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Environmental Law as a Legal Field: An
Inquiry in Legal Taxonomy

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Abstract

This Article examines the classification of the law into legal fields, first generally and then by specific examination of the field of environmental law. We classify the law into fields to find and to create patterns, which render the law coherent and understandable. A legal field is a group of situations unified by a pattern or set of patterns that is both common and distinctive to the field. We can conceptualize a legal field as the interaction of four underlying constitutive dimensions of the field: (1) a factual context that gives rise to (2) certain policy tradeoffs, which are in turn resolved by (3) the application of values and interests to produce (4) legal doctrine. An organizational framework for a field identifies the field's common and distinctive patterns, which may arise in any of these underlying constitutive dimensions.

The second part of the Article applies this general analytical approach to the field of environmental law, proposing a framework for understanding environmental law as a field of legal study. Two core factual characteristics of environmental problems are, in combination, both common and distinct to environmental law: physical public resources and pervasive interrelatedness. Numerous use demands are placed on environmental resources, creating conflicts. These use conflicts define the policy tradeoffs that frame environmental lawmaking, forming the basis for a use-conflict framework for conceptualizing environmental lawmaking. A use-conflict framework for environmental lawmaking carries significant analytical advantages over other models for conceptualizing environmental law as a legal field.

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Todd S. Aagaard*

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What makes an area of law a legal field? What distinguishes areas of law we regard as legal fields from the oft-cited joke of the “Law of the Horse”?¹ What do we aim to accomplish with legal taxonomy, by classifying the law into more specific sub-disciplines? What kind of taxonomical scheme advances those objectives? What characteristics must an area of law exhibit to advance those aims and to establish its validity as a legal field?

This Article addresses these questions, both generally and by specific examination of the field of environmental law. Environmental law’s existential angst provides fertile ground for considering questions of legal taxonomy. There is no doubt that something we call *environmental law* exists. We are in the vicinity of the fortieth anniversary of the birth of modern environmental law in the United States.² Over that period, environmental law has matured considerably and has reached a certain level of stability.³ There seems little doubt that environmental law is now a permanent fixture in the law. On the other hand, the thrill of the environmental legal revolution of the 1970s has long since faded, the content of environmental law has complexified dramatically over time, and there has arisen a marked frustration with environmental law’s incoherence. Environmental law is bemoaned, even among its advocates, as highly

¹ According to one telling of the joke, the Law of the Horse would consist of Contracting for a Horse, Owning a Horse, Torts by a Horse, and Litigation Over a Horse. Darian M. Ibrahim & D. Gordon Smith, *Entrepreneurs on Horseback: Reflections on the Organization of Law*, 50 ARIZ. L. REV. 71, 71 (2008) (quoting Harold Hongju Koh, *Is There a “New” New Haven School of International Law?*, 32 YALE J. INT’L L. 559, 572 n.85 (2007)); see also Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207, 207 (1996) (“Lots of cases deal with sales of horses; others deal with people kicked by horses; still more deal with the licensing and racing of horses, or with the care veterinarians give to horses, or with prizes at horse shows.”). For additional references to, and discussion of, the “Law of the Horse,” see Easterbrook, *supra*, at 207, 214 (attributing the origin of the phrase to Karl Llewellyn); Einer R. Elhauge, *Can Health Law Become a Coherent Field of Law?*, 41 WAKE FOREST L. REV. 365, 368 (2006); Henry T. Greely, *Some Thoughts on Academic Health Law*, 41 WAKE FOREST L. REV. 391, 404-05 (2006); Lawrence Lessig, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501 (1999).

² The first major federal environmental case, *Scenic Hudson Preservation Conference v. Federal Power Commission*, 354 F.2d 608 (2d Cir. 1965), was decided in 1965. The first modern federal environmental statute, the National Environmental Policy Act (“NEPA”), 42 U.S.C. §§ 4321-4370f, was signed into law on January 1, 1970. See also RICHARD J. LAZARUS, *THE MAKING OF ENVIRONMENTAL LAW* 48 (2004) (noting that 1970 saw, in addition to signing of NEPA, the creation of the President’s Council on Environmental Quality, the first nationwide celebration of Earth Day, the creation of the U.S. Environmental Protection Agency, and the passage of the Clean Air Act’s demanding and uncompromising air pollution control program”).

³ See James L. Huffman, *The Past and Future of Environmental Law*, 30 ENVTL. L. 23, 23 (2005).

fragmented⁴ and unduly complicated.⁵ There is a strong sense that environmental law needs an overall vision or descriptive framework that works to cohere the subject matter.⁶

The project of attempting to identify such a unifying framework for environmental law poses certain questions: What is environmental law? When we describe a factual pattern, case, or rule as arising within environmental law, what associations do we mean to convey by that designation? What, if anything, unifies environmental law? Is environmental law a legal field, or just an amalgamation of laws arranged under a general subject matter? Does environmental law function distinctively? What differentiates environmental law from other legal fields?

Addressing such questions, whether in environmental law or in some other area, is not just academic rumination. Classification is inherent and fundamental to the operation of law. Justice requires consistency.⁷ Legal classifications enable consistency by designating categories of similar situations to which a common set of principles apply. The category into which a situation is assigned thus may determine how the law applies to the situation.⁸ The law works through categories, and one of the more

⁴ See, e.g., Uwe M. Erling, *Approaches To Integrated Pollution Control in the United States and the European Union*, 15 TUL. ENVTL. L.J. 1, 11 (2001); Daniel A. Farber, *Foreword*, 32 ECOLOGY L.Q. 383, 386 (2005); Robert L. Fischman, *The Divides of Environmental Law and the Problem of Harm in the Endangered Species Act*, 83 IND. L.J. 661, 662 (2008); Elizabeth Glass Geltman & Andrew E. Skroback, *Reinventing the EPA to Conform with the New American Environmentalism*, 23 COLUM. J. ENVTL. L. 1, 29 (1998); Christine A. Klein, *Preserving Monumental Landscapes Under the Antiquities Act*, 87 CORNELL L. REV. 1333, 1338 n.22 (2002); Robert V. Percival, *Regulatory Evolution and the Future of Environmental Policy*, 1997 U. CHI. LEGAL F. 159, 190 (1997).

⁵ DANIEL A. FARBER, *ECO-PRAGMATISM* 1 (1999); Peter Manus, *Our Environmental Rebels: An Average American Law Professor's Perspective on Environmental Advocacy*, 40 NEW ENG. L. REV. 499, 516 (2006); Joseph L. Sax, *Environmental Law in the Law Schools: What We Teach and How We Feel About It*, 19 ENVTL. L. RPT. 10,251 (1989); David A. Westbrook, *Liberal Environmental Jurisprudence*, 27 U.C. DAVIS L. REV. 619, 621, 625 (1994).

⁶ See Daniel A. Farber, *Foreword*, 32 ECOLOGY L.Q. 383, 387 (2005) (“But without any overall vision of the field, it is unclear how either agencies or courts can produce a halfway coherent approach to environmental law.”); Westbrook, *supra* note 5, at 621 (“[E]nvironmental law is not a discipline, because it lacks the professional consensus on a coherent internal organization of materials a discipline requires.”).

⁷ See, e.g., *Arkansas Elec. Coop. Corp. v. Arkansas Pub. Serv. Comm'n*, 461 U.S. 375, 391 (1983); GUIDO CALABRESI, *THE COSTS OF ACCIDENTS* 293-94 (1970).

