have participated in the planning process and, as a result, expressed a lack of familiarity and buy-in with the steps being taken under the National Contingency Plan. This lack of buy-in became a problem when governors and other higher-level officials supplanted their designated representatives in the NCP decisionmaking process.⁶¹ Similarly, a Coast Guard responder who had responsibility for pre-spill planning explained that he knew that states had their own contingency plans but he did not have familiarity with them.⁶² Because their integration into the NCP decisionmaking structure is relatively limited, and state and local officials had smaller-scale plans for helping their communities, the boundaries were blurry between nationally controlled emergency response and appropriate smaller-scale efforts to support the states and communities in crisis.⁶³

The overlap in the applicable statutory regimes reinforced the uncertainty. Because the Stafford Act and NCP create opposite vertical directions of hierarchy, the decision of which one controlled determined whether states or the federal government were in the driver’s seat. Governor Bobby Jindal’s advisors reportedly struggled with this legal issue, and the Governor ultimately declared a state of emergency, which invoked the Stafford Act’s state-led response.⁶⁴ The other three Gulf Coast governors did the same, which created conflicting legal regimes across the region.⁶⁵

However, even within the NCP hierarchy, decisionmaking was complicated by all five Gulf Coast governors at times in deciding to represent their states. This representation often slowed and impeded response efforts, as it required continuous sign-off from the governors’ offices. The Commission staff report indicates that these issues were most severe in Louisiana, but took place to some extent in all of the impacted states.⁶⁶

Moreover, issues around hierarchy did not always stem from confusion.

60. *See Decision-Making Within the Unified Command*, *supra* note 34, at 18–19.

61. *See id.* at 20–21.

62. *See id.* at 20.

63. *See id.* at 21–22.

64. *Id.* at 17.

65. *See id.* at 20 n.107.

66. *See id.* at 17.

At times, key state and local actors were unhappy with their exclusion from decisionmaking and with the decisions made, which drove the second category of hierarchy issues. In those instances, they sometimes intentionally acted outside of the NCP structure. Disputes over where to place boom—“a physical barrier between oil and water or shoreline” that either attempts to “keep oil in a contained area” from which it can be skimmed or burned or attempts to “absorb oil before it can enter and damage sensitive shoreline environments”—exemplify this pattern.⁶⁷ As the federal responders made decisions to move around the boom to places that they felt were most at risk based on current tidal patterns, the states and localities losing the boom at times objected and took their own measures to maintain boom nearby.⁶⁸ Louisiana also had a significant dispute with the federal government about the appropriateness of building offshore barrier berms—“massive and costly linear sand barrier systems, seaward of the coast, adjoining or extending existing barrier islands”—to prevent oil from coming onshore; in that case, however, the National Incident Command and U.S. Army Corps of Engineers ultimately approved the full berms project after public controversy and so Louisiana’s construction of the berms took place within a (formally at least) federally controlled process.⁶⁹

BP’s direct distribution of funds to state and local governments helped to give them the ability to respond on their own when they disagreed with the federal response. Although the NCP has a structure through which states can seek up to \$250,000 from the Oil Spill Liability Trust Fund for removal costs, BP gave money directly to state and local governments outside of the unified command structure.⁷⁰ In the dispute over where boom should be laid, some states and localities then used these funds to buy boom directly and create an alternative approach to laying boom outside of the centrally controlled one.⁷¹ Although Section I.E focuses on the public–private dynamics in depth, and those dynamics crosscut many of the governance complexities, the involvement of BP in direct funding definitely reinforced the difficulties of hierarchy in the response.

Overall, then, the combination of uncertainty and discontent around hierarchy, especially among the federal and smaller-scale governmental entities involved in the spill response, made it harder for an effective response to take place. Although the NCP attempts to address questions of hierarchy and ordering, its gaps and predisaster implementation created

67. *See id.* at 33.

68. *See id.* at 17–20.

69. For an analysis of the complex dispute over Louisiana’s berms project, see Nat’l Comm’n on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling, *The Story of the Louisiana Berms Project* (Staff Working Paper No. 8, amended version 2011), available at <http://www.oilspill.com/mission.gov/sites/default/files/documents/Updated%20Berms%20Working%20Paper.pdf>.

70. *See id.* at 14.

71. *See id.*

tensions in this dimension.

D. Cooperativeness

Although concerns with hierarchy and cooperativeness are interrelated—uncertainty and disagreement over hierarchy at times led to uncooperativeness during the spill response—the two dimensions present distinct aspects of the governance challenges at issue. Hierarchy focuses on who is in control and the direction in which that authority flows, whereas cooperativeness assesses when key individuals and entities cooperate and when they conflict.⁷² Moreover, because many important actors, from the DOE to the responsible corporations to the volunteers streaming into the Gulf Coast Region, did not fully fit within the governmental hierarchy created by the NCP, their level of cooperativeness or conflict influenced the shape of the response effort.⁷³

An important difficulty lies at the heart of assessing cooperativeness: it varies over time and across issues. The very same actors may work together in one context and then conflict in another one. The most extreme example of this in the context of the spill is the relationship between the federal government and BP. Although the federal government continues to work with BP through the NCP structure, it also sued the company along with some of its subcontractors under the OPA and CWA for significant monetary damages.⁷⁴ However, many aspects of that relationship are more

72. I explored federalism scholarship on cooperativeness and conflict in my discussion of the dimension of cooperativeness in Osofsky, *supra* note 8, at 281–85. For further discussion of cooperative environmental federalism proposals, see generally WILLIAM ANDREEN ET AL., CTR. FOR PROGRESSIVE REFORM, COOPERATIVE FEDERALISM AND CLIMATE CHANGE: WHY FEDERAL, STATE, AND LOCAL GOVERNMENTS MUST CONTINUE TO PARTNER 4–10 (2008), available at http://progressiveregulation.org/articles/Cooperative_Federalism_and_Climate_Change.pdf; Holly Doremus & W. Michael Hanemann, *Of Babies and Bathwater: Why the Clean Air Act's Cooperative Federalism Framework Is Useful for Addressing Global Warming*, 50 ARIZ. L. REV. 799 (2008); Bradley C. Karkkainen, *Information-Forcing Environmental Regulation*, 33 FLA. ST. U. L. REV. 861, 884–88 (2006); Alice Kaswan, *A Cooperative Federalism Proposal for Climate Change Legislation: The Value of State Autonomy in a Federal System*, 85 DENV. U. L. REV. 791 (2008). For analyses of the role of conflict in federalism, see Jessica Bulman-Pozen & Heather K. Gerken, *Uncooperative Federalism*, 118 YALE L.J. 1256 (2009); Kirk W. Junker, *Conventional Wisdom, De-emption and Uncooperative Federalism in International Environmental Agreements*, 2 LOY. U. CHI. INT'L L. REV. 93 (2004–05); Karen Bridges, Note, *Uncooperative Federalism: The Struggle over Subsistence and Sovereignty in Alaska Continues*, 19 PUB. LAND & RESOURCES L. REV. 131 (1998). For scholarship exploring complex dynamics among cooperation and conflict, see generally Ann E. Carlson, *Federalism, Preemption, and Greenhouse Gas Emissions*, 37 U.C. DAVIS L. REV. 281 (2003); Robert L. Glicksman & Richard E. Levy, *A Collective Action Perspective on Ceiling Preemption by Federal Environmental Regulation: The Case of Global Climate Change*, 102 NW. U. L. REV. 579 (2008); Alexandra B. Klass, *State Innovation and Preemption: Lessons from State Climate Change Efforts*, 41 LOY. L.A. L. REV. 1653 (2008); Carol M. Rose, *Federalism and Climate Change: The Role of the States in a Future Federal Regime—An Introduction*, 50 ARIZ. L. REV. 673 (2008); Benjamin K. Sovacool, *The Best of Both Worlds: Environmental Federalism and the Need for Federal Action on Renewable Energy and Climate Change*, 27 STAN. ENVTL. L.J. 397 (2008); sources cited *infra* notes 129–131.

73. See *Decision-Making Within the Unified Command*, *supra* note 34, at 15, 17–18.

74. See *Complaint*, *supra* note 31, at 2–3.

nuanced. BP took numerous steps in the wake of the spill that did not conflict with the NCP directly (and often were done with the NCP's knowledge and approval), but were at times in some tension with it as described in Sections I.C and I.E. These actions included, for instance, BP's assuming a leadership role in the response based on its superior technical knowledge, establishing the Gulf Coast Claims Facility, and giving funds directly to states and localities.⁷⁵

Similarly complex patterns of cooperation and conflict emerged among the key governmental actors responding to the spill. As noted above, these patterns often stemmed from issues involving the NCP structure. Actions taking place outside the NCP structure sometimes represented conflict—such as in the dispute over boom—but at other times simply resulted from engaged officials trying to use their power to help the situation. For example, when the EPA took control of decisions surrounding the use of dispersants, that control did not necessarily represent a conflict with the NCP. The Coast Guard, the key agency in the NCP structure, co-signed those decisions.⁷⁶ Likewise, the ad hoc team comprised of the Interagency Solutions group (created by the National Incident Command), NOAA, and the Department of Agriculture made decisions about fishery closures, operating in parallel to the NCP structure without evidence of conflict with that structure.⁷⁷

Finally, the courts are serving as an important venue for resolving conflicts arising from the oil spill. As noted in Section I.A, the vast majority of the lawsuits arising from the spill involve efforts by individuals to get compensation from BP for harms suffered due to the explosion or spill.⁷⁸ These suits serve as a parallel and more adversarial mechanism for redress to the GCCF claims process. While the emergency process under the GCCF allows for complementary lawsuits, the deadline for emergency claims has passed and the final claims process requires a liability waiver.⁷⁹ In addition, the suits by the government and nongovernmental organizations under environmental law represent an adversarial effort to obtain funds from BP beyond the ones that it has voluntarily provided.⁸⁰ The litigation over the sequential moratoria, ended by the Obama Administration's decision to lift the second moratorium, provided a mechanism for disputing that policy.⁸¹

75. See *Decision-Making Within the Unified Command*, *supra* note 34, at 12–14; see also *supra* Section I.C and *infra* Section I.E.

76. See *Decision-Making Within the Unified Command*, *supra* note 34, at 8.

77. See *id.* at 9.

78. See Hals & Briand, *supra* note 40.

79. See GULF COAST CLAIMS FACILITY, FINAL RULES GOVERNING PAYMENT OPTIONS, ELIGIBILITY AND SUBSTANTIATION CRITERIA, AND FINAL PAYMENT METHODOLOGY (2011), http://www.gulfcoastclaimsfacility.com/FINAL_RULES.pdf; Osofsky, Baxter-Kauf, Hammer, Mailander, Mares, Pikovsky, Whitney & Wilson, *supra* note 39.

80. See Hals & Briand, *supra* note 40.

81. See *supra* note 21 and accompanying text.

With the major exception of litigation, then, many of the governance complexities took and continue to take place in a gray area between conflict and cooperation. While conflicts certainly existed, as described in the previous Section, the fragmentation of authority often created situations of overlap, in which key actors acted in parallel, but not necessarily in concert or conflict.

E. Public–Private Dynamics

In both the regulatory process and the spill response, the governmental regulator of deepwater drilling and the corporations involved in it have held intertwined roles that complicate governance.⁸² Legal structures, regulatory processes, and the nature of deepwater drilling together frame this interconnection. The law creates financial incentives for corporations to assume the risks of drilling, the regulatory process contains exceptions (now under reconsideration and reform) that make it easier for deepwater drilling to move forward without full examination of the risks, and the technical difficulty of the spill response combined with BP’s superior knowledge gave the company more control in the aftermath.

The applicable law incentivizes deepwater drilling through royalty arrangements that are highly favorable to the oil companies. Specifically, the 1995 Outer Continental Shelf Deep Water Royalty Relief Act (DWRRA) limits royalty payments from oil companies for both existing and new leases. Companies with existing leases do not have to pay royalties on production unless production volume or oil and gas prices rise above set levels (with some differentiation based on when the leases were acquired),⁸³ and new leases have a similar structure.⁸⁴ These royalty concessions have been upheld by the United States Court of Appeals for the Fifth Circuit,⁸⁵ and criticized by the U.S. Government Accountability Office as no longer in the interest of taxpayers, especially in light of

82. In my previous work on climate change, I decided not to include the public–private dynamics as a dimension. Although they clearly are also relevant in the context of climate change, these dynamics function differently from the other four dimensions in the context of climate change, and so I chose to consider these issues as part of other dimensions. See Osofsky, *supra* note 8. However, in the context of the BP *Deepwater Horizon* oil spill, the public–private dynamics are at the heart of many of the governance challenges in very direct ways, and so I decided to include them here despite their having a somewhat different character than the other four dimensions. J.B. Ruhl was the first person to suggest to me that this dimension should be included in my model of multidimensional governance.

83. 43 U.S.C. § 1337(a)(1) (2006).

84. *See id.* § 1337(a)(3)(C).

85. *See* Kerr-McGee Oil & Gas Corp. v. U.S. Dep’t of Interior, 554 F.3d 1082, 1086–87 (5th Cir. 2009) (holding that DWRRA “does not grant [the Department of the] Interior the authority to impose price thresholds that suspend royalty relief at production volumes less than those established by Congress in [DWRRA]”). For a discussion of this case, see Keith Hall, *Mineral Law: Outer Continental Shelf Deep Water Royalty Relief Act*, 57 LA. B.J. 53 (2009), available at <http://www.lsba.org/documentindex/publications/Journal-June2009.pdf>.

production increases.⁸⁶ Although legislation has been introduced in Senate to repeal DWRAA, it has not made it out of committee and its passage seems unlikely.⁸⁷ The current legal structure thus serves as a public mechanism to induce private behavior by limiting public financial benefits. In so doing, it serves to shift some of the financial risk and high up-front costs of deepwater drilling from oil companies to the government.

This public-private risk- and cost-shifting has continued into the regulatory process, although that process is currently being reassessed and reworked in light of the spill. The National Environmental Policy Act (NEPA)⁸⁸ sets out the requirements for environmental review of projects, like these deepwater drilling ones, that involve federal action, such as funding. The risks that the projects involve and the extent of prior review determines how rigorous environmental review must be; the more rigorous the review required, the more expensive that review is for the companies involved. In particular, NEPA provides for three levels of environmental review: (1) Environmental Impact Statement (EIS) (most rigorous level of review, for significant environmental impacts);⁸⁹ (2) Environmental Assessment (EA) (medium level of review when more uncertainty exists about significant environmental impacts);⁹⁰ and (3) Categorical Exclusion (CE) (exception from review on the basis of prior determination of no significant environmental impacts).⁹¹ With respect to the oil well at issue in the BP *Deepwater Horizon* oil spill, MMS conducted a less rigorous review than its stated typical approach. Although the MMS conducted an EIS for the development of a five-year program and an EIS for the plan for a specific lease sale followed by an EA for a second lease sale with no significant new impact (in accord with its stated approach), it provided only a CE rather than an EIS for the oil exploration plan that allowed the drilling to commence.⁹²

This categorical exclusion has resulted in much public criticism of the

86. See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-07-682T, ROYALTIES COLLECTION: ONGOING PROBLEMS WITH INTERIOR'S EFFORTS TO ENSURE A FAIR RETURN FOR TAXPAYERS REQUIRE ATTENTION 7-8 (2007), available at <http://www.gao.gov/new.items/d07682t.pdf> (testimony of Mark Gaffigan, acting Director of Natural Resources and Environment, before the Committee on Natural Resources, U.S. House of Representatives). Although companies were previously allowed to pay royalties in-kind, Secretary Salazar eliminated that option. See U.S. DEP'T OF INTERIOR, REFORMING MMS: JANUARY 2009-PRESENT (2010), available at <http://www.doi.gov/deepwaterhorizon/upload/05-07-10-reform-fact-sheet.pdf>.