⁸ To take just one example, important innovations during the 1970s in the legal rules that apply to residential property leasing were justified by virtue of a reassignment of residential leasing from the category of traditional property law to contract law. See, e.g., *Javins v. First National Realty Corp.*, 428 F.2d 1071, 1074-75 (D.C. Cir. 1970) (rejecting the application of “old common law doctrines” of “real property transactions” and relying

important types of categories employed in the law are legal fields. We designate legal fields—environmental law, labor law, criminal law—on the premise that those designations identify something important about how the law operates.

Thinking about what it means to designate a field of law and what is required for an area of law to be a legal field therefore carries the promise of improving our understanding of how the law functions. An improved understanding of the law, in turn, may facilitate efforts to improve the law. When we understand how the law functions, we are better able to identify situations in which the law does not promote our desired objectives and to posit alternative approaches that may be more effective.⁹ Constructing an analytical framework that brings together an area of law as varied and complex as environmental law will not itself resolve the recurring conflicts and difficulties that stymie environmental lawmaking, but it may well expose those conflicts and difficulties in a new light and help to frame the decisions facing legislatures, agencies, and courts, thereby facilitating more effective lawmaking.

This Article's examination of legal taxonomy proceeds in two Parts. Part I addresses the general question of what makes an area of law a legal field. We classify the law into fields to find and to create patterns, which render the law coherent and understandable. A legal field is a group of situations unified by a pattern or set of patterns that is both common and distinctive to the field. We can conceptualize a legal field as the interaction of four underlying constitutive dimensions of the field: (1) a factual context that gives rise to (2) certain policy tradeoffs, which are in turn resolved by (3) the application of values and interests to produce (4) legal doctrine. An organizational framework for a field identifies the field's common and distinctive patterns, which may arise in any of these underlying constitutive dimensions. The more that common and distinctive features predominate within the field, the more useful the field is likely to be as an analytical category. In addition, ideally a legal field also has trans-substantive implications that extend beyond the field.

on contract principles to hold that a warranty of habitability should be applied into urban residential leases); *Sommer v. Kridel*, 378 A.2d 767, 771, 773 (N.J. 1977) (rejecting the application of "principles of property law" and relying on contract principles to hold that a landlord has a duty to mitigate damages where it attempts to recover rent due from a defaulting tenant).

⁹ Cf. Abraham Bell & Gideon Parchomovsky, *Reconfiguring Property in Three Dimensions*, 75 U. CHI. L. REV. 1015, 1070 (2008) (contending that the authors' "three-dimensional view" of property law "leads to a richer and more coherent view of the field" that can enable "scholars and lawmakers . . . to tailor better solutions to current and future property problems").

Part II applies this general approach to the field of environmental law, proposing a framework for understanding environmental law as a field of legal study. Part II begins by examining and critiquing two prominent prior efforts to explain environmental law as a coherent legal field.¹⁰ It argues that these efforts ultimately fail, primarily because their frameworks are unduly focused on environmentalism, which renders their characterizations of environmental law incomplete, rather than on identifying a pattern of features that are common and distinctive to environmental law.

Part II then proceeds to set forth a superior organizational framework for environmental law, rooted in the constitutive dimensions of the field. It argues that environmental problems—the factual context of environmental lawmaking—involve two core factual characteristics that are, in combination, both common and distinct to environmental law: *physical public resources* and *pervasive interrelatedness*. Numerous use demands are placed on these environmental resources, creating conflicts. These use conflicts define the policy tradeoffs that frame environmental lawmaking, forming the basis for a *use-conflict framework* for conceptualizing environmental lawmaking. These use conflicts derive from the specific factual context of the decision at issue, however, and cannot be meaningfully generalized into abstractions. For this reason, the environmental law doctrine that is produced from the resolution of environmental use conflicts does not fit a clear, general pattern. There are no core principles that unify all of substantive environmental law doctrine. Despite the absence of such principles, however, the analytical framework set forth in this Article, which emphasizes the role of use conflicts in environmental lawmaking, and the generation of use conflicts through competition among pervasively interrelated uses of physical public resources, meaningfully coheres the field of environmental law.

I. WHAT MAKES AN AREA OF LAW A LEGAL FIELD?

A. *Legal Taxonomy and Legal Fields*

We organize the law into distinct fields as a form of legal taxonomy, on the premise that such classification will facilitate an improved

¹⁰ A. Dan Tarlock, *Is There a There There in Environmental Law?*, 19 J. LAND USE ENVTL. L. 213 (2004); Westbrook, *supra* note 5.

understanding of the law.¹¹ As Emily Sherwin has observed, significant benefits can result from a useful categorization of the law:

[O]rganization of law into categories facilitate[s] legal analysis and communication of legal ideas. . . . [A] comprehensive formal classification of law provides a vocabulary and grammar that can make law more accessible and understandable to those who must use and apply it. It assembles legal materials in a way that allows observers to view the law as a whole. This in turn makes it easier for lawyers to argue effectively about the normative aspects of law, for judges to explain their decisions, and for actors to coordinate their activities in response to law.¹²

¹¹ See Robert C. Berring, *Legal Research and the World of Thinkable Thoughts*, 2 J. APP. PRAC. & PROCESS 305, 306 (2000) (“Putting information in context gives the researcher a powerful tool for understanding legal information.”); Ugo Mattei, *Three Patterns of Law: Taxonomy and Change in the World’s Legal Systems*, 45 AM. J. COMP. L. 5, 5 (1997) (“Taxonomy . . . provides the intellectual framework of the law and it makes the law’s complexity more manageable.”); Linda Silberman, *Transnational Litigation: Is There a “Field”?* A Tribute to Hal Maier, 39 VAND. J. TRANSNAT’L L. 1427, 1430-32 (2006) (“[T]ransnational litigation has become a field because the discrete pieces can only be understood in relation to each other and to the whole”); *id.* at 1431 (“The study of transnational litigation contains interrelated elements that must be brought together in order to understand and appreciate any one of them.”); Stephen A. Smith, *Taking Law Seriously*, 50 U. TORONTO L.J. 241, 243 (2000) (“Gaining knowledge of a subject is largely a matter of learning how to classify the subject and its constituent elements.”); *id.* at 244 (“We draw classifications in law not just for the sake of classifying but because classifying rules, cases, and so on is a large part of what acquiring legal knowledge means.”); Daniel J. Solove, *A Taxonomy of Privacy*, 154 U. PA. L. REV. 477, 484 (2006) (contending that a good taxonomy “is not simply an attempt to catalog existing laws,” but advances our understanding of the area of the law and thereby “provide[s] a useful framework for its future development”); see also GEOFFREY C. BOWKER & SUSAN LEIGH STAR, SORTING THINGS OUT: CLASSIFICATION AND ITS CONSEQUENCES 1 (1999) (“To classify is human.”); 1 ENGLISH PRIVATE LAW xxxi-ii (Peter Birks, ed., 2000) (“The search for order is indistinguishable from the search for knowledge.”). But see Roscoe Pound, *Classification of Law*, 37 HARV. L. REV. 933, 938 (1924) (“[W]e must renounce extravagant expectations as to what may be accomplished through classification of law. . . . For I doubt whether a classification is possible that will do anything more than classify.”).

¹² Emily Sherwin, *Legal Positivism and the Taxonomy of Private Law*, in STRUCTURE AND JUSTIFICATION IN PRIVATE LAW: ESSAYS FOR PETER BIRKS 103, 119 (Charles Rickett & Ross Grantham, eds., 2008); see also Mattei, *supra* note 11, at 6 (“Taxonomy plays an important role in transferring knowledge from one area of the law to another.”); Smith, *supra* note 11, at 244 (“Classifying a particular decision . . . is a claim about the meaning of the decision, as well as about how the decision should be applied in the future. To make good decisions courts need to distinguish like from unlike: to understand the law scholars need to do the same thing. When lawyers and scholars argue about how a case should be

Not every legal categorization, however, necessarily produces such benefits, and there are an innumerable number of theoretically available classifications from which to choose. Any particular situation that arises in the law potentially can be classified into numerous different categories. For example, an injury in the workplace could be characterized as a matter of, among other subject matter categories, labor law, employment law, occupational safety and health law, tort law, criminal law, federal law, state law, common law, and statutory law. Each subject matter category, in turn, can be defined and characterized in numerous different ways—that is, there are many possible understandings of what it means to fall within the categories of tort law, employment law, and so forth. The initial task of the legal taxonomer, therefore, is to find, among the immense variety of categorizations that theoretically can be employed to classify the law, those categorizations that yield the benefits Sherwin notes.

Classification systems operate by employing an organizational framework to differentiate among the constituent elements being organized, determining which elements fall within which categories. A classification is useful when the organizational framework reflects patterns that reveal something important to us about the materials being classified.¹³ If a classification system is helpful, applying the organizational framework differentiates among the elements in a manner that signals salient similarities and differences, bringing some degree of coherence to an otherwise undifferentiated mass.¹⁴

Thus, the goal of legal taxonomy is to identify significant patterns in the law. Which patterns are significant, and therefore worthy of identification, may depend on the specific objective of the classification.¹⁵ In general, however, we would expect a pattern to be significant and worthy of identification if it is legally relevant—that is, if it affects the application of the law.

decided, or about the meaning of a particular rule, they are in large part arguing about how to classify the case or the rule.”).

¹³ Elhauge, *supra* note 1, at 370 (“[D]o we gain insights from thinking as a group about the set of legal materials grouped under this rubric?”).

¹⁴ See Jay M. Feinman, *The Jurisprudence of Classification*, 41 STAN. L. REV. 661, 674 (1989) (“Classification is designed to reduce the complexity of complex analysis and to highlight similarities and differences among the objects classified.”); Kenneth R. Richards, *Framing Environmental Policy Instrument Choice*, 10 DUKE ENVTL. L. & POL’Y F. 221, 232 (2000) (“A useful taxonomy . . . inform[s] the user about the important similarities and differences among the various items in the classification. . . . Taxonomy generally employs an organizing principle to differentiate among the elements of the classification.”).

¹⁵ Cf. ENGLISH PRIVATE LAW, *supra* note 11, at xliii (“different classifications simply answer different questions”).

Not all classifications of the law and legal taxonomy look to categorize the law into legal fields. West Publishing Company's American Digest System, for example, sorts legal issues into more than 400 alphabetically arranged topic fields.¹⁶ As to the practice, teaching, study, and deciding of law, however, legal fields are probably the most important classification of the law. The designation of a situation as falling within, or outside of, a particular legal field often carries powerful associations about how the situation should be understood and what legal rule should apply to it.¹⁷

A field of law primarily functions as a frame of reference for understanding the set of situations that falls within the field, and to some extent for distinguishing situations within the field from those outside of the field. The field's organizational framework identifies the pattern or patterns that it associates with the field.¹⁸ The usefulness of the field varies depending on how well that pattern explains the various situations that the field encompasses. This explanatory power, in turn, depends on several factors.

First, a field's explanatory power depends on the extent to which situations that arise within the field exhibit a recognizable pattern. The stronger the pattern is, the more powerful the field is as a frame of reference for analyzing the situations it encompasses.

Second, a field's explanatory power depends on the simplicity of the pattern. All else equal, the simpler the pattern is, the more powerful the field is as a means of explaining the situations it includes.

¹⁶ See WEST PUBLISHING CO., THE WEST KEY NUMBER SYSTEM: ALPHABETICAL LIST OF DIGEST TOPICS 1, available at <http://west.thomson.com/documentation/westlaw/wlawdoc/wlres/keynmb06.pdf>; see also Berring, *supra* note 11, at 309 (noting that the American Digest System "was built on a structure of topics and key numbers that allows for the detailed sorting of legal issues into neat categories and sub-categories" and "purports to describe every possible legal situation that can exist").

¹⁷ See, e.g., *Goodman v. Lukens Steel Co.*, 482 U.S. 656, 662 (1987) (holding that state statute of limitations for tort actions applies to federal claims brought under 42 U.S.C. § 1981, because such actions sound in tort rather than contract); *Hydro Conduit Corp. v. Kemble*, 793 P.2d 855 (N.M. 1990) (applying state statute that conferred sovereign immunity over "actions based on contract," and holding that an action seeking restitution for unjust enrichment fell within the category of contract for purposes of the statute); *Zurich Am. Ins. Co. v. Goodwin*, 920 So.2d 427, 433 (Miss. 2006) (noting that choice-of-law rules depend on the substantive area of law into which a case falls).

¹⁸ See Nan D. Hunter, *Risk Governance and Deliberative Democracy in Health Care*, 97 GEO. L.J. 1, 17 (2008) (contending that the author's proposed framework provides a "lens" for understanding her field of health law through "greater intellectual coherence"); see also *id.* at 4 (noting the author's objective of developing "a more holistic and integrated conceptualization of health law"); *id.* at 19 (noting that the debate over the proper framework for health law "centers on how best to capture the uniqueness and coherence of health law").

Third, a field's explanatory power depends on the extent to which the pattern predominates within the field. That is, of the various characteristics of the situations that arise within the field, the characteristics exhibiting the pattern predominate over other characteristics that do not. Where the characteristics that exhibit the pattern predominate over other characteristics, the pattern associated with the field will carry a greater power to explain situations within the field.

Fourth, a field's explanatory power depends on the extent to which a single pattern explains the various issues that arise within the field. A framework that is helpful only in explaining certain issues that arise within a field is less helpful than a framework that explains many different issues within the field.

Fifth, a field's explanatory power depends on the breadth of the field; the scope of situations that arise within the field. The more situations that can be viewed as arising within the field (and that exhibit the pattern that coheres the field), the broader the field and the more powerful the field is as a frame of reference. The perfect framework for a perfectly coherent field, therefore, would fully explain various different issues that arise in a vast scope of situations with a simple organizing framework.

B. The Allure, and Hazard, of Coherence

Taxonomy inevitably and inherently is, to some degree, a quest for coherence. We employ taxonomy to identify a pattern that functionally coheres the field of study by adding some amount of logical order, consistency, and clarity. This is the benefit of taxonomy, and it is an important benefit. As Ann Althouse has observed, "Finding a scheme of coherence, a framework, really is the process of understanding. To merely observe that the field is chaotic, arcane, or incoherent is to decline the work of understanding. . . . [W]e must search for frameworks and coherencies as a necessary means of thinking about the subject."¹⁹

Coherence thus exerts a strong attractive force for the legal profession, inducing what Theodore Ruger has called a "coherence impulse."²⁰ Coherence has "dramatic potential for explanation and illumination"²¹ and "promises a vision of law that is unified, predictable and

¹⁹ Ann Althouse, *Late Night Confessions in the Hart and Wechsler Hotel*, 47 VAND. L. REV. 993, 1001 (1994).

²⁰ Theodore W. Ruger, *Health Law's Coherence Anxiety*, 96 GEO. L.J. 625, 628 (2008); see also *id.* at 626 (referring to "coherence anxiety").