87. Deepwater Drilling Royalty Relief Prohibition Act, S. 388, 112th Cong. (2011), available at <http://www.gpo.gov/fdsys/pkg/BILLS-112s338is/pdf/BILLS-112s338is.pdf>.

88. National Environmental Policy Act of 1969, 42 U.S.C. § 4332 (2006).

89. 40 C.F.R. § 1508.11 (2010).

90. *Id.* § 1508.9.

91. *Id.* § 1508.4; see also KRISTINA ALEXANDER, CONG. RESEARCH SERV., R41265, THE 2010 OIL SPILL: THE MINERALS MANAGEMENT SERVICE (MMS) AND THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) 1-2 (2010), available at http://assets.opencrs.com/rpts/R41265_20100604.pdf.

92. ALEXANDER, *supra* note 91, at 3.

regulatory process,⁹³ and the Department of the Interior is currently reassessing the way in which it applies NEPA to offshore oil leases.⁹⁴ While this review process takes place, the DOI is restricting its grant of categorical exclusions significantly.⁹⁵ However, under the policy prior to the BP *Deepwater Horizon* spill, the use of categorical exclusions under NEPA allowed the exploration to move forward without full environmental risk assessment, which served to facilitate private behavior and to increase public risks.

Public-private dynamics have continued to be complex in the aftermath of the spill due to the highly technical nature of the spill response. In general, the NCP ensures that the responsible corporate actor plays a key role in the response, as it establishes a partnership role for that corporation. Although several companies were involved with the *Deepwater Horizon* rig and the problems that led to the spill, both the NCP and OPA designate the lessee/permittee, which in this case is BP, as the responsible party.⁹⁶

The nature of the spill has made BP's role in the response even more significant. Because the oil companies have more technological knowledge than the government about what type of response might work, BP and other assisting companies played a lead role in framing the options in the aftermath of the spill. In addition, BP controlled access to the site itself, which limited the government and independent scientists' ability to assess the flow rate and containment solutions.⁹⁷ As noted above, BP also provided funding to states and localities outside of the NCP structure.⁹⁸ These actual ways in which BP controlled the response, together with its initial joint press conferences with the government, reinforced public perception of a high level of BP control over the process.⁹⁹ Thus, the cleanup, like the regulatory process that preceded the spill, was complicated by blurry public-private relationships that constrained the

93. See *id.* at 11–16. For critiques of the federal government for not applying NEPA rigorously enough and proposals for the future, see Michael Barsa & David Dana, *Reconceptualizing NEPA to Avoid the Next Preventable Disaster*, 38 B.C. ENV. AFFAIRS L. REV. 219 (2011), Oliver A. Houck, *Worst Case and the Deepwater Horizon Blowout: There Ought to Be a Law*, 24 TUL. ENVTL. L.J. 1, 12–18 (2010), and Sandra B. Zellmer, Robert L. Glicksman & Joel A. Mintz, *Throwing Precaution to the Wind: NEPA and the Deepwater Horizon Blowout*, J. ENERGY & ENV. L. (forthcoming 2011). For an analysis of regulatory capture and how to avoid it through institutional design, including in the context of the BP *Deepwater Horizon* oil spill, see generally Rachel E. Barkow, *Insulating Agencies: Avoiding Capture Through Institutional Design*, 89 TEX. L. REV. 15 (2010).

94. See Press Release, U.S. Dep't of Interior, *Categorical Exclusions for Gulf Offshore Activity to Be Limited While Interior Reviews NEPA Process and Develops Revised Policy* (Aug. 16, 2010), available at <http://www.doi.gov/news/pressreleases/Categorical-Exclusions-for-Gulf-Offshore-Activity-to-be-Limited-While-Interior-Reviews-NEPA-Process-and-Develops-Revised-Policy.cfm>.

95. See *id.*

96. See *Decision-Making Within the Unified Command*, *supra* note 34, at 10.

97. See *id.* at 12.

98. See *supra* notes 70–71 and accompanying text.

99. See *Decision-Making Within the Unified Command*, *supra* note 34, at 13–14.

government's ability to minimize risk and respond.

Together, the complex dynamics taking place in all five of these dimensions present major governance challenges that cannot be solved simply by addressing individual problems in a piecemeal fashion. The regulatory process and spill response are rife with crosscutting interactions of law and of governmental and nongovernmental entities, each of which poses difficult governance issues. Cumulatively, these issues create a daunting morass. The Parts that follow attempt to find a way out of this morass by considering the nature of the challenges and proposing strategies for better governance.

II. CORE GOVERNANCE CHALLENGES OF COMPLEXITY

The most fundamental governance challenge highlighted by these five dimensions is complexity. Deepwater drilling pushes the outer boundaries of our technological capabilities. The full extent of the ecological and human health consequences of the spill will become clearer only over a long time span. Most fundamental to this Article's analysis, the legal system designed to regulate this industry and prevent disaster has a tremendous number of pieces that do not work neatly together but are still dependent on one another. This Part dissects the intertwined challenges that make regulatory progress in this context complex.

As the analysis in Part I highlights, each aspect of regulating both deepwater drilling and resulting oil spills contains nuance. Numerous scholars and policymakers are exploring how to improve individual pieces of this regulatory system and analyzing the many types of tensions flowing through it. Substantively, each of the applicable legal regimes and their interaction is controversial. For example, what is the appropriate level of NEPA review of deepwater drilling projects and how should those reviews deal with uncertainty and worst case scenarios? Which individuals and entities should be included in the planning and response team of National Contingency Plan and when is action outside of the plan appropriate? Should the government set standards and check if companies are meeting them, or should companies be required to prove safety? Can the law escape capture by the influence of powerful oil corporations and manage to regulate them adequately?¹⁰⁰

100. See *supra* Part I. The *Tulane Environmental Law Journal* devoted a special issue in Fall 2010 to exploring these issues. See generally Houck, *supra* note 93. For analyses of systemic regulatory failures beyond the National Commission's report, see ALYSON FLOURNOY ET AL., CTR. FOR PROGRESSIVE REFORM, REGULATORY BLOWOUT: HOW REGULATORY FAILURES MADE THE BP DISASTER POSSIBLE, AND HOW THE SYSTEM CAN BE FIXED TO AVOID A RECURRENCE (2010) [hereinafter REGULATORY BLOWOUT], available at http://www.progressivereform.org/articles/BP_Reg_Blowout_1007.pdf; Alyson Flournoy, *Three Meta-Lessons Government and Industry Should Learn from the BP Deepwater Horizon Disaster and Why They Will Not*, 38 B.C. ENV. AFFAIRS L. REV. 281 (2011); Zygmunt J.B. Plater, *Learning from Disasters: Twenty-One Years After the Exxon Valdez Oil Spill, Will Reactions to the Deepwater Horizon Blowout Finally*

However, a functional governance approach to the front- and back-end regulation of the crisis highlighted by the BP *Deepwater Horizon* oil spill must simultaneously answer all of these questions and many more. Certainly, improvement on individual pieces is important and represents progress; to the extent that particular regulatory failures made the spill more likely and the response less functional, fixing those specific problems is important. But more fundamental progress requires grappling with the big picture, as messy as it is. The interdependence within the regulatory system, as Professor J.B. Ruhl has explored in his work on complexity, is what makes the governance problem here “complex” rather than merely “complicated.” Solutions cannot simply fix the system one aspect at a time, but have to take into account the impact of addressing a particular problem on the other moving parts.¹⁰¹ As the work of Ruhl and others in the environmental law literature drawing from adaptive management—one of the key streams that underlies Part III’s proposed solutions—highlights, these pieces function in a system, and addressing one question often impacts the possible answers to other questions.¹⁰²

Deepwater drilling and oil spills are not, of course, the only area of law in which this complexity problem occurs. Even a cursory consultation of recent legal literature reveals that almost every substantive area of law is currently grappling with complexity. An explosion of legal scholarship focusing on complexity has occurred over the last few years, covering a wide range of topics from jury deliberation to the financial crisis to complex civil litigation. The difficulty at the heart of much of this scholarship and the fundamental challenge of this Article, however, is that complexity is easier to identify than resolve.¹⁰³

Address the Systemic Flaws Revealed in Alaska?, 40 ENVTL. L. REP. 11,041 (2010), available at <http://www.elr.info/articles/vol40/40.11041.pdf>.

101. J.B. Ruhl, *Law’s Complexity: A Primer*, 24 GA. ST. U. L. REV. 885, 890–901 (2008).

102. See *id.* at 901–08 (exploring how adaptive management principles might be used in legal institutional design); see also sources cited *supra* note 100. See generally Michael Ilg, *Complexity, Environment, and Equitable Competition: A Theory of Adaptive Rule Design*, 41 GEO. J. INT’L L. 647, 649–50 (2010) (exploring principles for designing adaptive systems).

103. See generally William Ewald, *The Complexity of Sources of Trans-National Law: United States Report*, 58 AM. J. COMP. L. (SUPP.) 59 (2010) (comparing the challenges facing U.S. and E.U. efforts to address the complexity of transnational law); Gregory Todd Jones, *Sustainability, Complexity, and the Negotiation of Constraint*, 44 TULSA L. REV. 29, 49–50 (2008) (“If we embrace uncertainty and respond with light-handed institutional design that considers ranges of solutions borne from diverse networks of trust—if we practice inclusiveness while being willing to stay with conflict rather than obsess on its resolution—and if we strive to identify order in the otherwise paralyzing consequences of path dependence, we may be fortunate enough to find those momentary eddies in the endlessly complex and turbulent flux—momentary eddies to offer a brief repose before presented with the next challenge to the sustainability of our species and our planet.”); Jeffrey M. Lipshaw, *The Epistemology of the Financial Crisis: Complexity, Causation, Law, and Judgment*, 19 S. CAL. INTERDISC. L.J. 299, 299–305, 343–51 (2010) (analyzing the way in which complexity played a role in the financial crisis and stymies efforts to prevent future crises); Matthew A. Reiber & Jill D. Weinberg, *The Complexity of Complexity: An Empirical Study of Juror Competence in Civil Cases*, 78 U. CIN. L. REV. 929, 960–63, 967–68 (2010) (finding that juror comprehension declines as complexity increases and proposing reforms); Steven L. Schwarcz, *Regulating*

This Part focuses on the task of identification to provide the base for the next Part's efforts at resolution. It highlights four major components of the complex governance challenge posed by the multidimensional aspects of the drilling and spill response. First, it considers the ways in which scientific and legal uncertainty interact with efforts to create an effective regulatory approach. It then examines the ways in which the relevant law is both overlapping and fragmented, and the dangers of both over- and underregulation which result. It next analyzes the difficulties of balancing efficiency and inclusion to achieve appropriate regulatory interactions. Finally, it discusses the inequality permeating each of the dimensions and the justice problems which result.

A. *Scientific, Technological, and Legal Uncertainty*

The process of deepwater drilling and the oil spill response both involve massive scientific and technological uncertainty that have translated into legal uncertainty. This Section considers the uncertainties involved in both contexts, and the ways in which they contribute to complex governance challenges taking place within the five dimensions analyzed in Part I.

Although offshore drilling first took place in the 1930s, using platforms connected to the shore, the last decade has seen a dramatic increase in drilling in deep and ultradeep water, due to technological improvements in relevant equipment. Deep and ultradeep water drilling pose many challenges and risks because of the pressure and temperatures involved, among other factors. As deeper drilling has become technologically possible, operations take place on a seabed under thousands of feet of water, where the pressure is high and the temperature is cold. The oil is located many thousands of feet below that (at times, over 30,000 feet below the surface), where the pressure is even higher and the temperature is hot.¹⁰⁴ The drilling site has to be kept stable from thousands of feet above while the oil is removed and transported via pipelines to shore.¹⁰⁵ In addition, the geologic formation in which the oil is located may not be very stable. One of the reasons that BP and other companies made some of technical choices that increased the risk of a blowout was a concern over putting too much pressure on a rock formation that already showed

Complexity in Financial Markets, 87 WASH. U. L. REV. 211 (2009) (analyzing the role of complexity in causing the financial crisis and possibilities for addressing it); Carolyn Shapiro, *Coding Complexity: Bringing Law to the Empirical Analysis of the Supreme Court*, 60 HASTINGS L.J. 477 (2009) (considering the way in which coding choices frame the information available in the U.S. Supreme Court database); Louise Ellen Teitz, *Complexity and Aggregation in Choice of Law: An Introduction to the Landscape*, 14 ROGER WILLIAMS U. L. REV. 1 (2009) (exploring the way in which aggregation decisions interact with choice of law).

104. See NATIONAL COMMISSION REPORT, *supra* note 1, at 48, 51.

105. See *id.* at 21, 41–52.

instability.¹⁰⁶

With respect to particular laws, the level of uncertainty may be limited or resolvable. While debates are taking place about the value of the royalty regime or about when NEPA categorical exclusions should be granted, these regulatory approaches are in the process of restabilizing and, once they do, likely will not cause major uncertainties. Similarly, combinations of statutory law and judicial interpretation establish the waters and seabed controlled by the state and federal governments and the extent to which states will receive compensation for their risks.¹⁰⁷

But the technological and scientific uncertainty of deepwater drilling, paired with multiple sources of federal authority, has created intertwined barriers to effective governance. First, the regulatory regime and enforcement has had trouble keeping up with the pace of technology. The Commission found that the requirements often lagged behind the technology and that the agencies were inadequately funded to enforce those requirements.¹⁰⁸ Second, this problem was exacerbated by horizontal interactions; the Executive Branch made decisions to shift more responsibility to both the MMS and Coast Guard over time without providing them with accompanying resources, which created an impossible governance situation.¹⁰⁹ Finally, as discussed in Section I.B, the shared governance authority between DOI and the Coast Guard has created further uncertainty in the horizontal dimension. The two entities have had to navigate the dimension of hierarchy to establish a cooperative, complementary regulatory regime.¹¹⁰

The spill created three primary scientific and technological uncertainties. First, neither the corporate nor governmental actors were technically capable of stopping the spill quickly, and as analyzed in Section I.E, the corporate actors had greater technological know-how. This knowledge imbalance made initial governmental control over the response difficult, and regulators slowly gained more control over time as their technological understanding improved. Second, the governmental regulators did not know how much oil was spilling into the ocean.¹¹¹ BP's control over access to the site itself added to this uncertainty, as it limited independent efforts to assess the flow rate and volume of the spill.¹¹² The underestimation of the spill rate explains some of the failed efforts at

106. *See id.* at 90–100, 118–19. For an analysis of the complexities of regulating deepwater oil production technology, see Mark A. Latham, *Five Thousand Feet and Below: The Failure to Adequately Regulate Deepwater Oil Production Technology*, 38 B.C. ENV. AFFAIRS L. REV. 343 (2011).

107. *See supra* Part I.

108. *See* NATIONAL COMMISSION REPORT, *supra* note 1, at 72–76.

109. *See id.* at 72–73.

110. *See supra* Section I.B.

111. NATIONAL COMMISSION REPORT, *supra* note 1, at 146–47.

112. *Decision-Making Within the Unified Command*, *supra* note 34, at 12.

containment.¹¹³ Finally, the spill's interaction with the surrounding ecosystem, including humans, was and is rife with uncertainties. Currents and storms made the path of the oil difficult to predict.¹¹⁴ The less well understood deepwater location paired with the use of unprecedented quantities of dispersants, both at depth and on the surface, exacerbated these difficulties. Although some harms resulting from the oil and dispersants interacting with the ecosystem and people are already clear, many more resulting injuries will likely arise over time.¹¹⁵ Moreover, uncertainties will exist, especially because the Gulf Coast is less pristine than the Prince William Sound, regarding whether the oil and dispersants from this spill, rather than pollutants from other sources, have caused particular injuries.¹¹⁶

As with the drilling itself, the legal regime applicable to the spill has limited capacity to respond to this scientific and technical uncertainty effectively. Beyond the above-described funding issues that constrained the government's technical capacity to direct BP, the uncertainties surrounding how authority was structured under the NCP and when authority would flow from the NCP as opposed to directly from key governmental actors created significant regulatory confusion and conflict.¹¹⁷ That legal uncertainty also accompanied compensation, as parallel and to some extent conflicting mechanisms were established under existing law.¹¹⁸

Together, the scientific, technical, and legal uncertainty, as well as the difficulty regulators had in responding to them, created governance problems with respect to deepwater drilling and the spill response. While many committed individuals representing governmental entities at multiple levels attempted to respond to the spill diligently and to represent their affected citizens' interests zealously, these uncertainties made it harder for them to do so effectively.

An extensive scholarly literature explores uncertainty, including particular analysis of scientific uncertainty. Beyond the uncertainties caused by the way in which complex ecosystems change over time, geographers and ecologists have also considered the way in which the scale

113. NATIONAL COMMISSION REPORT, *supra* note 1, at 129–71.

114. *Id.* at 174–75.

115. *Id.* at 182. For example, in the aftermath of this spill, a group of scientists involved in a study funded by the National Science Foundation have found that deep water spills display different apportionments of hydrocarbon transfers into the water column and atmosphere than sea surface spills. See Christopher M. Reddy et al., *Composition and Fate of Gas and Oil Released to the Water Column During the Deepwater Horizon Oil Spill*, PNAS Early Edition, July 18, 2011, available at <http://www.pnas.org/content/early/2011/07/15/1101242108.full.pdf+html?with-ds=yes>; National Science Foundation, Press Release, Chemical Make-up of Gulf of Mexico Plume Determined, July 18, 2011, http://www.nsf.gov/news/news_summ.jsp?cntn_id=120962&WT.mc_id=USNSF_51&WT.mc_ev=click.

116. See Rice, *supra* note 3, at 59–67; NATIONAL COMMISSION REPORT, *supra* note 1, at 140–213.

117. NATIONAL COMMISSION REPORT, *supra* note 1, at 138–39.

118. See *supra* Part I; NATIONAL COMMISSION REPORT, *supra* note 1, at 185–86.

of the inquiry, and the framing of that scale, impacts the analysis. Professor Nathan F. Sayre has brought these literatures together in his work on scale, with important insights into the way in which moves between levels take place and the limits of thinking about scale hierarchically.¹¹⁹ Sayre's intertwining of geographical and ecological understandings of scale is particularly important in this context because the oil spill response must navigate not only the legal scales involved, but also the ecosystem scales. Professor Itzhak Kornfeld, for example, has criticized NOAA for its piecemeal assessment of natural resource damages that does not consider the value of the ecosystem as a whole.¹²⁰ The oil and dispersants are simultaneously interacting with large ecosystems and very specific localized ones, as well as with other scales in between, which in turn interact with and help to constitute one another.

Although the problems posed by uncertainty, like the broader problems of complexity, are easier to identify than to solve, scholars have explored legal strategies for addressing uncertainty.¹²¹ For example, in the international environmental law context, Professor Jorge E. Vinales has considered techniques for addressing scientific uncertainty at each stage of regime development.¹²² A number of these scholarly analyses have focused on the benefits and limitations of the precautionary principle, which mandates caution in the face of uncertainty.¹²³ Others have examined the way in which policymakers and politics interact with science and its uncertainties.¹²⁴ This literature, particularly as it connects to adaptive

119. Nathan F. Sayre, *Ecological and Geographical Scale: Parallels and Potential for Integration*, 29 PROGRESS HUM. GEOGRAPHY 276, 281 (2005). In my previous work, I have brought together Sayre's work with that of Professor Holly Doremus to analyze scalar interactions in the context of *Massachusetts v. EPA*. See Hari M. Osofsky, *The Intersection of Scale, Science, and Law in Massachusetts v. EPA*, 9 OR. REV. INT'L L. 233, 233–36 (2007).

120. Itzhak E. Kornfeld, *Of Dead Pelicans, Turtles, and Marshes: Natural Resources Damages in the Wake of the BP Deepwater Horizon Spill*, 38 B.C. ENV. AFFAIRS L. REV. 317 (2011).

121. For an interesting examination of the way in which scientific and technological change are reshaping law, see Joseph W. Dellapenna, *Law in a Shrinking World: The Interaction of Science and Technology with International Law*, 88 KY. L.J. 809 (1999-2000).

122. Jorge E. Vinales, *Legal Techniques for Dealing with Scientific Uncertainty in Environmental Law*, 43 VAND. J. TRANSNAT'L L. 437 (2010).

123. See, e.g., Chang-fa Lo, *Risks, Scientific Uncertainty and the Approach of Applying Precautionary Principle*, 28 MED. & L. 283 (2009); Lesley Wexler, *Limiting the Precautionary Principle: Weapons Regulation in the Face of Scientific Uncertainty*, 39 U.C. DAVIS L. REV. 459 (2006).

124. See, e.g., RONALD D. BRUNNER ET AL., ADAPTIVE GOVERNANCE: INTEGRATING SCIENCE, POLICY, AND DECISION MAKING (2005); RESCUING SCIENCE FROM POLITICS: REGULATION AND THE DISTORTION OF SCIENTIFIC RESEARCH (Wendy Wagner & Rena Steinzor eds., 2006); Holly Doremus, *Listing Decisions Under the Endangered Species Act: Why Better Science Isn't Always Better Policy*, 75 WASH. U. L.Q. 1029 (1997); Holly Doremus & A. Dan Tarlock, *Science, Judgment, and Controversy in Natural Resource Regulation*, 26 PUB. LAND & RESOURCES L. REV. 1 (2005); Holly Doremus, *Science Plays Defense: Natural Resource Management in the Bush Administration*, 32 ECOLOGY L.Q. 249 (2005); Holly Doremus, *The Purposes, Effects, and Future of the Endangered Species Act's Best Available Science Mandate*, 34 ENVTL. L. 397 (2004); Donald T. Hornstein,

management models, is one of the streams of thinking that forms the basis for the solutions proposed in Part III.

B. *Legal Overlap and Fragmentation*

Simultaneous legal overlap and fragmentation exacerbated the governance challenges posed by uncertainty described in Section II.A. While some of this structure stems from the crosscutting nature of deepwater drilling and oil spills, the emergency situation posed by the spill also revealed inadequacies in the relevant law. This Section discusses the ways in which relevant law both overlaps and is divided into fragmented silos, as well as conceptual models for handling these issues more effectively.

As the description of Part I reveals, these problems of overlap and fragmentation—in both the legal framework and the governmental entities involved—pervade almost every aspect of deepwater drilling regulation and spill response. The applicable international law's establishment of duties for both flag states and host states creates a foundational regulatory overlap between the United States and the Marshall Islands. Within the United States, while the vertical overlap in regulating deepwater drilling is relatively limited due to the Submerged Lands Act, OSCLA, and CZMA, horizontal overlap exists between DOI and the Coast Guard. Moreover, the number of corporations involved, with their incorporation in multiple jurisdictions, adds additional regulatory complexity.¹²⁵

These overlaps translate into fragmentation in drilling regulation because each of the relevant governments is acting based on different regulatory authority. While efforts at coordination take place throughout the process—most notably in the U.S. context, between the Coast Guard and DOI—this fragmented structure forms a critical piece of the complexity that makes governance difficult.

The oil spill response provides even more overlap and fragmentation, as it involves many governmental entities at multiple levels of government. The NCP, itself emerging from multiple statutes,¹²⁶ attempts to address this problem by providing a plan for organizing the different functions under central authority. That approach limited the problems of overlap and fragmentation in the aftermath of the BP *Deepwater Horizon* oil spill, but as discussed above, it did not fully resolve them. The plan itself lacked adequate buy-in from higher level state and local governmental actors, did not include some key agencies such as the DOE, and contained ambiguities about how the National Incident Commander, Federal On-Scene Commander, and Incident Command Posts should interact. Those involved

Accounting for Science: The Independence of Public Research in the New, Subterranean Administrative Law, 66 LAW & CONTEMP. PROBS. 227 (2003).

125. See *supra* Part I.

126. See *supra* note 33 and accompanying text.

with the response, especially key leaders within the NCP structure, worked to resolve these ambiguities and create coordinated, bifurcated authority, but many actions took place under other authority outside of the NCP structure.¹²⁷

As with complexity and uncertainty, extensive legal and interdisciplinary scholarship has engaged overlap and fragmentation. In the U.S. dynamic environmental federalism context, in particular, scholars and policymakers have debated whether overlap leads to over- or underregulation and how it impacts effectiveness.¹²⁸ For instance, Professor William Buzbee, part of an innovative group of scholars at Emory University School of Law analyzing “intersystemic governance,” has engaged in particularly thoughtful analyses of these issues, exploring why regulatory overlap can lead to under- rather than overregulation and the ways in which allowing some overlap (by floor rather than ceiling federal preemption) can lead to more effective regulation.¹²⁹ In a broader substantive context, Dean Erwin Chemerinsky has examined the ways in which federalism can serve to empower complex governance of hard problems through acknowledging overlapping authority in most circumstances.¹³⁰

A number of other theories, some of which traditionally form part of international and transnational law discussions, similarly explore how to structure orderings in which some level of overlap and fragmentation persist. Some approaches, like the New Haven School and global legal pluralism, discuss the need for legal strategies that take into account the many formal and informal behaviors which constitute authoritative decisionmaking grounded in effective power.¹³¹ Others, like new

127. See *supra* Part I.

128. See William W. Buzbee, *Recognizing the Regulatory Commons: A Theory of Regulatory Gaps*, 89 IOWA L. REV. 1, 22 (2003).

129. See *id.*; William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547 (2007). For other examples of the scholarship exploring how to structure overlapping, multiscalar regulatory approaches from this intersystemic governance group, see ROBERT A. SCHAPIRO, *POLYPHONIC FEDERALISM: TOWARD THE PROTECTION OF FUNDAMENTAL RIGHTS* (2009); Ahdieh, *Dialectical Regulation*, *supra* note 9.

130. See Erwin Chemerinsky, *Empowering States When It Matters: A Different Approach to Preemption*, 69 BROOK. L. REV. 1313, 1328–32 (2004). For additional interesting scholarship examining complex and shifting dynamics in the context of overlapping regulatory authority, see generally Craig Anthony (Tony) Arnold, *The Structure of the Land Use Regulatory System in the United States*, 22 J. LAND USE & ENVT. L. 441 (2007); Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097, 1099 (2009); Daniel C. Esty, *Revitalizing Environmental Federalism*, 95 MICH. L. REV. 570, 571 (1996).

131. For an example of the New Haven School analysis of authoritative decisionmaking grounded in effective power, see Myres S. McDougal, W. Michael Reisman & Andrew R. Willard, *The World Community: A Planetary Social Process*, 21 U.C. DAVIS L. REV. 807 (1988). For a broader discussion of the goals of the New Haven School, see 1 HAROLD D. LASSWELL & MYRES S. MCDUGAL, *JURISPRUDENCE FOR A FREE SOCIETY: STUDIES IN LAW, SCIENCE AND POLICY* xxix (1992). For examples of global legal pluralism scholarship, see generally Ahdieh, *Dialectical Regulation*, *supra* note 9; Diane Marie Amann, *Abu Ghraib*, 153 U. PA. L. REV. 2085 (2005); Diane Marie Amann, *Calling Children to Account: The Proposal for a Juvenile Chamber in the Special*

governance and regulatory institutions scholars, propose ways in which regulatory choices could more effectively incorporate a multiplicity of actors in formal and informal interactions.¹³² Part III's exploration of solutions draws from these intertwined conceptual models of regulatory overlap.

C. *Balancing Efficiency and Inclusivity*

The regulatory complexity, with its overlap and fragmentation, frames a related, but distinct, challenge: balancing efficiency and inclusivity. In order to be effective, legal approaches to deepwater drilling and oil spill response need to somehow include all of the key actors; as illustrated by some of the difficulties of the spill response, this inclusion is necessary for buy-in and coordinated action. However, the more actors who are included and/or the more authority is divided, the more ungainly decisionmaking becomes, a problem that also arose in the aftermath of the spill.

This Section analyzes the sometimes competing goals of efficiency and inclusion, and compares the way in which they have been handled in this context with models of balancing these goals. It considers the regulatory structure under the DOI, the disaster planning process, and the spill response as examples of these dynamics. It then builds from these examples to analyze how different conceptual models might approach these dilemmas.

The structure of deepwater drilling regulation under the DOI exemplifies these tensions in the struggles over how much to streamline authority. At first blush, the increasing consolidation of offshore drilling under MMS prior to the BP *Deepwater Horizon* oil spill appeared to serve the goals of efficiency. Such consolidation ensured that one agency

Court for Sierra Leone, 29 PEPP. L. REV. 167 (2001); Elena A. Baylis, *Parallel Courts in Post-Conflict Kosovo*, 32 YALE J. INT'L L. 1 (2007); Paul Schiff Berman, *Global Legal Pluralism*, 80 S. CAL. L. REV. 1155 (2007); William W. Burke-White, *International Legal Pluralism*, 25 MICH. J. INT'L L. 963 (2004); 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); Ralf Michaels, *The Re-State-Ment of Non-State Law: The State, Choice of Law, and the Challenge from Global Legal Pluralism*, 51 WAYNE L. REV. 1209 (2005).

132. For examples of new governance scholarship beyond the above-cited piece by Ruhl and Salzman (see Ruhl & Salzman, *supra* note 6), see generally LAW AND NEW GOVERNANCE IN THE EU AND US (Gráinne de Búrca & Joanne Scott eds., Hart Publ'g 2006); Bradley C. Karkkainen, Reply, "New Governance" in *Legal Thought and in the World: Some Splitting as Antidote to Overzealous Lumping*, 89 MINN. L. REV. 471, 471-75 (2004); Orly Lobel, Surreply, *Setting the Agenda for New Governance Research*, 89 MINN. L. REV. 498, 498 (2004); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV. 342 (2004). For examples of scholarship from the Regulatory Institutions Network at Australia National University, see Valerie Braithwaite, *Ten Things You Need to Know About Regulation and Never Wanted to Ask*, RegNet Occasional Paper No. 10 (2006), available at <http://ctsi.anu.edu.au/publications/occasionalpapers.htm>; Charlotte Wood, Mary Ivec, Jenny Job & Valerie Braithwaite, *Applications of Responsive Regulatory Theory in Australia and Overseas*, RegNet Occasional Paper No. 15 (2010), available at <http://ctsi.anu.edu.au/publications/occasionalpapers.htm>.

understood and controlled the whole picture of deepwater drilling. However, as the National Commission Report indicates, this consolidation was ultimately disastrous, in part because of underfunding and in part because of the conflicting goals of maximizing drilling and also regulating it properly.¹³³ The ongoing reorganization of the pre-spill MMS aims to strike a different balance. It prioritizes division of the conflicting missions into separate agencies in order to minimize conflicts of interest, even though the cost of doing so is increased bureaucratic bifurcation.¹³⁴

Disaster planning under the NCP represents another variation on these issues. In the NCP structure, a specified set of agencies and a limited number of state governmental participants work together to come up with disaster plans. As became clear in the aftermath of the spill, the limited set of actors involved in this planning process led to insufficient buy-in by key state government officials and important federal regulatory agencies. This underinclusiveness thus played an important role in some of the regulatory redundancy and conflicts in the aftermath of the spill.¹³⁵ However, even to the extent that these experiences cause a reworking of the NCP disaster planning process to make it more inclusive, hard questions will persist about which individuals and entities should be added to the planning process to make sure it does not become so cumbersome that it is dysfunctional.