²¹ *Id.* at 630; see also *id.* (noting that "the academic preference for elegant and sparse theoretical coherence reflects a worthy intellectual goal of discernment and illumination");

rational.”²² As a result, coherent fields are easier to learn, practice, decide, and theorize.²³ Not coincidentally, the archetypal common-law fields that the legal profession intuitively regards as ideal legal fields, and that form the foundation for law school curricula, are often characterized by strongly coherent, even essentialist, models.²⁴ For newer areas of law, coherence is perceived as a ticket to legitimacy as a legal field.²⁵ As a result, much of the work of legal taxonomers has been to develop frameworks that bring coherence to an area of law. In considering the coherence of a legal field, we can think of coherence as the strength, simplicity, and predominance of the field’s patterns.²⁶

Not all areas of law, however, are easily susceptible to a coherent account; some areas are just less coherent. An area of law’s coherence depends on, among other things, the extent to which it exhibits strong, recognizable patterns,²⁷ and several factors may influence the existence of such patterns.

First, an area of law is more likely to exhibit consistency if its factual patterns have a great deal of commonality. All else equal, the more similar the factual circumstances of situations that arise within the area, the more consistency we would expect in the law that governs those situations.

id. at 631 (“In this framework the cure for the malaise is the imposition of some grand unifying theme, the discovery of which is a central test of the field.”).

²² Saiman, *supra* note 62, at 511; *see also* Robert C. Berring, *Legal Research and Legal Concepts: Where Form Molds Substance*, 75 CAL. L. REV. 15, 17 (1987) (ascribing to Christopher Columbus Langdell’s approach to studying the common law the belief that “[a]ll of the pieces of the puzzle could be assembled into a coherent picture”); Brian Langille & Patrick Macklem, *The Political Economy of Fairness: Frank Iacobucci’s Labour Law Jurisprudence*, 57 U. TORONTO L.J. 343, 343 (2007) (characterizing coherence as “a necessary precondition to principled decision making”).

²³ On the other hand, the legal profession may in some respects have an interest in maintaining at least some inscrutability in the law. *See* Cisco General Counsel on State of Technology in the Law, *available at* http://blogs.cisco.com/news/comments/cisco_general_counsel_on_state_of_technology_in_the_law/ (noting that, when “law gets standardized, it can be outsourced, co-sourced, integrated, aggregated, syndicated and shared,” empowering clients *viz.* a *viz.* their attorneys).

²⁴ *See* BRUCE ACKERMAN, *RECONSTRUCTING AMERICAN LAW* 11-22 (1984)

²⁵ *See* Ruger, *supra* note 20, at 630 (noting that “the intellectual pressure to achieve singular coherence is felt most acutely by newer fields aspiring to more established, if not canonical, status”); *see also* Steven Price, *Book Review: Media Law in New Zealand*, 36 VICT. U. WELLINGTON L. REV. 665, 665 (2005) (tying recognition of the coherence of media law to “[t]he emergence of media law as a legitimate field of study”); Saiman, *supra* note 62, at 519 (“In a variety of ways, the legitimacy of restitution [as a legal field] is entirely bound up in the debate regarding the conceptual coherence of the proposed analytic category.”).

²⁶ *See supra* text following note 18 (identifying the strength, simplicity, and predominance of a field’s pattern as some of the factors that determine a field’s explanatory power).

²⁷ *See supra* text following note 18.

Second, areas of law in which a single value or interest has an influence are more likely to follow strong, recognizable patterns.

The historical development of water law in the western United States illustrates the effect of both these factors. Water law in the western United States developed as a relatively simple system for allocating irrigation water to local agriculture on a first-in-time priority basis.²⁸ Over time, as the West developed, the factual context changed and became more varied and complex. Development brought greater demand for water, leading to the construction of large-scale dams and aqueduct systems to store and deliver water.²⁹ Development also brought a greater diversity of uses making claims to water resources, including industrial uses and municipal drinking water systems.³⁰ In addition, increased environmental consciousness led to greater recognition of so-called “in-stream uses” that benefit the natural environment, such as fish populations.³¹ Together, the diversification of the factual context and the decline of resource exploitation as the overriding value of Western water law led to the development of new rules and principles that have rendered it more complicated and less coherent.

Third, centralized and well-coordinated lawmaking processes are more likely to produce law that follows a strong pattern, and thus areas in which law is created by such processes are more likely to exhibit strong, recognizable patterns. For example, whether an area of law is governed primarily by detailed legislation or by judicial decisions likely influences the coherence of the area. In judicial lawmaking, the predominance of reasoning from precedent creates a strong influence favoring coherence. Judicial decisionmaking intentionally looks to cohere precedential materials and to produce a new decision consistent with that coherent understanding of precedent; the most fundamental path of judicial reasoning is to identify

²⁸ See Robert Glennon, *Water Scarcity, Marketing, and Privatization*, 83 TEX. L. REV. 1873, 1898 (2005); A. Dan Tarlock, *The Future of Prior Appropriation in the New West*, 41 NAT. RESOURCES J. 769, 770 (2001).

²⁹ Tarlock, *supra* note 28, at 770.

³⁰ See *id.*

³¹ See Daphna Lewinsohn-Zamir, *More Is Not Always Better than Less: An Exploration in Property Law*, 92 MINN. L. REV. 634, 656 n.100 (2008) (“[S]ome Western states have recognized rights in instream flows, which entitle their holders to refrain from diversion and consumption of water, in order to protect endangered fish, wildlife and habitats, or for recreational purposes.”); A. Dan Tarlock & Sarah B. Van de Wetering, *Growth Management and Western Water Law: From Urban Oases to Archipelagos*, 14 HASTINGS W.-N.W. J. ENVTL. L. & POL’Y 983, 994-95 (2008) (“Non-consumptive uses have long been recognized, but these uses, such as fishery maintenance flows, were relatively minor until the 1970s.”).

a pattern in the law and then to follow that pattern.³² Statutory lawmaking, on the other hand, lacks a similar coherence-favoring force. Legislatures enact and amend different statutes in different lawmaking moments, each associated with its own particular context and its own set of compromises among its own set of competing interests exerting pressures on the legislators.³³ Legislators act in response to those pressures, and by contrast face relatively little pressure to conform their decisions to prior patterns, except perhaps to some minimal extent necessary to avoid direct conflicts among or within statutes that would render a statute unworkable.³⁴

³² See, e.g., Susan Etta Keller, *The Rhetoric of Marriage, Achievement, and Power: An Analysis of Judicial Opinions Considering the Treatment of Professional Degrees as Marital Property*, 21 VT. L. REV. 409, 411 (1996) (noting that courts decide cases by “extrapolat[ing] the facts at hand into a more universal pattern, connecting the precedent they will set to the precedent they follow”). This norm predominates even outside of the confines of binding precedent within hierarchical court systems, as evidenced by the many cases in which courts of one jurisdiction rely on and address decisions from other jurisdictions. See, e.g., *Ortega v. City of New York*, 9 N.Y.3d 69, 79 (N.Y. 2007) (citing *Temple Community Hosp. v. Superior Ct.*, 20 976 P.2d 223, 232 (Cal. 1999), in which the California Supreme Court declined to recognize a tort cause of action for intentional third party spoliation of evidence); *N.M. v. Lackey*, 110 P.3d 512, 515 (N.M. App. 2005) (citing *Idaho v. Wixom*, 947 P.2d 1000, 1002 (Idaho 1997), and *Arizona v. Richcreek*, 930 P.2d 1304, 1308 (Ariz. 1997) (en banc), as cases in which, the Idaho Supreme Court and the Arizona Supreme Court, respectively, concluded on “similar facts” that police officers lacked reasonable suspicion to stop a defendant). Of course this does not mean that judge-made law is entirely consistent. Different judges may read precedent differently or view the facts differently, and thereby reach different decisions in similar cases. See, e.g., John Burritt McArthur, *The Class Action Tool in Oilfield Litigation*, 45 U. KAN. L. REV. 113, 148 (1996) (“Even though there is little disagreement over general [class] certification standards, the same facts can lead to different results in different courts.”). Sometimes judges simply disagree and decline to follow each other’s decisions. See, e.g., *Philadelphia Marine Trade Ass’n-Int’l Longshoremen’s Ass’n Pension Fund v. Comm’r*, 523 F.3d 140, 151-52 (3d Cir. 2008) (explicitly disagreeing with, and declining to follow, *Deutsch v. Commissioner*, 599 F.2d 44, 44-46 (2d Cir.1979), and *Miller v. United States*, 784 F.2d 728, 730-31 (6th Cir.1986) (per curiam)). But the role of precedent-based reasoning in judicial decisionmaking nevertheless undeniably exerts an overall force that favors coherence.