The response to the disaster under the NCP plan and outside of it serves as yet another variation on these themes. The NCP plan itself attempts to balance inclusiveness and efficiency by placing a large number of entities with fragmented but overlapping authority under the authority of designated individuals. This approach centralizes authority for the sake of efficiency and effectiveness, but not at the expense of inclusiveness. Unfortunately, as described above, this system did not achieve the desired results in practice because individuals and entities that were under the plan and not covered by it took parallel action that sometimes conflicted with NCP efforts.¹³⁶ These difficulties raise questions about whether these issues could be most successfully addressed through a better NCP, tighter enforcement of the plan, or a different regulatory approach altogether that assumes parallel activity.

As with the other two governance challenges described above, an extensive scholarly literature grapples with how to address this balancing element of complexity. For example, a core focus of the New Haven School, global legal pluralism, new governance, and regulatory institutions scholarship is how to create more inclusive and effective institutional structures that acknowledge the full range of relevant actors and

133. See NATIONAL COMMISSION REPORT, *supra* note 1, at 55–85.

134. See *id.*; see also *supra* note 44 and accompanying text.

135. See *supra* Section I.D.

136. See *supra* Part I.

interactions in their governance strategies.¹³⁷

An important element of these inclusion questions, especially in the context of the BP *Deepwater Horizon* oil spill, is regulatory scale. Significant issues of inclusion and efficiency arose around the involvement, or lack thereof, of subnational governmental actors in the formulation and implementation of the NCP. The dynamic environmental federalism scholarship is particularly helpful in this context, because it moves beyond debates over which level of government should dominate to instead explore how best to structure multilevel regimes.¹³⁸

The geography literature on scale also assists such an analysis through its nuanced debates over the nature of what constitutes scale. Specifically, scholars like Professors Kevin R. Cox and Julie Cidell have demonstrated the ways in which scales are constituted by interactions with other scales and the individuals within them,¹³⁹ and Professors Sallie Marston, Neil Brenner, and Mark Purcell have debated the particular ways in which scales intersect with complex social, economic, cultural, and political processes.¹⁴⁰ As analyzed in Part III, the layered understanding provided by these literatures of the ways in which dynamics at different levels of government are constituted and interacting with one another could help to frame more effective governance approaches in the context of deepwater drilling and the oil spill.

137. For key texts in these literatures, see *supra* notes 128–32 and accompanying text.

138. For in-depth analyses of this scholarship beyond the above-discussed works of Buzbee, *supra* notes 128 & 129, and Ruhl & Salzman, *supra* note 6, see Kirsten H. Engel, *Harnessing the Benefits of Dynamic Federalism in Environmental Law*, 56 EMORY L.J. 159 (2006) and Osofsky, *supra* note 8.

139. See Julie Cidell, *The Place of Individuals in the Politics of Scale*, 38 AREA 196 (2006); Kevin R. Cox, *Spaces of Dependence, Spaces of Engagement and the Politics of Scale, or: Looking for Local Politics*, 17 POL. GEOGRAPHY 1 (1998) [hereinafter Cox, *Spaces of Dependence*]. For additional commentary on Cox's approach, see Kevin R. Cox, *Representation and Power in the Politics of Scale*, 17 POL. GEOGRAPHY 41 (1998) [hereinafter Cox, *Representation and Power*]; Katherine T. Jones, *Scale as Epistemology*, 17 POL. GEOGRAPHY 25 (1998); Dennis R. Judd, *The Case of the Missing Scales: A Commentary on Cox*, 17 POL. GEOGRAPHY 29 (1998); Michael Peter Smith, *Looking for the Global Spaces in Local Politics*, 17 POL. GEOGRAPHY 35 (1998); Lynn A. Staeheli, *Globalization and the Scales of Citizenship*, 19 GEOGRAPHY RES. F. 60 (1999).

140. See Neil Brenner, *The Limits to Scale? Methodological Reflections on Scalar Structuration*, 25 PROGRESS HUM. GEOGRAPHY 591 (2001); Sallie A. Marston & Neil Smith, *States, Scales and Households: Limits to Scale Thinking? A Response to Brenner*, 25 PROGRESS HUM. GEOGRAPHY 615 (2001); Sallie A. Marston, *The Social Construction of Scale*, 24 PROGRESS HUM. GEOGRAPHY 219 (2000); Mark Purcell, *Islands of Practice and the Marston/Brenner Debate: Toward a More Synthetic Critical Human Geography*, 27 PROGRESS HUM. GEOGRAPHY 317 (2003). This debate was followed by a second debate over the role that scale plays in human geography. See generally Chris Collinge, *Flat Ontology and the Deconstruction of Scale: A Response to Marston, Jones and Woodward*, 31 TRANSACTIONS INST. BRIT. GEOGRAPHERS 244 (2006); Scott William Hoefle, *Eliminating Scale and Killing the Goose that Laid the Golden Egg?*, 31 TRANSACTIONS INST. BRIT. GEOGRAPHERS 238 (2006); Sallie A. Marston, John Paul Jones III & Keith Woodward, *Human Geography Without Scale*, 30 TRANSACTIONS INST. BRIT. GEOGRAPHERS 416 (2005).

D. *Inequality and Resulting Injustice*

Many aspects of the BP *Deepwater Horizon* oil spill and its aftermath have justice implications. Environmental justice focuses on the disproportionate distribution of environmental harms and benefits in low-income communities and communities of color.¹⁴¹ The post-spill governance strategies resulted in injustices with respect to the response itself, compensation for victims, and affected workers. A full assessment of these justice issues is beyond the scope of this Article, but is the focus of another piece.¹⁴² However, these justice problems are intertwined with the governance challenges that this Article engages and so need to be included as a final and important piece of the complexity analyzed in this Part.

This Section explores the way in which governance complexity helps to produce injustice and the role of inequality in creating complexity. A number of decisions were made in the course of the spill response—from waste disposal to the GCCF process to the training for clean-up workers—that risk disproportionate harm to those who are low-income, are people of color, have had fewer educational opportunities, and/or have limited knowledge of English. While in no circumstance did these harms appear to emerge from an intention to discriminate—in fact, the EPA has made active effort to address environmental justice in impacted communities, including an April 2011 award of \$300,000 to nonprofit community organizations in the Gulf Coast region¹⁴³—they often resulted in part from the complex dynamics among key actors taking place in the aftermath of the spill. Moreover, the foundational inequalities between the major corporations involved and the most vulnerable impacted populations create a challenge for effective and appropriate governance. This Section considers these dilemmas in the context of scholarly literature on environmental justice in order to frame the ways in which the governance solutions of Part III might address these concerns.

The spill and response raise numerous environmental justice concerns regarding the long- and short-term health and fairness implications of oil waste and dispersants in an area that already has issues with environmental

141. An extensive scholarly literature explores the complexity of language in the context of race and racial discrimination. For a discussion of some of these issues, see Michael Omi, *Rethinking the Language of Race and Racism*, 8 *ASIAN L.J.* 161 (2001) (speech). This Article acknowledges these complexities and uses the terms “people of color” and “communities of color” in their most inclusive senses.

142. I am exploring environmental justice concerns stemming from the BP *Deepwater Horizon* oil spill in-depth in a co-authored article. See Osofsky, Baxter-Kauf, Hammer, Mailander, Mares, Pikovsky, Whitney & Wilson, *supra* note 39. For a discussion of the broader social and ecological context in which the spill took place, see Daniel A. Farber, *The BP Blowout and the Social and Environmental Erosion of the Louisiana Coast* (Univ. of Cal. Berkeley Pub. Law Research Paper No. 1740844, 2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1740844.

143. See Press Release, EPA Awards Environmental Justice Grants for Areas Affected by the BP Oil Spill (Apr. 20, 2011), available at <http://yosemite.epa.gov/opa/admpress.nsf/0/42DF7BEF68187BE585257878006E7E20>.

exposures. While some of these concerns simply arise from the nature of the spill and its geography, others reveal governance complexities. Specifically, the disproportionate disposal of waste in low-income communities of color serves as an instructive example of how governance complexity translates into injustice.

The Coast Guard and EPA, in consultation with the states, managed the disposal of the more than one hundred thousand tons of oil waste generated as a result of the spill.¹⁴⁴ However, the waste disposal plans were officially approved by the Unified Area Command, reflecting the complexities of horizontal governance described above.¹⁴⁵ Due to an exception in RCRA that applied to most of the oil spill waste, this waste was deemed nonhazardous and appropriate for a particular type of municipal and county landfill.¹⁴⁶ Such a designation for this enormous quantity of waste raises an immediate environmental justice concern, given the location of many such landfills in low-income communities of color.

Both the governmental regulators and BP recognized the importance of avoiding a disproportionate impact on these communities in waste disposal. For example, BP's plan for waste disposal, approved by the Unified Area Command, states:

To the extent feasible, impacts on minority and low income populations will be reviewed when selecting future staging areas and disposal options. The Gulf Coast IMT has a commitment to address environmental justice challenges and the disproportionate environmental burdens placed on low-income and minority communities as directed by applicable legal requirements.¹⁴⁷

Statements such as these evince an awareness of and a commitment, at least on paper, to ameliorating environmental justice.

144. ENVTL. PROT. AGENCY, COMPREHENSIVE LIQUIDS WASTE AND MATERIALS MANAGEMENT PLAN (2010), available at http://www.epa.gov/emergency/bpspill/waste/bp_liquidwaste_plan.pdf; Robert D. Bullard, *Voices: Environmental Justice Communities Bear Brunt of BP's Oil Spill Waste Disposal*, THE INSTITUTE FOR SOUTHERN STUDIES (Apr. 23, 2011, 10:48 AM), <http://www.southernstudies.org/2011/04/voices-environmental-justice-communities-bear-brunt-of-bps-oil-spill-waste-disposal.html>. These waste disposal issues are explored in depth in Osofsky, Baxter-Kauf, Hammer, Mailander, Mares, Pikovsky, Whitney & Wilson, *supra* note 39.

145. See UNIFIED AREA COMMAND, DEEPWATER HORIZON MC252, GULF-WIDE RECOVERED OIL/WASTE MANAGEMENT PLAN (2010), available at http://usresponse.bp.com/external/content/document/2911/9637111/UAC_Gulf_Wide_Rec_Oil_Waste_Mgmt_Pln.pdf [hereinafter WASTE MANAGEMENT PLAN].

146. See *id.* at 6 fig.1.1, 13; 40 C.F.R. § 261.4(b)(5) (2009); ENVTL. PROT. AGENCY, EXEMPTION OF OIL AND GAS EXPLORATION AND PRODUCTION WASTES FROM FEDERAL HAZARDOUS WASTE REGULATIONS 1–17 (2002), available at www.epa.gov/osw/nonhaz/industrial/special/oil/oil-gas.pdf. This exception is problematic, but extensive analysis of it is beyond the scope of this Article. For further discussion, see Osofsky, Baxter-Kauf, Hammer, Mailander, Mares, Pikovsky, Whitney & Wilson, *supra* note 39.

147. See WASTE MANAGEMENT PLAN, *supra* note 145, at 15.

Despite these efforts, however, the choice of waste disposal sites disproportionately impacted people of color. According to Robert Bullard of the Institute for Southern Studies:

As of April 10, 2011 -- the latest reporting period -- 106,409 tons of BP waste went to 11 landfills, of which 45,032 tons (42.3 percent) went to landfills in majority people of color communities, and 90,554 tons (85.1 percent) went to landfills located in communities whose percent people of color population exceeded the county's percent people of color.¹⁴⁸

This disproportionate distribution raises questions about whether the supervision of the Unified Area Command, key agencies, and states focused adequately on environmental justice and, more specifically, whether the combination of the complexity of the spill, the governance structure, and the emergency need for waste disposal limited the exploration of alternatives.

In addition, at least one community in Mississippi that was designated to receive waste tried to opt out; despite regulators not allowing BP to give it that opt out, the community only served as a waste staging ground rather than as a storage location.¹⁴⁹ It is unclear if residents of the other communities designated to receive waste understood that option or were aware or organized enough to raise concerns about their disproportionate burden.¹⁵⁰ To the extent that low-income, communities of color are less likely to have the capacity to raise a successful “Not in My Backyard” (NIMBY) challenge, government agencies need to account for that inequality; the governance structure, with all its complexity, might not have designated a clear enough leadership structure for addressing these environmental justice concerns.¹⁵¹

Complexity also poses justice issues in the context of compensation, as the myriad of options and the way they are presented risks exacerbating

148. Robert D. Bullard, *supra* note 144; *accord* BP, WASTE AND MATERIAL TRACKING SYSTEM AND REPORTING PLAN (2010), available at http://usresponse.bp.com/external/content/document/2911/963695/1/Appendix_C_Waste_Tracking_Plan.pdf; Robert D. Bullard, *BP's Waste Management Plan Raises Environmental Justice Concerns*, DISSIDENT VOICE (July 29, 2010), <http://dissidentvoice.org/2010/07/bp%E2%80%99s-waste-management-plan-raises-environmental-justice-concerns/>; Osofsky, Baxter-Kauf, Hammer, Mailander, Mares, Pikovsky, Whitney & Wilson, *supra* note 39.

149. See NATIONAL COMMISSION REPORT, *supra* note 1, at 170.

150. See Letter from Mike Utsler, Chief Operating Officer, Gulf Coast Restoration Org., to Paul F. Zukunft, Rear-Admiral, U.S. Coast Guard and Fed. On-Scene Coordinator (Aug. 19, 2010), available at <http://www.epa.gov/bpspill/waste/bp-admiralZwaste-plans.pdf>.

151. For an analysis of structural racism and the citing of industrial facilities, see generally Luke W. Cole, *Environmental Justice and Entrepreneurship: Pitfalls for the Unwary*, 31 W. NEW ENG. L. REV. 601 (2009). For a discussion of efforts to address dumping of toxic waste in low-income communities of color, see Dollie Burwell & Luke W. Cole, *Environmental Justice Comes Full Circle: Warren County Before and After*, 1 GOLDEN GATE U. ENVTL. L.J. 9, 21–28 (2007).

preexisting inequality. For example, although the government and BP effectively channeled claims towards the GCCF as time went on, the above-discussed division between emergency and final claims poses justice concerns. Because the GCCF uses the same form for both types of claims, those with less education, insufficient finances to hire a lawyer, and language barriers might be confused about the difference between the forms.¹⁵² In addition, those people are less likely to have made emergency claims by the late November 2010 deadline, and so are more likely to face the difficult decision between final claims and litigation.¹⁵³ If those with less money, limited education, or language barriers opt into the GCCF process, they may not present their claims for relief in a manner that would maximize the amount they receive. If they opt out, they are less likely to have adequate representation in the tort litigation and to understand the various barriers to relief.¹⁵⁴ In sum, the complexity of the process for relief poses a justice problem because those with more resources have a greater ability to navigate the process effectively.

Issues around cleanup worker safety present yet another variation on the ways in which the governance complexity of the spill response raises justice concerns. Specifically, these issues highlight the way in which the public-private intertwinement described in Section I.E can result in inadequate safety training (one of many issues regarding cleanup worker safety).¹⁵⁵ OSHA requires extensive training for cleanup workers under its Hazardous Waste Operations and Emergency Response standard.¹⁵⁶ However, it allowed BP to subcontract training with other companies and then asked on its website for workers to report inadequate training.¹⁵⁷ As with the drilling itself, these subcontracting relationships add complexity and accountability concerns in the context of cleanup workers, who often are not in a position to assess and report the adequacy of the training, particularly if they desperately need the employment.

152. Osofsky, Baxter-Kauf, Hammer, Mailander, Mares, Pikovsky, Whitney & Wilson, *supra* note 39.

153. *Id.*

154. For an analysis of environmental justice concerns with respect to non-GCCF options, see *id.*

155. For a more in-depth discussion of cleanup worker safety issues, see generally REBECCA BRATSPIES ET AL., CTR. FOR PROGRESSIVE REF., FROM SHIP TO SHORE: REFORMING THE NATIONAL CONTINGENCY PLAN TO IMPROVE PROTECTIONS FOR OIL SPILL CLEANUP WORKERS (2010), available at http://www.progressivereform.org/articles/BP_OSHA_1006.pdf; Osofsky, Baxter-Kauf, Hammer, Mailander, Mares, Pikovsky, Whitney & Wilson, *supra* note 39.

156. 29 C.F.R. § 1910.120 (2009). See U.S. DEPT. OF LABOR, OSHA, TRAINING MARINE OIL SPILL RESPONSE WORKERS UNDER OSHA'S HAZARDOUS WASTE OPERATIONS AND EMERGENCY RESPONSE STANDARD (2001), available at http://www.incidentnews.gov/resources/OSHA_HAZWOPER_Oil.pdf; U.S. DEP'T OF LABOR, OSHA, CURRENT TRAINING REQUIREMENTS FOR THE GULF OIL SPILL [JULY 21, 2010] [hereinafter OSHA, CURRENT TRAINING REQUIREMENTS], http://www.osha.gov/oilspills/Basic_Training_Fact_07_02_10.pdf.

157. OSHA, CURRENT TRAINING REQUIREMENTS, *supra* note 156.

The common thread running through these situations is that complexity often risked impacting vulnerable populations disproportionately in the context of the BP *Deepwater Horizon* oil spill. These populations are less able to resist waste disposal in their communities, to navigate the compensation options effectively, and to ensure their safety in the workplace. Envisioning appropriate multidimensional governance strategies requires crafting approaches that not only can navigate complexity, but also can incorporate these justice concerns while doing so, an effort that Part III makes.

Effective incorporation is particularly difficult, however, because environmental justice itself is rife with complexity. An extensive scholarly literature explores strategies for addressing environmental justice issues at both domestic and international levels and demonstrates the entrenched structural and substantive barriers to progress. In the U.S. context, Center on Race, Poverty and the Environment founder Luke W. Cole, one of the longtime leaders of the environmental justice movement until his untimely death in 2009, demonstrated the nuanced character of structural racism and the power dynamics that underlie it.¹⁵⁸ Dean Sheila Foster, another important leader in this effort, has analyzed the four types of justice that the movement seeks: “distributive, procedural, corrective, and social.”¹⁵⁹ EPA civil rights attorney Michael Mattheisen has examined the way in which the Supreme Court’s decision in *Alexander v. Sandoval*¹⁶⁰ to limit disparate impact claims made civil rights litigation strategies more difficult.¹⁶¹ Together with Eileen Gauna, another leader in the movement, and before the *Sandoval* case created an additional legal barrier, Foster described the challenges facing environmental justice litigation and the ways in which litigation forms part of a broader environmental justice strategy.¹⁶²

In an international and comparative law context, numerous scholars have considered the extent to which environmental rights can be used as an effective tool in addressing injustice. Environmental rights strategies, while sometimes successful, also interact with multidimensional governance concerns and face significant barriers.¹⁶³ In addition, the United States has

158. See Cole, *Environmental Justice and Entrepreneurship*, *supra* note 151; Luke W. Cole, *Environmental Justice and the Three Great Myths of White Americana*, 14 HASTINGS W.-NW. J. ENVTL. L. & POL’Y 573 (2008); Luke W. Cole & Caroline Farrell, *Structural Racism, Structural Pollution and the Need for a New Paradigm*, 20 WASH. U. J.L. & POL’Y 265 (2006).

159. See Sheila Foster, *The Challenge of Environmental Justice*, 1 RUTGERS J.L. & URB. POL’Y 1 (2004).

160. 532 U.S. 275 (2001).

161. See Michael D. Mattheisen, *The Effect of Alexander v. Sandoval on Federal Environmental Civil Rights (Environmental Justice) Policy*, 13 GEO. MASON U. C.R. L.J. 35 (2003).

162. See Eileen Gauna & Sheila Foster, *Environmental Justice: Stakes, Stakeholders, Strategies*, 30 HUM. RTS. 2, 3 (2003).

163. For examples of this scholarship, see generally SANTIAGO FELGUERAS, *DERECHOS HUMANOS Y MEDIO AMBIENTE* (1996); *HUMAN RIGHTS AND THE ENVIRONMENT: CONFLICTS AND NORMS IN A GLOBALIZING WORLD* (Lyuba Zarsky ed., 2002); *HUMAN RIGHTS APPROACHES TO*

not been a receptive forum or respondent in environmental rights cases¹⁶⁴ and it is unlikely that an international environmental human rights suit regarding the BP *Deepwater Horizon* oil spill would be a successful way of addressing these justice issues.

As with the other three governance challenges arising from complexity, the scholarly literatures exploring how to create fluid, multiactor legal models hold some promise. To the extent that formal litigation and legislative and executive action constitute only one piece of the puzzle, these dynamic and integrative conceptual approaches provide a way of rethinking the justice barriers and how they might be addressed. The rest of this Article considers the constructive power of these models to address the governance challenge posed by this oil spill.

III. TOWARD MORE EFFECTIVE MULTIDIMENSIONAL GOVERNANCE

This Part focuses on the difficult question of how to most effectively address the governance concerns posed in Parts I and II. In so doing, it builds on existing thinking about both the BP *Deepwater Horizon* oil spill and crosscutting governance more broadly in order to propose ways of appropriately engaging the multidimensional character of this particular challenge.

The Part begins by drawing from scholarly literature in law, geography, and ecology to suggest principles for addressing regulatory complexity more effectively. It next introduces some of the most significant post-spill governance assessments and proposals regarding deepwater drilling and spill response. The Part analyzes these proposals in light of its recommended core principles, with a particular emphasis on strategies for including key state and local actors and establishing dynamic learning structures. It concludes with reflections on the benefits and limitations of multidimensional governance strategies.

ENVIRONMENTAL PROTECTION (Alan E. Boyle & Michael R. Anderson eds., 1996); LIFE AND DEATH MATTERS: HUMAN RIGHTS AND THE ENVIRONMENT AT THE END OF THE MILLENNIUM (Barbara Rose Johnston ed., 1997); LINKING HUMAN RIGHTS AND THE ENVIRONMENT (Romina Piccolotti & Jorge Daniel Taillant eds., 2003); IKE OKONTA & ORONTO DOUGLAS, WHERE VULTURES FEAST: SHELL, HUMAN RIGHTS, AND OIL (Verso 2003) (2001); THE RIGHT OF THE CHILD TO A CLEAN ENVIRONMENT (Agata Fijalkowski & Malgosia Fitzmaurice eds., 2000); Sumudu Atapattu, *The Right to a Healthy Life or the Right to Die Polluted?: The Emergence of a Human Right to a Healthy Environment Under International Law*, 16 TUL. ENVTL. L.J. 65 (2002); Natalie L. Bridgeman, *Human Rights Litigation Under the ATCA as a Proxy for Environmental Claims*, 6 YALE HUM. RTS. & DEV. L.J. 1 (2003); Linda A. Malone & Scott Pasternack, *Exercising Environmental Human Rights and Remedies in the United Nations System*, 27 WM. & MARY ENVTL. L. & POL'Y REV. 365 (2002).

164. I have compared environmental rights approaches in different fora in Hari M. Osofsky, *Learning from Environmental Justice: A New Model for International Environmental Rights*, 24 STAN. ENVTL. L.J. 71 (2005), and some of these barriers to responsiveness in Hari M. Osofsky, *The Geography of Justice Wormholes: Dilemmas from Property and Criminal Law*, 53 VILL. L. REV. 117 (2008).

A. Principles for Multidimensional Governance

The challenges that Part II describes are each individually difficult, but the greater problem is their interconnection. For example, strategies for responding to scientific and technological uncertainty and change will interact with the simultaneous overlap and fragmentation in the regulatory system, the tension between inclusiveness and efficiency, and inequality. Moreover, many thoughtful scholars, often in clusters isolated from one another, have grappled with these concerns in a variety of contexts and proposed ways forward.

While a comprehensive assessment of all potentially applicable scholarship across disciplines is beyond the scope of this Article (and it is hard to imagine how any article-length treatment could accomplish this task effectively), a principled approach to the governance challenges posed by the BP *Deepwater Horizon* oil spill requires an assessment of reform proposals in light of this thinking. Interweaving multiple scholarly literatures across disciplines is a daunting task—my prior scholarship has engaged some but not all of these conceptual approaches in other substantive contexts¹⁶⁵—but these interconnections among ideas are important to explore because complex governance problems are themselves so challenging. In order to address these problems most effectively, we need to break down the walls that separate disciplines and substantive areas within them and consider the interrelated ideas that these literatures produce. While many more than eight streams of ideas are potentially relevant, this Article focuses on this set because they are particularly thoughtful on the issues of scale, substantive overlap, and multiplicity of actors that are critical to crafting better regulatory approaches in the aftermath of the BP *Deepwater Horizon* oil spill. The Article has discussed each of these conceptual streams in the context of Part II's analysis of governance challenges above, but this Section focuses on how they fit together and on the implications of their interwoven ideas for multidimensional governance.

More specifically, this Section builds from these literatures to suggest three key principles for framing effective regulatory solutions in the face of complexity. First, both the New Haven School and global legal pluralism scholarship suggest the need to identify the various overlapping formal and informal regulatory vehicles, and when paired with both new governance and regulatory institutions theory, they provide frameworks for crafting hybrid structures. Second, the geography literature on scale, together with the dynamic federalism and intersystemic governance analyses, highlight the importance of paying particular attention to the way in which scale operates in these hybrid structures and developing strategies that allow key

165. See, e.g., Osofsky, *supra* note 8, at 273–78 (analyzing some of these literatures in the context of climate change regulation).

actors at each level to interact meaningfully and effectively. Finally, the adaptive management literature, especially when it draws from dynamic federalism, indicates that these hybrid multiscalar structures need to be systematically aware of and responsive to change. As the analysis below details, while each of these conceptual streams represent distinct ideas that undergird the three principles, these ideas overlap, and several scholars have made contributions to more than one grouping.

1. Legal Hybridity

The foundation of this Article's governance model involves an embrace of legal hybridity—that is, the simultaneous and often interacting legal and quasi-legal structures addressing offshore drilling and oil spills. Hybridity is more than just the overlap described in Section II.B, which results from the crosscutting nature of these problems. Rather, this approach, at its best, involves intentional overlap that incorporates key actors and their interactions into the governance process. Four of the eight streams of scholarship help to shape this Article's conception of hybridity.

First, the New Haven School provides a vision of lawmaking that helps to open up the possibilities for hybridity. To New Haven School scholars, law is authoritative decisionmaking backed by effective power and taking place in a wide variety of arenas. In an international law context, the School represents a significant shift from the traditional state-centric view of lawmaking.¹⁶⁶ For the purposes of this Article's analysis, the New Haven School's importance is not so much its implications for international law, but rather its broader implications for how regulatory behavior relevant to the BP *Deepwater Horizon* oil spill might be conceptualized. The New Haven School helps to shape an understanding of relevant law as encompassing a variety of informal and formal arrangements, which allows for a more inclusive view of how to approach governance more effectively in this context.

Global legal pluralism, which owes an intellectual debt to the New Haven School but is distinct from it, explicitly acknowledges existing hybridity and provides models for new arrangements.¹⁶⁷ This approach is one piece of a broader literature on legal pluralism, an approach that emerges from the intersection of law and anthropology—and at times builds on the work of Professor Robert M. Cover—to argue that law is

166. For an explanation of the New Haven School approach, see LASSWELL & MCDUGAL, *supra* note 131; Richard A. Falk, *Casting the Spell: The New Haven School of International Law*, 104 YALE L.J. 991 (1995); Myres S. McDougal & Harold D. Lasswell, *The Identification and Appraisal of Diverse Systems of Public Order*, 53 AM. J. INT'L L. 1 (1959); Myres S. McDougal, Harold D. Lasswell & W. Michael Reisman, *The World Constitutive Process of Authoritative Decision*, 19 J. LEGAL EDUC. 253 (1967); W. Michael Reisman, *International Lawmaking: A Process of Communication*, 75 AM. SOC'Y INT'L L. PROC. 101 (1981).

167. See Paul Schiff Berman, *A Pluralist Approach to International Law*, 32 YALE J. INT'L L. 301, 301–02 (2007).

constituted by multiple normative communities that have shared social and legal space.¹⁶⁸ Global legal pluralism focuses, in particular, on transnational intersections of these normative communities, and views lawmaking at a global scale as taking place through these communities' often parallel but sometimes conflicting interactions. Thus, like the New Haven School, it has a vision of lawmaking that is broader than the traditional Westphalian (nation-state-centric) account and argues for the importance of including a diverse set of formal and informal interactions in lawmaking accounts. Most relevant to this Article's focus, these scholars have considered how to create hybrid legal structures that accommodate this overlap, a key issue in the context of regulating offshore drilling and managing oil spills.¹⁶⁹

New governance scholars' focus on integrating actors and formal and informal law into regulatory approaches provides helpful models for what hybridity might look like in this context. Professors Kenneth W. Abbot and Duncan Snidal have identified the four core attributes of new governance strategies: (1) state-orchestrated rather than state-centered; (2) decentralized rather than centralized; (3) based on dispersed rather than bureaucratic expertise; and (4) integrating a mix of hard and soft law rather than focusing solely on mandatory rules.¹⁷⁰ These strategies help to ground the kind of innovative partnerships needed to regulate offshore drilling and oil spill responses. For example, Professor Bradley C. Karkkainen has used new governance theory to propose new institutional arrangements in the context of Great Lakes management,¹⁷¹ and Professors J.B. Ruhl and James Salzman have paired new governance with other theories to propose a typology for addressing complex environmental problems more effectively.¹⁷²

The final strand undergirding the Article's conception of legal hybridity emerges from a group of scholars collaborating through the Regulatory Institutions Network at Australian National University. Like many of the

168. See Robert M. Cover, *The Supreme Court, 1982 Term—Foreword: Nomos and Narrative*, 97 HARV. L. REV. 4 (1983); Ambreena Manji, "Like a Mask Dancing": Law and Colonialism in Chinua Achebe's *Arrow of God*, 27 J. LAW & SOC. 626 (2000); Emmanuel Melissaris, *The More the Merrier? A New Take on Legal Pluralism*, 13 SOC. & L. STUD. 57 (2004); Sally Engle Merry, *Legal Pluralism*, 22 LAW & SOC'Y REV. 869 (1988); Dalia Tsuk, *The New Deal Origins of American Legal Pluralism*, 29 FLA. ST. U. L. REV. 189 (2001).