³³ See, e.g., LAZARUS, *supra* note 2, at 67-124 (discussing the political history of the major federal environmental statutes).

³⁴ Areas of the law governed primarily by detailed administrative regulations may fall somewhere between judge-made law and statutory law. Agencies are, like legislatures, primarily political institutions. Like statutes, regulations are promulgated and revised in different lawmaking moments, in different contexts that result in different compromises among different competing interests. Moreover, because regulations derive from statutes, which may treat similar situations quite differently, differences among statutes may require agencies to enact regulations that approach similar problems differently under different statutes. Administrative regulations are almost inevitably more complex than legislation, and complexity is associated with incoherence. Cf. Peter H. Schuck, *Legal Complexity: Some Causes, Consequences, and Cures*, 42 DUKE L.J. 1, 10 (1992) (arguing that, as

These three factors are reasons why coherence, despite its advantages, may not be achievable for certain areas of law. In addition, there may be reasons why we would not prefer coherence. Coherence also has its disadvantages.

First and most important, seeking coherence can lead to imposing a framework that creates an appearance of coherence where coherence does not in fact exist.³⁵ An organizational framework that prioritizes coherence may do so at the cost of imprecisely and inaccurately characterizing the field, by ignoring complexity and variation. Because the law and lawmaking processes are often complicated and messy, forged by numerous decisionmakers acting in diverse contexts, areas of law seldom live up to the ideal of coherence.³⁶ Thinking of a body of law as a coherent legal field worthy of particularized study is analogous to putting on blinders and

compared with legislation, the delegation of discretion to agencies tends to result in legal rules that are more complex). Complexity is not necessarily congruent with incoherence, but the two characteristics are at least highly correlated.

Other factors, however, may give agencies an incentive to adopt consistent approaches in their regulations. Institutional or professional norms that transcend particular statutes may lead agencies to take similar approaches to disparate statutory situations, thereby increasing coherence. Because many of its statutes involve some form of evaluating risks to public health and the environment, for example, EPA has adopted guidance documents that prescribe a process for assessing carcinogenic risks that applies throughout the agency's activities. *See* Notice of Availability of the Document Entitled Guidelines for Carcinogen Risk Assessment, 70 Fed. Reg. 17,765 (Apr. 7, 2005). Moreover, the standards by which courts review agency rules encourage consistency among agency decisions. *See, e.g.,* Westar Energy, Inc. v. Federal Energy Regulatory Comm'n, 473 F.3d 1239, 1241 (D.C. Cir. 2007) ("A fundamental norm of administrative procedure requires an agency to treat like cases alike."); *Hall v. McLaughlin*, 864 F.2d 868, 872 (D.C. Cir. 1989) ("Reasoned decisionmaking requires treating like cases alike; an agency may not casually ignore its own past decisions.") (footnote omitted). In fact, however, most agency rules are more a product of political negotiations among competing interest groups than a reasoned attempt to create a coherent body of law.

³⁵ *See, e.g.,* Robert C. Berring, *supra* note 22, at 16 (noting that William Blackstone's *Commentaries* "struggled to place the common law of England into a rational narrative structure" but that he "has been roundly excoriated by later critics for bending the data to fit his needs"); *cf.* Chaim Saiman, *Restitution in America: Why the US Refuses to Join the Global Restitution Party*, 28 OXFORD J. LEGAL STUD. 99, 107 (2008) (noting the legal realist view that "coherent classification of legal categories is all but impossible [because e]ach instance of adjudication presents a localized act of balancing the competing interests that the legal system can neither fully realize nor reconcile").

³⁶ *See* Dan Simon, *A Third View of the Black Box: Cognitive Coherence in Legal Decision Making*, 71 U. CHI. L. REV. 511, 516 (2004) ("Tasks are said to be complex when their constitutive considerations are numerous, contradictory, ambiguous, and incommensurate. Most legal cases that are litigated and appealed are of this nature, in that the facts can be ambiguous, incomplete, and contradictory; different rules, values, and principles can be invoked to support opposite conclusions; and the case at hand can be somewhat analogous to more than one previous decision.") (footnote omitted).

filters; blinders to obscure situations that lie outside of the field, and filters to obscure those aspects of situations that arise within the field but that are not focused on by the analytical framework that characterizes the field. For better and worse, that framework defines the universe of “thinkable thoughts” as to the category of materials it encompasses.³⁷ Fields of law focus attention on a particular aspect of the law only by intentionally obscuring other aspects.³⁸ The quest for coherence thus is prone to breeding essentialism and reductionism.³⁹ For example, corrective justice accounts of tort law, by virtue of their focus on bipolarity—the relationship between the tortfeasor and the victim that obligates the tortfeasor directly to rectify the victim’s injury—neglect various tort rules that do not reflect bipolarity.⁴⁰ Applying a reductionist framework to achieve coherence necessarily oversimplifies the law, disregarding outcomes that do not match the coherent ideal.⁴¹ Thus, as organizational frameworks yield to coherence anxiety, they lose some of their descriptive force.

Second, chasing coherence discourages experimentation in lawmaking. Permitting a diversity of legal approaches allows lawmaking institutions to test various alternative approaches to a particular problem,

³⁷ Daniel Dabney coined the phrase “universe of thinkable thoughts” to describe the way in which “categories for classifying the law . . . become the structure of the law,” and “thoughts that aren’t represented in the system . . . become unthinkable.” Daniel Dabney, *The Universe of Thinkable Thoughts: Literary Warrant and West’s Key Number System*, 99 L. LIBRARY J. 229, 230 (2007); see also *id.* at 236 (“The essence of a classification scheme is to be a closed list of the salient ideas in the literature it serves, and when the system, by omitting an idea, implies that the idea is not sufficiently tailored to be included, it can be an obstacle to considering the idea.”). The phrase is probably more associated with Robert Berring, who agrees that Dabney originated the term. See, e.g., Berring, *supra* note 11, at 311 n.13.

³⁸ Cf. BOWKER & STAR, *supra* note 11, at 5 (“[E]ach category valorizes some point of view and silences another.”); *id.* at 44 (noting that the act of creating a classification necessarily also entails “deciding what will be visible or invisible within the system”); Dabney, *supra* note 37, at 233 (noting that a classification necessarily implies “that some aspects of the situation are more important than others”).

³⁹ See Ruger, *supra* note 20, at 629 (noting that the classical field-coherence paradigm “favors frames of analysis that are powerfully reductionist in character, and which purport to explain a vast array of legal materials with the use of one or a few core conceptual building blocks”).

⁴⁰ See Benjamin C. Zipursky, *Civil Recourse, Not Corrective Justice*, 91 GEO. L.J. 695, 709-33 (2003).