169. See *supra* note 131 and accompanying text.

170. Kenneth W. Abbott & Duncan Snidal, *Strengthening International Regulation Through Transnational New Governance: Overcoming the Orchestration Deficit*, 42 VAND. J. TRANSNAT'L L. 501, 508–09 (2009).

171. Bradley C. Karkkainen, "New Governance" in the Great Lakes Basin: Has Its Time Arrived?, 2006 MICH. ST. L. REV. 1249, 1254–55 (2006).

172. Ruhl & Salzman, *supra* note 6, at 102–08 (2010). For broader new governance analyses, see generally LAW AND NEW GOVERNANCE IN THE EU AND THE US (Gráinne de Búrca & Joanne Scott eds., 2006), Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, *supra* note 132; Karkkainen, Reply, *supra* note 132; Lobel, Surreply, *supra* note 132.

other scholars described above, these scholars believe in the importance of integrating formal and informal regulatory behavior. They focus on doing so through crafting responsive regulatory models that: (1) consider context, and the range of informal and formal options that interact and might create change; (2) order options from least to most intrusive, to limit regulatory overreaction; and (3) create dialogue about the necessity of regulation and elicit voluntary commitments to comply.¹⁷³ This strand complements the other approaches because it shares their broader view of regulatory behavior and pairs that view with concrete strategies for navigating the resulting morass, a critical need in the BP *Deepwater Horizon* oil spill context.

Together, these scholarly approaches provide insights into both how to conceptualize the multiplicity of interactions taking place in this context as legal and how to structure regulation that embraces complexity. In so doing, they set the stage for the Article's two primary strategies for implementing hybridity which follow: inclusivity across scales and responsiveness. The types of solutions that emerge from these literatures model how conceptualizing what matters in law more broadly allows for needed creative configurations.

2. Multiscalar Inclusion

As described in Section I.A, scale forms a critical element of the governance complexities; the post-spill reform proposals consistently call for better inclusion of smaller scales in the top-down federal structure that dominates regulation in this context. While the above literatures often model multilevel inclusion, three additional streams of scholarship that focus on multiscalar dynamics further undergird this Article's conceptual approach to integration across scales. First, at a primarily U.S. domestic level, dynamic federalism scholars—at times also drawing from new governance scholarship—have grappled with what more inclusive multiscalar governance should look like. The dynamic federalism scholars focus on the many areas of law in which some form of concurrent state and federal (and sometimes local or regional) jurisdiction exists and consider how to structure regulation most effectively in that context. Many of them have developed creative models for multiscalar interaction that do not simply involve complex cooperative approaches, but also integrate conflict as a regulatory tool. For example, Professors William Buzbee, Ann Carlson, Robert Glicksman, Alexandra Klass, and Benjamin Sovakool have considered instances in which floor preemption allowed leader states to push the federal government's regulatory approach.¹⁷⁴ Professor Robert

173. Braithwaite, *supra* note 132; *see also* Wood, Ivec, Job & Braithwaite, *supra* note 132.

174. *See* Buzbee, *supra* note 129, at 1551–56; Buzbee, *supra* note 128, at 5–6, 58–63; Carlson, *supra* note 72, at 290–92, 310–19; Glicksman & Levy, *supra* note 72, at 583–84; Klass, *supra* note 72, at 1654–58; Sovakool, *supra* note 72, at 405–06.

Schapiro has engaged how to create workable governance from “polyphony.”¹⁷⁵ Professor Erin Ryan has analyzed the complex ways in which state and federal governments negotiate with one another through various federalism devices.¹⁷⁶ This scholarship is helpful in the context of the BP *Deepwater Horizon* oil spill because it suggests ways in which concurrent authority can be organized effectively, a key issue in structuring prevention, disaster planning, and spill response across levels.

A subset of these dynamic federalism scholars are part of a group at Emory Law School working on federalism and intersystemic governance.¹⁷⁷ Both the above-mentioned Buzbee and Schapiro are two of the three directors of this group, and Professor Robert Ahdieh is the third director, though a number of other faculty members are affiliated with the group.¹⁷⁸ This Section separates out the intersystemic governance group as a second strand, rather than simply lumping it in with dynamic federalism, because of the ways in which some of these scholars are bringing both international legal theory and conflict into their approach to multilevel governance. This combination makes their work particularly helpful for this context, as they suggest potentially useful mechanisms for inclusion of many scales in structures that allow for both cooperation and conflict. For example, Schapiro has considered the value of recognizing multiple regulatory nodes in intersystemic interactions that span from the local to the international.¹⁷⁹ Ahdieh has provided a schema for structuring “dialectical” interactions in which regulatory overlap and interaction improve regulation.¹⁸⁰

The geography literature on scale, through its interrogation of what constitutes scales and how movement between levels takes place, provides a final, important addition to this conceptual framing of multiscale inclusivity. It helps to identify, in a more nuanced manner, the pieces of the regulatory puzzle being crafted by the above streams and ways in which they might fit together. While this literature is rich and diverse in a way that cannot be captured in this brief treatment, several pieces that I have highlighted in my previous law and geography work are particularly illuminating in this context. As described above, Professor Nathan Sayre’s work on scale at the intersection of geography and ecology could help to identify the implications of different choices about how the Gulf and the

175. See SCHAPIRO, *supra* note 129, at 7–9. For other analyses of uncooperative federalism, see Bridges, *supra* note 72, at 133–34; Bulman-Pozen & Gerken, *supra* note 72, at 1258–60; Junker, *supra* note 72, at 94–95.

176. See Erin Ryan, *Negotiating Federalism*, 52 B.C. L. REV. 1 (2011).

177. See Center on Federalism and Intersystemic Governance, EMORY LAW, <http://www.law.emory.edu/centers-clinics/cfig.html> (last visited July 10, 2011).

178. See Faculty: Center on Federalism and Intersystemic Governance, EMORY LAW, <http://www.law.emory.edu/centers-clinics/cfig/faculty.html> (last visited July 10, 2011).

179. See Robert A. Schapiro, *Federalism as Intersystemic Governance: Legitimacy in a Post-Westphalian World*, 57 EMORY L.J. 115, 121 (2007).

180. See Ahdieh, *Dialectical Regulation*, *supra* note 9, at 914–26.

abutting land are divided and the scales at which ecological and human concerns are considered.¹⁸¹ Professor Kevin Cox's network theory of scale, which elucidates the way in which interactions at a certain level and between that level and other levels constitute a scale, helps to frame the multiscale, multiactor interactions taking place in proposed regulatory solutions.¹⁸² Julie Cidell's work serves as a reminder to those crafting regulatory strategies of the key role that individuals play in each institution and level.¹⁸³ Finally, the debate between Professors Neil Brenner and Sallie Marston (with the support of Neil Smith), which Professor Mark Purcell has further characterized, provides an important exposition of the contested terrain in which the key actors and their interactions are being determined and how characterization of those interactions matters. Marston's call for greater consideration of social reproduction and consumption, in particular, highlights the need for a more inclusive picture of the people and activities that matter; the regulatory structures being crafted in the aftermath of this oil spill should reflect an understanding of the larger social and political picture.¹⁸⁴

Together, these three streams of scholarship help to demonstrate how the hybrid structures described above might be inclusive across scales, and in the process, help to foster broad buy-in and to encourage learning from smaller scale knowledge. These scholarly approaches explore how regulatory strategies could encompass the nuances of interactions across governmental levels and by so doing provide the foundation for Section III.C's legal analysis.

3. Regulatory Responsiveness

The prior seven streams of scholarship all provide the basis for creative governance forms, but the adaptive management literature brings the concept of regulatory responsiveness in more clearly. Adaptive management informs a growing body of legal scholarly analysis of environmental regulatory approaches. Most relevant to this Article, a number of scholars, such as Professors J.B. Ruhl (at times in collaboration with Professor James Salzman or Professor Robert Fischman), Robin Craig,¹⁸⁵ Alejandro E. Camacho,¹⁸⁶ and Brad Karkkainen,¹⁸⁷ have analyzed adaptive management in a multilevel governance context. Camacho, Craig,

181. See Sayre, *supra* note 119, at 276–78.

182. See Cox, *Spaces of Dependence*, *supra* note 139 and accompanying text.

183. See Cidell, *supra* note 139 and accompanying text.

184. See *supra* note 140 and accompanying text.

185. See Robin Kundis Craig, "Stationarity is Dead"—*Long Live Transformation: Five Principles for Climate Change Adaptation Law*, 34 HARV. ENVTL. L. REV. 9, 60–61 (2010); Ruhl & Salzman, *supra* note 6, at 97–98, 103–06.

186. Alejandro E. Camacho, *Assisted Migration: Redefining Nature and Natural Resource Law Under Climate Change*, 27 YALE J. ON REG. 171 (2010).

187. See Karkkainen, *supra* note 72.

Ruhl, and Salzman have combined adaptive management with dynamic federalism to propose strategies for approaching climate change adaptation more effectively. In so doing, these scholars often both draw from Professors C.S. Holling and Lance Gunderson's theory of panarchy, a "cross-scale, interdisciplinary, and dynamic" approach to conceptualizing global change that integrates "economic, ecological, and institutional systems."¹⁸⁸ Karkkainen, Ruhl, and Salzman also interweave new governance and adaptive management approaches in their innovative environmental regulatory proposals.¹⁸⁹

This scholarship has special salience for addressing the complexity posed by the BP *Deepwater Horizon* oil spill context because it provides models for creating dynamic, integrative regulatory approaches that can change over time. A core problem in regulating offshore drilling and oil spills effectively is the difficulty of creating a regime that can respond to the ecological and technological uncertainty and change. Section III.D draws from this third strand to explore how to build regulation that can evolve as needed.

The Sections which follow thus translate these three conceptual approaches into regulatory strategy. After providing an overview of existing reform proposals, they apply these principles to the suggested governance solutions with a focus on issues of inclusion and responsiveness. They consider how well the proposed multiscale, multiactor governance strategies embody effective incorporation of key actors and the capacity to evolve in response to change and the unknown. Although the Sections separate out inclusion and responsiveness, the issues are deeply intertwined, as the analyses of individual examples that follow make clear.

B. Governance Proposals in the Aftermath of the Spill

In the post-spill period, numerous individuals and groups from government, think tanks, oil industry, academia, and nongovernmental organizations have attempted to understand the causes of the spill and determine how prevention and response could be handled better in the future. Three of these analyses, among many other interesting ones,¹⁹⁰ are

188. C.S. Holling, Lance H. Gunderson & Donald Ludwig, *In Quest of a Theory of Adaptive Change*, in PANARCHY: UNDERSTANDING TRANSFORMATIONS IN HUMAN AND NATURAL SYSTEMS 3, 5 (Lance H. Gunderson & C.S. Holling eds., 2002). For examples of Ruhl using panarchy in his approach, see J.B. Ruhl & Robert L. Fischman, *Adaptive Management in the Courts*, 95 MINN. L. REV. 424 (2010), and Ruhl & Salzman, *supra* note 6.

189. See Karkkainen, *supra* note 72; Ruhl & Salzman, *supra* note 6. Sandra Zellmer also has made an interesting proposal for an Interior Rivers Management Act that would integrate adaptive management principles into post-Katrina management of the Mississippi and Missouri Rivers. See Sandra Zellmer, Essay, *A Tale of Two Imperiled Rivers: Reflections from a Post-Katrina World*, 59 FLA. L. REV. 599 (2007).

190. For example, Resources for the Future has done a series of interesting reports in the aftermath of the spill. See *Deepwater Drilling Key Recommendations*, RES. FOR THE FUTURE CTR.

particularly worth highlighting in the context of this Article because of their implications for governance. This Section provides a brief description of the governance-oriented pieces of these proposals to frame the discussion of the rest of the Part.

First, the most significant assessment of the spill to date is the 381-page report to the President released by the National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling in January 2011. This report is notable because it was produced by a bipartisan, independent commission, and attempted, in the first few months after the spill to provide a comprehensive assessment of what went wrong and recommendations for how to improve.¹⁹¹ As discussed further in Sections III.C and III.D, this report also has practical importance; efforts are already underway to implement some of its recommendations.

A number of the Commission's recommendations focus on reforming governance to address complexity better. To respond to concerns with the industry culture around safety, it proposes a self-policing safety organization modeled to some extent on the Institute of Nuclear Power Organizations paired with a higher liability cap in the Oil Pollution Act (with provisions to help smaller companies with resulting insurance issues).¹⁹² With respect to problems of ineffective governmental regulatory risk management and balancing environmental and economic concerns, it suggests a shift to a more "proactive, risk-based performance approach" modeled on the "safety case" strategy used in the North Sea. The Commission would pair this change with updated national and international safety standards;¹⁹³ further reworking of and additional funding for the former MMS; strengthened NEPA enforcement, interagency consultation, and Congressional oversight processes; and deployment of coastal and marine spatial planning tools.¹⁹⁴ Because of the difficulties in coordinating responses to major spills, the Commission also recommends that DOI coordinate a multiactor reworking of the response plan, that the EPA and Coast Guard develop clearer procedures for handling a Spill of National Significance under the National Contingency Plan (which also would include updated guidance on dispersants and the ineffectiveness of offshore barrier berms), and that the EPA and Coast Guard issue policies and guidance for more integration of states and localities in planning and training, including funded citizens' councils with which federal regulators would be required to consult.¹⁹⁵ In order to address the knowledge gap hindering the response, the Commission

FOR ENERGY ECON. & POL'Y, http://www.rff.org/centers/energy_economics_and_policy/Pages/Deepwater_Drilling_Key_Reccomendations.aspx (last visited July 10, 2011).

191. NATIONAL COMMISSION REPORT, *supra* note 1, at vi.

192. *Id.* at 234–47.

193. *Id.* at 252.

194. *Id.* at 249–63, 281–83, 288–91.

195. *Id.* at 265–71.

proposes that Congress fund more research and development on oil spill response to improve governmental expertise, that the National Response Team build governmental ability to estimate flow rates accurately, and that DOI require oil companies to demonstrate the safety of wells and their component parts and to have detailed plans for source control in the event of a spill.¹⁹⁶ Finally, the Commission considers issues of adequate response to impacts and compensation, with a focus on the need for more timely access for scientists to the response zone, adequate assessment of human health impacts, coordinated public–private efforts to restore consumer confidence, well-funded (through CWA penalties from the spill) multiactor and ecologically grounded restoration efforts, and a reassessment of the claims processes that goes beyond its recommended raising of liability limits under relevant laws.¹⁹⁷

Second, an October 2010 White Paper by the Center for Progressive Reform on the “regulatory blowout” is significant for its broad coverage of regulatory failures and host of specific recommendations for reform that cover OSCLA, MMS/BOEMRE, NEPA, and ESA, as well as overarching systemic proposals for regulatory design, energy and climate change policy, and learning from other countries’ experiences.¹⁹⁸ Although many of the proposed reforms to strengthen the statutory and regulatory regime are important, this Section focuses on summarizing the more governance-oriented recommendations, in line with this Article’s orientation. Like the Commission, the White Paper recommends further refining of the restructured MMS and better development of governmental scientific and technological expertise, but has somewhat different proposals for doing so; it suggests further assessment of whether more separation of the six core functions is needed than is taking place in the three new agencies,¹⁹⁹ and recommends that Congress establish “strong and independent scientific capacity” through additional funding and a legislative mandate for the USGS and through creating an independent advisory board to review risk assessment and regulatory approaches.²⁰⁰ In an interesting but less specific proposal than some of its others, the White Paper argues for a reinvigorated use of the precautionary principle in Congress and across agencies involved in the regulation of offshore drilling.²⁰¹ Finally, its examination of the European models considered by the Commission leads it to recommend more benchmarking rather than an option of the particular “safety case” model proposed by the Commission.²⁰²

Lastly, Professor Zygmunt J.B. Plater, who was one of the coauthors of

196. *Id.* at 269–75.

197. *Id.* at 275–87.

198. *See* REGULATORY BLOWOUT, *supra* note 100, at 1–5.

199. *Id.* at 26–27.

200. *Id.* at 23–27, 37.

201. *Id.* at 44–47.

202. *See id.* at 54–58.

a University of Alaska Sea Grant report on regulatory reform in the wake of the *Exxon Valdez* spill, has engaged in an analysis of systemic failures in prevention and response and compared these issues to the ones arising in the aftermath of the *Exxon Valdez* spill.²⁰³ He makes several interesting observations for the purposes of this Article's governance analysis in his comparison of the two spills and assessment of how a fuller implementation of the State of Alaska Oil Spill Commission's recommendations might have helped prevent and improve the response to the BP *Deepwater Horizon* oil spill. These observations not only provide some specific suggestions about governance, but also reveal issues with the way in which we learn from disaster assessment.

Plater's analysis considers both prevention and response issues. With respect to prevention, he notes that the Alaska Oil Spill Commission urged both that governmental and corporate performance standards include best available technology and that state and local government be integrated rather than preempted in the regulatory process. He details several recommended enforcement measures such as "serious unannounced safety drills, mandatory corporate safety reporting, mandatory personnel levels, revised insurance and antitrust exemptions, and an intensified vigilance role for the Coast Guard."²⁰⁴ He also highlights the watchdog role that Regional Citizen Advisory Councils have played in Alaska in addressing the public-private entwinement issues and the role that such Councils might have played in preventing the BP *Deepwater Horizon* oil spill, and praises the Obama Administration for working to bring these Councils into the Gulf in the aftermath of the spill.²⁰⁵ With respect to the response, Plater is critical of the use of dispersants and argues that the Alaska Oil Spill Commission report specifically warned of their dangers.²⁰⁶ However, he lauds a variety of Obama Administration interventions, including the creation of the Gulf Coast Claims Facility and funds for unemployed workers and for environmental and health monitoring; the MMS reorganization; the initiation of a National Ocean Council; and the establishment of the above-discussed National Commission on the BP *Deepwater Horizon* Oil Spill and Offshore Drilling.²⁰⁷

203. See Plater, *supra* note 100. Plater has supplemented this analysis with additional scholarship on the need for systemic reform in the aftermath of the spill. See Plater, *supra* note 4. For the earlier report on recommending regulatory reform in the wake of the *Exxon Valdez* spill, see Harry Bader, Ralph Johnson, Zygmunt Plater & Alison Rieser, *Recommendations for an Improved Oil Spill Prevention System* (Univ. of Alaska Sea Grant Legal Research Team, Legal Research Report, 1989).

204. Plater, *supra* note 100, at 11,043.

205. *Id.* at 11,046. Plater's subsequent article that builds on this shorter piece provides more detailed analysis of citizens' councils, praising their accomplishments and analyzing challenges that they have faced. See Plater, *supra* note 4, at 409–15; see also *infra* note 215 and accompanying text.

206. *Id.* at 11,043–44.

207. See *id.* at 11,045.

Together, these three analyses, despite their somewhat different emphases, highlight an important point about governance in the context of offshore drilling and oil spills. While part of the solution to more effective governance involves changing the rules, their enforcement, and the funding of their enforcement, another critical part of needed reform in the wake of the BP *Deepwater Horizon* oil spill is crafting structures that involve the myriad of relevant public and private actors in managing the complexity. While none of these assessments draws explicitly from governance theory, a number of the proposals—from ones regarding how scientific uncertainty, technological change, and risk are managed to ones about creating more effective watchdog entities to ones about the best approach to disaster planning—envision an approach to regulation that reflects the three principles articulated in Section III.A.

The next two Sections attempt to bridge that gap. As multiple conceptual approaches across disciplines grapple with how to create governance structures that embrace complexity of actors and applicable laws, the principles that emerge from their efforts can provide insight into how the various proposed reforms might be most effectively structured in this context. Specifically, Sections III.C and III.D focus on two types of hybrid (the first principle) governance approaches from the reform proposals: ones that integrate key actors at different levels of government (the second principle) and ones that create regulatory responsiveness (the third principle).

C. Restructuring Inclusion of Smaller Scales

The federal government—and more specifically, particular agencies within it—dominate regulation of both offshore drilling and oil spill response. However, as Parts I and II make clear, a wide range of other levels and actors play a regulatory role and incomplete acknowledgment and inclusion of them have made effective governance harder. With respect to offshore drilling regulation, the heavy dependence on the federal-level MMS and now BOEMRE²⁰⁸ means that if they fail, no meaningful backup exists. Regarding the oil spill response, the top-down, not fully integrated Unified Area Command and National Incident Command led to many conflicts with key state and local people.²⁰⁹

These difficulties make the second principle of multiscalar inclusion particularly relevant to regulatory reform. Many of the proposals described in Section III.B and reform efforts that have begun since the spill focus ways of making governance in this context more inclusive, among other reforms. This Section focuses on two such efforts as examples of the complexities of multiscalar inclusion: (1) establishing active Regional Citizen Advisory Councils as watchdogs in the Gulf and (2) reforming the

208. See *supra* note 44 and accompanying text.

209. See *supra* Section I.C.

NCP process to include state and local governments more effectively at both the planning and response stages. These strategies not only get at two of the biggest concerns surrounding inclusion of smaller scale government, but also are in the process of being implemented or considered by the Obama Administration. An examination of how they might improve governance and of how the proposals themselves might be improved is thus particularly important.

In so doing, this Section's analysis is animated by a core concern about the dimension of hierarchy that flows from the principles articulated in Section III.A and the scholarship upon which they are based. Effective integration of smaller scales requires not simply identifying all of the key actors, but also creating meaningful and effective multiscale interaction which is responsive to their concerns. Approaches that include state and local leaders in decisionmaking beyond their providing input into a top-down process are more likely to create both buy-in and dynamic, integrated governance, but also carry greater risks of unmanageability. This Section thus assesses both types of reforms for their ability to navigate those regulatory shoals.

First, the Oil Pollution Act of 1990 provides a statutory basis for two Regional Citizen Advisory Councils (RCACs), one in the Prince William Sound region and the other in the Cook Inlet region, which were created and funded as part of the settlement with Exxon in the aftermath of that spill. The councils include representatives of citizens and interest groups, and have been involved in a wide array of environmental and oil spill response research projects, as well as other issues relevant to managing oil tankers safely in the Arctic environment.²¹⁰ A 2005 paper by Professor George Busenberg found that the availability of funding resources impacted the scope of projects the councils could take on (with the better-funded council engaging in more far-ranging projects) and that both councils enhanced their effectiveness through collaboration with other institutions, which resulted in policy reforms.²¹¹ It also found that "the councils have operated as institutional learning arrangements (by promoting the application of new ideas and information to policy decisions

210. See Plater, *supra* note 100, at 11,046 (citing Oil Pollution Act of 1990 § 5002(d), 33 U.S.C. § 2732(d) (2006)); Zygmunt J.B. Plater, *Facing a Time of Counter-Revolution—The Kepone Incident and a Review of First Principles*, 29 U. RICH. L. REV. 657, 700–01 (1995); William H. Rodgers, Jr., *The Most Creative Moments in the History of Environmental Law: "The Whats"*, 2000 U. ILL. L. REV. 1, 22–23 (citing E-mail from Zygmunt Plater, Professor, Bos. Coll. Law Sch., to William H. Rodgers, Professor, Univ. of Wash. Sch. of Law (Feb. 2, 1998) (on file with the *University of Illinois Law Review*)); George J. Busenberg, *Regional Citizens' Advisory Councils and Collaborative Environmental Management in the Marine Oil Trade in Alaska* (unpublished manuscript), available at http://www.allacademic.com/meta/p41678_index.html; *About Us*, COOK INLET REG'L CITIZENS ADVISORY COUNCIL, http://www.circac.org/joomla/index.php?option=com_content&view=article&id=1&Itemid=9 (last visited July 15, 2011); *Introduction*, PRINCE WILLIAM SOUND REG'L CITIZENS' ADVISORY COUNCIL, <http://www.pwsrac.org/about/index.html> (last visited July 15, 2011).

211. See Busenberg, *supra* note 210, at 18–20.

in this system).”²¹² These successes have led both the Commission and Plater to call for similar councils in the Gulf Coast region, and for Congress and the Obama Administration to explore the possibility of such an expansion.²¹³

However, even as citizens groups continue to call for them more than a year after the spill, Gulf Coast councils have not yet been established and it is unclear if the political will exists to create them.²¹⁴ Moreover, if they are established, a subsequent article by Plater building upon the earlier piece on which this Part focuses discusses challenges posed by the Alaskan RCACs’ current format and makes recommendations for how they could be improved. Specifically, Plater suggests that a lack of subpoena power, the need to negotiate annual funds with industry, and co-opting of council members all pose serious concerns that should be addressed.²¹⁵

For the purposes of the governance analysis of this Article, the councils, when they function well, incorporate the three principles articulated in Section III.A in several respects. They are a top-down mandated and funded mechanism for bottom-up input from key constituencies who are not otherwise significantly included in the federal regulatory process other than through the less powerful public comment mechanisms. In so doing, they help to navigate some of the concerns around fragmentation and inclusion. They also provide a means of addressing some of the governance issues shaping injustice, especially if their membership and decisionmaking is structured to include representatives from low-income communities of color adequately. These structures operate in parallel to the traditional federal regulatory process and interact with it in constructive and policy-shaping ways. Because of the collaborative approach of the councils, they have become not only a way to involve the groups and entities represented, but also to seek regulatory input from a wider range of entities. They thus represent a hybrid governance approach that provides a mechanism to acknowledge complexity without making the federal process unduly complex.

Second, the analyses’ calls for reform of the NCP process to include state and local government more effectively stem from an attempt to respond to the regulatory difficulty, described in Part I, of lack of adequate smaller scale buy-in that at times turned into conflict. The Commission’s proposal for the EPA and the Coast Guard—based on their leadership roles

212. *See id.* at 18–19.

213. *See* NATIONAL COMMISSION REPORT, *supra* note 1, at 268–69; Plater, *supra* note 100, at 11,045–46 (citing Jim Carlton, *Bill Includes Citizens Oil Panel for Gulf, Arctic Coasts*, WALL ST. J. ONLINE, Aug. 2, 2010, <http://online.wsj.com/article/SB10001424052748703292704575393492820269842.html>).

214. For an example of such citizen group events, see Harlan Kirgan, *Biloxi Beach Event to Call for Citizen Group to Monitor Oil and Gas Activities in Gulf of Mexico*, GULFLIVE.COM (June 24, 2011, 6:56 AM), http://blog.gulflive.com/mississippi-press-news/2011/06/biloxi_beach_event_to_call_for.html.

215. Plater, *supra* note 100, at 11,046; Plater, *supra* note 4, at 409–15.

in the National Response Team—to issue policies and guidance to involve states and localities in oil spill contingency planning and training includes four protocols beyond its above-described recommendation to expand citizens’ councils to the Gulf region: (1) inclusion of local officials from high risk oil spill areas in training exercises; (2) establishment of liaisons between the Unified Command and affected local communities at the beginning of the spill response; (3) addition of a local on-scene coordinator position in the Unified Command structure; and (4) provision of additional guidance to local, state, and federal officials on the ways in which the NCP varies from the Stafford Act.²¹⁶ The Commission does not go into depth regarding any of these suggestions, and none of the other three analyses provides more details.

Although all of these protocols seem to provide acceptable mechanisms for increasing communication and buy-in, it is unclear the extent to which the protocols provide opportunities for meaningful state and local participation in NCP decisionmaking. The protocols, from the brief description of them in the report, appear to be designed to help state and local officials to understand and function within the hierarchical NCP structure.²¹⁷ While the Commission also mentions the above-described citizens’ councils as an additional mechanism for fostering ongoing local involvement in spill planning and response and recommends that regulators be required to consult with these councils on relevant issues,²¹⁸ it does not clarify how it envisions the councils participating in the NCP decisionmaking process at the planning or response stages. This is a missed opportunity. As the contingency planning and national incident response structures are being retooled to have clearer roles with respect to one another, they could also be redesigned to include more smaller-scale involvement in the decisionmaking at the top, whether through citizens’ councils or some other mechanism. Conscious efforts to include underrepresented, vulnerable communities through such mechanisms could also help to address justice concerns. Such elements of collaborative hybridity are critical to include in the planning stage so that in the moment of crisis, effective multiscale collaboration takes place

This greater integration comports with the conceptions of hybridity that underlie the first principle. While established through governmental processes, citizens’ councils are centered around key constituencies and create a dialogic process, which both new governance and regulatory institutions theory suggest is valuable. An integration of a mechanism like this into the NCP process has the potential to address some of the challenges of fragmentation, inclusion, and inequality described in Part II. This approach also flows from the theory that undergirds the Article’s

216. NATIONAL COMMISSION REPORT, *supra* note 1, at 268–69.

217. *See id.*

218. *See id.*

second principle of multiscale inclusion. Like many of the dynamic federalism and intersystemic governance accounts, the citizens' councils approach (or some structural equivalent built into the NCP process) would more clearly acknowledge concurrent authority of multiple governmental levels and provide ways of meaningfully including them. In addition, this greater involvement of citizens' councils or an equivalent provides a way of integrating the broader constituencies that the geography theory on scale describes as helping to construct what takes place at each level of government.²¹⁹

Thus, while the thinking about inclusive governance already taking place in the aftermath of the spill represents progress in advancing the three strategies outlined in Section III.B, more creative work is needed to ensure that reform efforts learn from the experiences of the citizens' councils established in the aftermath of the Exxon Valdez spill. Meaningful and effective state and local participation requires the establishment of mechanisms that foster their inclusion rather than just input into decisionmaking, as well as their collaboration with other key parties. An expansion of the citizens' councils model into both the regulation of the offshore drilling and the disaster planning and response provides one such promising mechanism that has proven to provide inclusion without unworkability and might help to prevent some of the inequality and injustice that took place following this spill. However, it remains unclear whether adequate support exists for creating a variation on these councils in the Gulf Coast region and, if so, what form they would take.

D. *Establishing Structures for Dynamic Learning*

The citizens' councils highlighted in the previous Section not only serve as a mechanism of multiscale inclusion but also exemplify dynamic learning structures that could be developed to provide more effective governance in the face of complexity; they help regulatory choices evolve in response to input from key stakeholders. This Section analyzes additional ways in which legal structures can incorporate regulatory adaptability more effectively in this context. Specifically, it considers the proposals for shifting to a more proactive, risk-based performance approach based on the North Sea experience and for establishing independent organizations to self-police in the oil industry and to provide a better scientific and technical knowledge base outside of industry. These three proposals engage the problem of creating responsive regulatory structures, as the third principle suggests would be valuable, that can be flexible in the face of risk and of emergency without losing regulatory force.