⁴¹ See Feinman, *supra* note 14, at 692 (noting that, because classifications necessarily emphasize some features and deemphasize others, doctrinal classification leads to “framing bias,” which occurs when the classification oversimplifies differences among cases within a category); cf. also Simon, *supra* note 36, at 513 (2004) (explaining “coherence-based reasoning,” a theory of cognitive psychology “posit[ing] that the mind shuns cognitively complex and difficult decision tasks by reconstructing them into easy ones”).

seeing what works and what does not.⁴² When we demand coherence, we may stifle choice. Coherent accounts of the law can become deterministic, helping to perpetuate the patterns they identify by obscuring and discouraging opportunities to depart from those identified patterns. If, for example, we identify torts in terms of optimal deterrence through utility-balancing,⁴³ we may lose sight of its corrective justice aspects.⁴⁴

Third, attempting to create coherence through internal logic in the law may well be ineffectual. Incoherence arises from a lack of consensus about how to approach a legal problem. As long as a consensus is lacking, lawmaking institutions are unlikely to be able to force coherence, but instead may merely push incoherence into other areas. For example, if substantive doctrine within a field were to favor an outcome on which there was not consensus, this would create pressure on other areas of legal doctrine, such as justiciability, procedure, and remedies, to counterbalance that effect in order to reflect the diversity of preferences as to the proper outcome.⁴⁵

The drawbacks of allowing some incoherence in a field, moreover, can easily be overstated. An inability to be reduced to a few fundamental principles “does not mean that [a field] lacks essential, or special, attributes worthy of study; nor does it mean that the field lacks an identifiable structure and architecture.”⁴⁶ Indeed, incoherence is itself worthy of study.

⁴² See RICHARD POSNER, *THE FEDERAL COURTS: CRISIS AND REFORM* 163 (1985) (asserting the benefits of allowing “diversity and competition” among federal circuit courts); Samuel Estreicher & Richard L. Revesz, *Nonacquiescence by Federal Administrative Agencies*, 98 *YALE L.J.* 679, 743 (1989) (noting that, when the Supreme Court grants certiorari to resolve a conflict among the federal circuits, it “benefit[s] from being able to observe the effects of the different legal regimes”); Richard A. Posner, *Will the Federal Courts of Appeals Survive Until 1984? An Essay on Delegation and Specialization of the Judicial Function*, 56 *S. CAL. L. REV.* 761, 785-86 (1983) (“If two circuits or two states are in conflict on a question, other circuits or other states benefit from the clash of views—the (literally) competing alternatives. The circuits as well as the states are laboratories for social, including judicial, experimentation . . .”).

⁴³ See *RESTATEMENT (SECOND) OF TORTS* §§ 291-295 (1965).

⁴⁴ See Catharine Pierce Wells, *Tort Law as Corrective Justice: A Pragmatic Justification for Jury Adjudication*, 88 *MICH. L. REV.* 2348 (1990).

⁴⁵ See Richard H. Fallon, *The Linkage Between Justiciability and Remedies - And Their Connections to Substantive Rights*, 92 *VA. L. REV.* 633 (2006).

⁴⁶ Ruger, *supra* note 20, at 627; see also Elhauge, *supra* note 1, at 367 (2006) (contending that a field of law does not require agreement about the contours, principles, or policy goals of the field); Hall, *supra* note 60, at 356 (“All the pieces do not need to fit into a tidy whole for [an area] to be regarded as a legitimate intellectual field, nor does [an area] have to be organized by theory or overarching principle.”); Ruger, *supra* note 20, at 627 (“To say that [a field] is messy is not the same as saying it is random; to say it is multifaceted and difficult to center on a parsimonious internal core is not the same as saying it defies all

Attempting to determine why the law treats apparently similar situations differently is an important endeavor toward understanding the law. It is only by grouping materials together in a field that incoherence becomes identifiable and susceptible to studied examination.⁴⁷

In sum, in order to function as a legal field, an area of law must exhibit some minimum degree of coherence that legitimates it as an object of particularized study.⁴⁸ But coherence has drawbacks and pitfalls as well as benefits. Accordingly, we should maintain ambivalence about prioritizing coherence in legal taxonomy, and should stay cognizant of what a classification conceals as well as what it reveals.

C. *Threshold Methodological Decisions*

Choosing an organizing framework for a legal field requires certain threshold methodological decisions.⁴⁹ We must define the field—that is, identify the scope of situations we want the field to encompass. We must choose those aspects of the field on which we want to focus. A field of law can be understood as arising through the interaction of four underlying constitutive dimensions: factual context, policy tradeoffs, values and interests, and legal doctrine. An organizational framework for a legal field can apply to any one or combination of these constitutive dimensions. Finally, we must decide whether to employ a descriptive or prescriptive organizational framework. How we resolve these threshold decisions depends in part on the characteristics of the field and in part on our own methodological inclination or objectives.

1. Defining the Field

Considering self-consciously how to think about an area of law as a legal field requires us first to define the category we want to encompass with our analysis. If we are going to set out to construct an organizational framework by which to analyze a legal field, we will need to start with some understanding of what we think falls within the category of situations that comprise that field. Defining the field thus differs from cohering the

abstraction and generalization.”); Silberman, *supra* note 11, at 1429 (arguing that “a ‘field’ is not necessarily in need of a ‘big think’ unifying theory”).

⁴⁷ See *id.* at 646-47 (noting that legal differences within a field facilitates comparative analysis).

⁴⁸ Silberman, *supra* note 11, at 1429 (arguing that an area of law “merits autonomous treatment” when it functions as “an interconnected whole”).

⁴⁹ Indeed, even if we did not make such decisions deliberately, adopting an organizational framework for a field implicitly would decide certain threshold questions.

field with an organizational framework, but it is the first step toward a framework.⁵⁰

The objective in delineating a legal category should be to find a definition that is “sufficiently tailored and determinate to provide a comprehensible description of the instances that fall within [the category].”⁵¹ A good definition should yield a coherent concept or concepts.⁵² Moreover, the concepts embodied in the definition must reflect the concepts that are analytically helpful in understanding the field.⁵³ Thus, the initial task of defining the field is inherently and inextricably intertwined with the subsequent task of constructing a common organizational framework with which to unify the field. Although we cannot begin our analysis without defining the field that will form the object of our analysis, as we analyze the field and come to understand it better, we may need to revisit our initial definition, excluding situations that were included or including situations that initially were excluded.⁵⁴

There are numerous different ways to define a legal field. A legal field can be defined on the basis of, among other things, a substantive topic (*e.g.*, environmental law, labor law, tort law); an aspect of the legal process (*e.g.*, statutory interpretation, civil procedure, criminal procedure, remedies); an institutional actor (*e.g.*, administrative law, federal courts); or a trans-substantive methodological approach (*e.g.*, law and economics, comparative law).

⁵⁰ One could classify the law into categories based solely on the definitions of the categories, without applying an organizational framework beyond the mere definitions. But such an approach would untether the categories from their function, and therefore their rationale. It is the organizational framework for each field that identifies the analytical significance of the field as a category, the rationale for the usefulness of the field as a classification.

⁵¹ Sherwin, *supra* note 12, at 110.

⁵² Daniel J. Solove, *Conceptualizing Privacy*, 90 CAL. L. REV. 1087, 1096, 1096 (2002) (“Most often, theorists assess a conception by determining whether it is coherent—that is, whether it is logical and consistent.”).

⁵³ The task of identifying the concepts that are analytically helpful in understanding the field is addressed *infra* in Part IC.