219. See *supra* Section III.A.

First, while each of their solutions were somewhat different, all three of the analyses address the failure of the federal government's efforts to ensure that the companies involved in offshore drilling engaged in safety practices that would minimize risk. Both the Commission Report and the White Paper proposed benchmarking that specifically included examining the "safety case" approach used in the North Sea in response to safety problems there. The White Paper did not privilege that solution in its proposal for learning from the experiences of other regions, but the Commission focused on the comparative benefits of that approach. Specifically, in addition to recommending that the current prescriptive regulations focusing on the operator be expanded to include elements such as well design and integrity, the Commission also proposed supplementing those regulations with requirements for the operators to engage in comprehensive risk planning and management and to prove the safety of their operations (the "safety case" approach).²²⁰

At its core, the "safety case" approach shifts the burden of establishing safety from the regulator to the operator. The Commission explained that after Norway transformed its safety regulations in response to a major accident, "[t]he regulator no longer 'approved' operations. Shifting the burden of demonstrating safety to the operator, the regulator would instead now 'consent' to development activity proceeding only upon the operator's demonstration that sufficient safety and risk management systems were in place."²²¹ Although over twenty years ago the MMS convened an internal task force and commissioned the Marine Board of the National Research Council to make recommendations for regulatory overhauls, and that Marine Board report recommended a shift to a more proactive approach, the Exxon Valdez spill and regulatory response to it sidelined these reforms. These reforms were not incorporated into the OPA and, despite publishing a notice requesting comments on a "safety case"-type initiative called the safety and environment management program, MMS still had not published a rule mandating such plans by operators at the time of the BP *Deepwater Horizon* oil spill, in large part due to industry opposition.²²² Although legislation which would require the Secretary of the Interior to promulgate regulations requiring permit applicants to submit a safety case has been introduced in both the Senate and the House,²²³ these bills have not yet made it out of committee and some scholars raise concerns about

220. See NATIONAL COMMISSION REPORT, *supra* note 1, at 251–54; REGULATORY BLOWOUT, *supra* note 100, at 54–58.

221. NATIONAL COMMISSION REPORT, *supra* note 1, at 69.

222. See *id.* at 70–72.

223. See Outer Continental Shelf Reform Act of 2011, S. 917, 112th Cong. § 6 (2011); Implementing the Recommendations of the BP Oil Spill Commission Act of 2011, H.R. 501, 112th Cong. § 211; Increase American Energy Production Now Act of 2011, H.R. 1870, 112th Cong. § 211 (2011). These bills also attempt to implement additional recommendations of the National Commission.

the appropriateness of a safety case approach in the United States. For example, Professor Rena Steinzor analyzes difficulties with transplanting the approaches to risk and confidentiality in the British safety case system and argues that “[i]n the absence of constant, stringent supervision by regulators, safety case regimes are unlikely to result in more than unsupervised exercises in self-regulation that fall at the worst scenario end of the spectrum most of the time.”²²⁴

If a safety case approach were implemented well, it has the potential to address the problems raised in Part II in line with the principles articulated in Section III.B. Its burden-shifting acknowledges the complex public-private dynamics described in Part I.E and makes regulation more responsive to the changing and complex industry than a prescriptive approach. Because companies would be required to have a comprehensive safety and environmental plan and to prove the safety of their approach before acting, that proof would evolve as the industry did, unlike prescriptive standards that need continuous updating. It thus would fit well with the first and third core principles of acknowledging the actors involved and establishing hybrid (here, government and company) regulatory responsibilities and of constituting an adaptive system that can respond to changes in offshore drilling.

However, this approach would only have such dynamism when implemented properly; if the MMS successor agencies lack adequate resources and regulatory rigor, the companies could pass the bar of proving safety without really doing so. Such a governance shift, while very much in line with the principles articulated in Section III.A, thus relies on some of the other proposed reforms—such as more funding for the successor agencies, more rigorous regulatory enforcement, and perhaps more subdivision of those agencies to avoid conflicts and capture (all of which are being attempted by the Obama Administration to some extent)²²⁵—to effect the needed change. This reliance constrains the likely impact of a shift to a safety case approach, despite its theoretical potential.

Second, especially given the ways in which the oil industry has blocked regulatory reform, the Commission’s emphasis on changing industry culture seems like an important priority. One of its core proposals for doing so, beyond raising liability limits to make insurance and the costs of accidents more expensive, is industry self-policing as a supplement to augmented governmental regulation. The Commission explains that in

224. Rena Steinzor, *Lessons from the North Sea: Should “Safety Cases” Come to America?*, 38 B.C. ENV. AFFAIRS L. REV. 417, 439 (2011). Steinzor concludes: “Until and unless an independent regulatory agency is established, and given adequate resources and political support, safety cases should not come to America.” *Id.* at 444. For another scholarly analysis that discusses the possibilities and limitations of the safety case approach, see John Paterson, *The Significance of Regulatory Orientation in Occupational Health and Safety Offshore*, 38 B.C. ENV. AFFAIRS L. REV. 369 (2011).

225. See *supra* notes 44–46 and accompanying text.

situations of technical complexity, industries are often best suited to set standards and self-police, but that this self-policing needs governmental regulation to ensure its rigor.²²⁶ In a proposal that predates the March 2011 Fukushima nuclear incident by two months,²²⁷ the Commission uses the Institute of Nuclear Power Operations (INPO), an independent industry-based institute that rigorously safety-checks sites, as an example of an industry-funded, well-regarded entity that helps create a better safety culture and level of safety. In a parallel to the current situation, President Carter established INPO in response to recommendations by the Kemeny Commission established in the aftermath of Three Mile Island.²²⁸

The BP *Deepwater Horizon* oil spill Commission report says that the oil industry is similar to the nuclear industry in its need to avoid another major accident, its reliance on governmental approval to operate, and its having superior technical know-how to the government. However, the Commission notes that the INPO model would have to be modified in the context of offshore oil and gas because the oil and gas industry is more fragmented and more diverse, with more disparate technology across the industry.²²⁹ It suggests that a self-policing safety organization for the oil and gas industry would have to have three primary qualities: (1) credibility through command of needed technical expertise and independence; (2) adequate support from the oil and gas industry for rigorous inspection and auditing and for sharing safety records and best practices to drive continuous improvement; and (3) safety and environmental practice rules based on benchmarking of global best practices.²³⁰

Like the reform to regulatory approach described above, adding in this industry-based aspect to the overall regulatory scheme fits well with the first and third elements of the conceptual approach articulated in Section II.B. It would establish an overall hybrid system, where an industry-based regulatory effort would complement and be regulated by government-based approaches. Creating such an institution based in the industry, especially if done with a commitment to continuous improvement and benchmarking, would allow for adaptation to changes in the industry over time.

Unfortunately, even more so than a government-driven regulatory approach that shifts the burden to companies, this organization's success would depend on an industry commitment to greater safety and sufficient will within the industry to create an organization at all, much less a rigorous one. Although the BP *Deepwater Horizon* oil spill has been costly

226. NATIONAL COMMISSION REPORT, *supra* note 1, at 234–35.

227. For updates on the Fukushima nuclear incident—the conditions remained serious as of June 2011—see International Atomic Energy Agency, Fukushima Nuclear Accident Update Log, IAEA.ORG, <http://www.iaea.org/newscenter/news/2011/fukushimafull.html> (last visited July 15, 2011).

228. See *About Us*, INPO, <http://www.inpo.info/AboutUs.htm> (last visited July 15, 2011).

229. NATIONAL COMMISSION REPORT, *supra* note 1, at 235–41.

230. *Id.* at 241–42.

both economically and reputationally, the oil and gas industry has not yet shown strong indications of desiring to self-regulate more aggressively. As with the safety case proposal, this organization could only achieve the third principle's goal of regulatory responsiveness if grounded in sufficient will.²³¹

Third, the Commission and the White Paper gave recommendations regarding how to establish a better base of scientific and technological knowledge outside of the oil and gas industry. Many of the important Commission proposals in this area are not focused on reconfiguring governance, but on ways in which these issues could be handled better under the current structure; it recommends that Congress provide agencies with adequate funding for needed research and development and that the key agencies address problematic knowledge gaps in this spill response (such as uncertainty over the rate at which oil was flowing from the spill site, a problem which was interrelated with the lack of adequate access of independent scientists to the site) and provide new guidance on controversial issues like berms and dispersants.²³² The White Paper also recommends augmenting funding.²³³

Both of the analyses recognize the need for greater capacity to independently assess science. The Commission, for example, proposes establishing an advisory board of representatives from key federal agencies, professional societies, academia, industry, and nongovernmental organizations that would craft a research agenda and road map for better oil spill response.²³⁴ The White Paper not only recommends that USGS help provide BOEMRE with enhanced scientific capacity²³⁵ (a proposal that resurrects part of USGS's earlier oversight role),²³⁶ but also calls for Congress to create "an advisory board—-independent of both industry and the agency—to review risk assessments as well as agency safety regulations and standards."²³⁷ The White Paper does not specify the membership of such a board, how it would function, or what its authority would be.

As noted above, the Secretary of the Interior and Director of BOEMRE established such an entity, the Ocean Energy Safety Committee, in January

231. For a comparison of the nuclear versus oil and gas industry's reactions to catastrophe, see Hope M. Babcock, *A Risky Business—Generation of Nuclear Power and Deepwater Drilling for Offshore Oil and Gas*, COLUM. J. ENVTL. L. (forthcoming 2011). For a broader discussion of the difficulties of achieving effective corporate self-regulation, see Hope M. Babcock, *Corporate Environmental Social Responsibility: Corporate "Greenwashing" or a Corporate Culture Game Changer?*, 21 FORDHAM ENVTL. L. REV. 1 (2010).

232. *Id.* at 269–75.

233. REGULATORY BLOWOUT, *supra* note 100, at 21–23.

234. NATIONAL COMMISSION REPORT, *supra* note 1, at 270.

235. REGULATORY BLOWOUT, *supra* note 100, at 37.

236. See NATIONAL COMMISSION REPORT, *supra* note 1, at 63–64.

237. REGULATORY BLOWOUT, *supra* note 100, at 37.

2011.²³⁸ Its scope is largely in line with the Commission's recommendations. In addition, also following the Commission's proposal, the Committee's charter mandates that its approximately fifteen members should include up to six Federal government representatives (with one representative each for BOEMRE, USGS, DOE, NOAA, Coast Guard and EPA), up to four offshore energy industry representatives, up to four representatives of the academic and NGO communities, and a Secretary-appointed Chairperson who has expertise in offshore energy safety.²³⁹ The first set of commissioners reflect that mandate.²⁴⁰

The Ocean Energy Safety Committee has the potential to create responsiveness in a complementary way to the citizens' councils and industry organization described above. It can help to ensure that the scientific and technical community, a key constituency that might not be incorporated fully through the other mechanisms, helps to inform and guide agency decisionmaking. This additional set of eyes and fresh perspective might catch problems with the agency or industry approaches that the people within the other entities miss. The advisory board could thus serve as another constructive vehicle for hybridity, by bringing in additional communities, and making the scientific and technical assessment more responsive and open to additional perspectives in accordance with the third principle. However, because the Committee has only had its second meeting, there simply is not adequate data at this point to assess whether it is achieving its goals.

All three of the proposals discussed in this Section have the theoretical capacity to enhance regulatory responsiveness in line with the third principle, but face practical limitations. Most fundamentally, only the third proposal is currently being implemented, while insufficient political or industry will may exist to bring the other two into being. However, even if all of them moved forward, questions remain about whether the key actors have adequate commitment to change and whether these strategies could be aligned with other reforms that enhance their effectiveness.

E. *Benefits and Limitations of Multidimensional Governance Strategies*

The previous two Sections' analyses lead to a mixed conclusion: A number of the current proposals for governance reform align well with the three principles articulated in Section III.A, but many of them may not be implemented and those that are often must rely on other uncertain reforms to be maximally effective. This conclusion in turn makes an assessment of the benefits and limitations of multidimensional governance strategies important. Given the uncertain possibilities for progress, what does thinking about how to do complex governance better accomplish? Why

238. See *supra* notes 46–47 and accompanying text.

239. See *Ocean Energy Safety Advisory Committee Charter*, *supra* note 46, art. 12.

240. See *Ocean Energy Safety Advisory Committee*, *supra* note 47.

organize regulatory proposals through the lens of these principles rather than just evaluating what has a chance of being politically viable and cobbling together the best approach that one can? This Section provides such an assessment, considering what a focus on multidimensional governance can achieve and what it cannot based on the previous Sections' application of governance principles to reform proposals.

First turning to the benefits, this Part's focus on principles drawn from governance theory flows from Part I and II's exploration of the governance problem. Namely, the intersection of offshore drilling regulation and oil spill response poses fundamental conceptual and practical challenges to existing law and institutions because they are poorly equipped to deal with multiple aspects of complexity in this context. The theories that ground this Part's principles all provide possibilities for rethinking the way in which policymakers approach those challenges. Moreover, as Sections II.C and III.D together exemplify, these principles can provide a framework for assessing specific policy proposals more systematically.

In a world in which insufficient political and industry support prevents many potentially valuable proposals from moving ahead, such a backdrop against which approaches can be assessed has the potential to create important coherence. If hybridity, multiscalar inclusion, and responsiveness are goals, they can help bring order to the necessarily ad hoc nature of many of the regulatory steps that are possible. By conceptualizing what effective complex governance might look like, these theories provide a bridge from the messy "is" to the "ought."

However, the difficulties of effectively implementing these strategies in line with the three principles also reinforces the limits of creative governance approaches, especially when implemented without adequate synergy among them. The needed change in this area, and many others, requires a commitment to better regulation by many key actors and a capacity to implement measures simultaneously. The complex interconnections within the governance system means that such coordinated progress will be difficult to achieve even when these governance principles are taken into account.

This Article does not claim to be able to overcome these foundational limitations. Conceptual innovation cannot solve all of the problems associated with offshore drilling and oil spills and the basic barriers to systematic solutions. Rather, this Part argues that taking a principled approach to reform grounded in governance theory can help to create a more effective and appropriate hybrid system in an imperfect regulatory environment. The conceptual approach proposed in this Part clarifies overarching regulatory goals and helps to map pathways—through some of the specific reform proposals currently being considered—from the current reality to a system that incorporates complexity better. Its principles provide a way of defining what progress in addressing the governance

problems would mean, and in the process, a way of tackling the underlying substantive dilemmas better. The Article's approach is no panacea, but it provides tools for moving forward that could help offshore drilling regulation and spill response interact with complexity more effectively.

CONCLUSION: REFLECTIONS ON BROADER IMPLICATIONS FOR MULTIDIMENSIONAL GOVERNANCE

This Article's in-depth analysis of the governance dimensions, challenges, and potential solutions is intended to assist efforts to regulate offshore drilling and oil spills better in the aftermath of the recent catastrophe in the Gulf. But the types of dilemmas analyzed here reappear in different variations in many other substantive contexts such as health care, the financial system, terrorism, and climate change.²⁴¹ While the reforms needed in each of these areas are case-specific, the principles articulated here have relevance beyond the issues posed by the BP *Deepwater Horizon* oil spill.

The hard policy choices facing our society today are not simply substantively difficult. Rather, they challenge the way in which we structure regulatory systems. We cannot address them effectively without considering the wide range of actors engaged in a myriad of formal and informal relationships throughout the process, and taking into account the possibilities for incorporating that complexity into governance structures. Approaching multidimensional governance better requires: (1) creating an openness to designing hybrid structures that integrate the complex dynamics, (2) examining inclusive and often multiscale governance strategies for doing so, and (3) building in a capacity to adapt to change. While these principles do not make the problems themselves easier, they ensure that governance reflects their character better and can evolve with them.

241. I plan to compare some of these contexts in my future work. See Hari M. Osofsky, *Scale of Law: Rethinking Climate Change, Terrorism, and Financial Crisis* (prospective monograph) (draft manuscript on file with author).