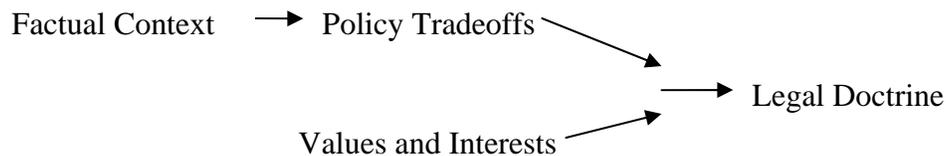
⁵⁴ *Cf.* Mark P. Gergen, *A Thoroughly Modern Theory of Restitution*, 84 TEX. L. REV. 173 (2005) (contending that to make restitution a coherent field, Peter Birks “had to lop off one of its most memorable parts—restitution to reward rescue—and do some conceptual legerdemain to include some of its most important parts, such as the right of a joint tortfeasor who satisfies a claim to contribution from another joint tortfeasor”) (citing PETER BIRKS, UNJUST ENRICHMENT 170-71 (2d ed. 2005)).

2. The Dimensions of the Field

After we initially define the field that is the object of our analysis, we must choose the aspects of the field on which we want to focus our analysis. In thinking about that choice, it is useful to conceptualize a legal field as the interaction among four underlying constitutive dimensions of the field: factual context, policy tradeoffs, values and interests, and legal doctrine.⁵⁵

Every area of the law operates within a *factual context*; a set of factual characteristics shared in common by situations that arise within the field.⁵⁶ These factual characteristics create certain *policy tradeoffs*, which dictate the range of options available to lawmaking institutions such as courts, legislatures, executive branch agencies, or the public. The lawmaking institutions apply *values and interests* to choose among the available options dictated by the tradeoffs. *Legal doctrine*—the law of the field—arises as the product of the lawmaking institutions’ choices among available options; that is, the application of values and interests to policy tradeoffs. The following figure illustrates the relationship among the underlying constitutive dimensions—factual context, policy tradeoffs, values and interests, and legal doctrine:

Figure 1: Conceptual Diagram of Generic Legal Field



⁵⁵ Some aspects of the conceptual model of legal fields developed in this Article do not apply well to those fields of law, such as law and economics, that are organized around trans-substantive methodological approaches. See *infra* note 90 and accompanying text.

⁵⁶ The extent to which this factual context is exogenous to the legal system varies considerably from field to field. Personal injuries and property damage exist regardless of law, and so the factual context of tort law is for the most part exogenous to the legal system. For other fields, the context is itself a creation of the law. Taxes, for example, cannot exist independently of the law, and so the factual context of tax law is to a considerable extent endogenous to the law. The factual context of fields such as remedies, civil procedure, and criminal procedure, moreover, are entirely endogenous to the law, in that the questions they address arise wholly within the law itself. See, e.g., Douglas Laycock, *How Remedies Became a Field: A History*, 27 REV. LITIG. 161, 164 (2008) (noting that the field of remedies addresses “the question of what to do about a completed or threatened violation of law”).

The relationship among the underlying constitutive dimensions of the law is not just unidirectional from factual context to legal doctrine; the relationship runs the opposite direction as well. Because the law remains the ultimate object of our analysis, we can limit our consideration of the constitutive dimensions of a legal field to those aspects of the dimensions that eventually bear on the form and content of legal rules.⁵⁷ Elements of factual context thus matter if, and only if, they ultimately bear on the values and interests that the decisionmaking institution applies to resolve questions within the area. A factual characteristic is only relevant or significant insofar it gives rise to a policy tradeoff that matters, and a tradeoff only matters if the decisionmaking institution cares about it. For example, a tradeoff between making water available for irrigating agriculture or for sustaining aquatic wildlife is significant only insofar as the decisionmaking institution cares to some extent about both agriculture and aquatic wildlife. Thus, in conceptualizing a field of law, legal taxonomy should care about factual characteristics only insofar as they affect legal doctrine, by creating policy tradeoffs that actually limit legal choice.⁵⁸

Because the interplay among the underlying constitutive dimensions produces law, an area of law can be characterized by any or all of its underlying dimensions. Indeed, the academic literature readily yields illustrations of analyses that characterize legal fields based on factual context,⁵⁹ policy tradeoffs,⁶⁰ values and interests,⁶¹ or legal doctrine.⁶²

⁵⁷ Cf. Sherwin, *supra* note 12, at 108 (“Any two factual settings are alike and unlike in an indefinite number of ways, and the only way to determine which similarities and differences should count is to refer to some purpose or principle that picks out certain of them as relevant to what is being decided.”).

⁵⁸ Cf. *infra* note 67 and accompanying text (arguing that the common features that cohere a field must be legally relevant).

⁵⁹ Cf. Feinman, *supra* note 14, at 679-81 (defining factual classification, for which “the factual similarities among the situations governed by the doctrines within the system provide both the organization and the defining criteria for the category”).

⁶⁰ Elhauge, *supra* note 1, at 366 (2006) (contending that fields require a “common intellectual framework” that “illuminate[s] . . . common themes.”); Mark A. Hall, *The History and Future of Health Care Law: An Essentialist View*, 41 WAKE FOREST L. REV. 347, 356 (2006) (contending that a “legal academic sub-discipline” requires “a core substantive focus for the field and a core set of methods of inquiry”); see also Larry Reibstein, *Leveling the Political Field*, THE LAW SCHOOL: THE MAGAZINE OF THE NEW YORK UNIVERSITY SCHOOL OF LAW, Autumn 2008, at 21 (quoting Richard Pildes, one of the founders of the field of law of democracy, describing the issues in the field as “shar[ing] a common core around the basic questions of [the field]”).

⁶¹ Ruger, *supra* note 20, at 635 (noting that fields can be analyzed by reference to recurring “primary interests,” such as the right to bodily autonomy in health law).

⁶² *Id.* at 629 (noting “the standard coherence impulse in the legal academy,” which “favors frames of analysis that are powerfully reductionist in character, and which purport to explain a vast array of legal materials with the use of one or a few core conceptual building

Thus, when we attempt to characterize an area of law, it may focus on just one of these dimensions, or on a combination of dimensions. The patterns that cohere an area of law as a legal field may arise within any of the dimensions. An ideal, complete analytical model of a legal field would identify interrelated patterns across all of the dimensions of the field. Depending on the features of the area of law, however, this ideal may not be possible. If there is not a stable mix of values and interests that operate in an area, there may not be a consistent set of policy tradeoffs that encompass decisionmaking. Or, even if a stable mix of values and interests (and therefore a consistent set of policy tradeoffs) exists, if those values and interests are not balanced consistently, the legal rules may not have enough consistency to yield coherent legal doctrine. In such situations, our account of an area of law necessarily may be limited to an incomplete model that addresses only those dimensions of the area that exhibit recognizable patterns. Depending on the objectives of our analysis, this limitation may be fatal to the project or insignificant, or something in between.

3. Descriptive versus Prescriptive Taxonomy

In constructing an organizational framework by which to characterize a legal field, we also must keep in mind whether we want to reflect the area of law from a descriptive (positive) perspective or a prescriptive (normative) perspective.⁶³ Descriptive taxonomy attempts to reflect an area of the law as it currently exists or traditionally has existed, whereas prescriptive taxonomy attempts to reflect how the taxonomer thinks the law in the area should exist. Descriptive taxonomy tends to favor classifications that are based on objective, observable characteristics. These characteristics may be self-identified or self-evident from the situations themselves, or the taxonomer or other analyst may assign the features to situations.⁶⁴ Prescriptive taxonomy tends to favor classifications that look more to the underlying functions ascribed to such characteristics. In other words, descriptive taxonomy attempts only to recognize patterns that already exist, whereas prescriptive taxonomy tries to create patterns and consistencies.

blocks”); Chaim Saiman, *Restating Restitution: A Case of Contemporary Common Law Conceptualism*, 52 VILL. L. REV. 487, 518 (2007) (noting that the classical scheme was based on the identification of a “central conceptual principle underlying each area of law”); see also Reibstein, *supra* note 60, at 21 (quoting Owen Fiss questioning whether the founders of the field of “law of democracy” have identified “and ‘autonomous set of principles’ governing election law that would properly constitute a law of democracy”).

⁶³ Cf. Sherwin, *supra* note 12, at 105-06 (noting that legal taxonomies can classify either posited legal rules, ideal legal rules, or “semi-ideal rules attributed to legal decisions”).

⁶⁴ Sherwin, *supra* note 12, at 105-06.

In reality, most legal taxonomies to some extent combine descriptive and prescriptive elements. Even a prescriptive taxonomy usually reflects to some extent the content of existing law, rather than a purely theoretical body of perfect law. And even where a taxonomy attempts to be descriptive, the very process of organizing an area of law based on some characteristics and not on others often involves a normative prioritization rather than a purely descriptive choice. Then once we have adopted an organizing framework, that framework inevitably affects how we approach problems that arise in the area. Indeed, because the purpose of taxonomy is to shape the way we understand that which is being classified, thereby affecting how we analyze and think about the area, there is inherently a prescriptive aspect to even the most purely descriptive taxonomy. For example, the conclusion that a particular situation has been misclassified—for example, as a tort rather than a contract dispute—often carries with it the consequential conclusion that the wrong rule or set of rules has been applied to the situation.⁶⁵ This is true to a greater extent than in the natural sciences, where the taxonomer is much more just an observer. In the law, the taxonomer is also, inherently, part of the project to shape the law as well as to observe and to characterize it.

D. Minimum Requirements

Taking into account the considerations we have addressed, we can turn now to identifying the characteristics that are required for an area of law to constitute a useful classification as a legal field. At a minimum, a legal field must exhibit two characteristics: commonality and distinctiveness. An organizational framework for a legal field therefore must focus on identifying a combination of features that, as a group, are common and distinctive to the field. To the extent that an organizational framework focuses on features that are not shared in common within the field and are not distinctive to the field, this calls into question the validity and usefulness of the organizational framework, and of the legal field itself as well.

1. Commonality

A field of law must exhibit some degree of commonality, a characteristic or set of characteristics shared in common by the situations that arise within the area of law the field encompasses. Commonalities

⁶⁵ See, e.g., *supra* note 17 (citing cases in which classification as a tort or contract makes a difference as to what legal rule applies).

establish patterns that cohere the field. These commonalities may arise within any of the different underlying constitutive dimensions of the field: the factual context, the policy tradeoffs, the values and interests, or the legal doctrine.⁶⁶

Moreover, not just any commonalities count. As to the first two dimensions—factual context and policy tradeoffs—the commonalities must be legally relevant; that is, they must make a difference in how the law applies.⁶⁷ It is only when the common characteristics are legally relevant that the materials they encompass appear as an identifiable corpus. Otherwise, an area of law appears to be merely an amorphous amalgamation of portions of other, existing fields. Indeed, an area of law unified only by factual commonality—that is, a common factual characteristic or characteristics that make no difference to the application of the law—is like the Law of the Horse,⁶⁸ a joke rather than a legitimate field of legal study, because the various laws that govern activities related to horses have nothing legally important in common; the common element of the horse is legally irrelevant.⁶⁹

The presumption that a legal concept must be defined by reference to a single definitional set of characteristics has been criticized.⁷⁰ These critiques, in turn, call into question whether strict commonality is necessary

⁶⁶ See *supra* Part I.C.2.

⁶⁷ See Feinman, *supra* note 14, at 678 (arguing that the factual characteristics that define a legal field should be “not arbitrary, but [should] reflect the analytical and instrumental aims of the process,” such as “principles, policies, or interests” common to the category); Hall, *supra* note 60, at 361 (arguing that the defining features of a field of law must be “central to the analysis or inquiry, rather than . . . simply being an incident of generic law’s subject matter”); Ibrahim & Smith, *supra* note 1, at 74 (contending that whether a factual attribute defines a legitimate field of legal study depends on whether the attribute is “a legally relevant fact.”); see also Silberman, *supra* note 11, at 1430 (arguing for the existence of international litigation as a field of law “because international and comparative perspectives shape and influence the development of rules”).

⁶⁸ See *supra* note 1.

⁶⁹ Usually the commonality is descriptive of existing law, rather than a purely normative prescription for how one thinks the law should be. One could imagine, however, an emerging field in which a theoretical superstructure precedes any common legal doctrine. The field of cyberlaw definitely required the existence of cyberspace, but could have preceded the creation of any law of cyberspace by anticipating such law and setting forth a normative framework for thinking about it. It is more difficult to imagine a legitimate field of existing law defined by reference to a normative framework that does not match, at least in significant part, extant legal doctrine. At the very least, such a circumstance would seem to require defining the field at a sufficient level of generality to encompass both the existing doctrine and the theoretical alternative.

⁷⁰ See, e.g., Stuart P. Green, *The Concept of White Collar Crime in Law and Legal Theory*, 8 BUFF. CRIM. L. REV. 1, 28-29 (2004), David Millon, *Objectivity and Democracy*, 67 N.Y.U. L. REV. 1, 18 n.54 (1992); J.E. Penner, *The “Bundle of Rights” Picture of Property*, 43 UCLA L. REV. 711, 779-99 (1996); Solove, *supra* note 52, at 1095, 1096.

for a legal field. Scholars advancing the critique have challenged the traditional assumption that legal concepts must be unified by a “core common denominator”—that is, a set of necessary and sufficient characteristics shared in common that “single out [the concept] as unique.”⁷¹ Drawing on the work of Ludwig Wittgenstein, these scholars argue that some legal concepts are unified instead by “a common pool of similar characteristics,” analogous to “‘family resemblances,’” that forms “‘a complicated network of similarities overlapping and criss-crossing’” that defines the concept.⁷² This argument suggests that there may be areas of the law that do not exhibit strict commonality as to all the features in the organizing framework, but nevertheless share enough commonality to cohere the area as a useful category and legal field.

2. Distinctiveness

However useful in some respects it may be to conceptualize the law in terms of fields or categories, there are dangers from becoming too comfortable living within categories. Taxonomy has the capacity to obscure as well as illuminate. One potential problem with dividing the law generally into discrete fields is that it may obscure larger principles that transcend the particular field.⁷³ Classifying the law into legal fields focuses attention on particular aspects of the law by obscuring other aspects. A framework for thinking about a field or category thus necessarily also keeps us from *not* thinking about the field—that is, from seeing commonalities across fields or categories.⁷⁴ For example, an overemphasis on classifying statutory laws into topic areas—environmental, labor, health care, tax, etcetera—may obscure the importance of trans-substantive tools of statutory interpretation that predominate over topic-specific interpretive methods. For a legal field to be legitimate, there must be a good reason to focus on the particular category; that is, some reason not to look to some broader set of materials.

Distinctiveness—the idea that some features of the field are distinct to the field, not present in other areas—provides just such a justification. Thus, an area of law unified by a common, legally relevant feature (pattern)

⁷¹ Solove, *supra* note 52, at 1096, 1095.

⁷² *Id.* at 1095-97; *see also* Solove, *supra* note 11, at 486.

⁷³ *See* Easterbrook, *supra* note 1, at 207.

⁷⁴ *Cf.* Dabney, *supra* note 37, at 235 (noting that employing a classification that needlessly separates cases from each other “has the potential at least to make the law less coherent” by obscuring characteristics that transcend categories in the classification).

is not a legal field unless the organizing feature is distinctive to the area.⁷⁵ Distinctiveness can arise directly from unique features of the field, or from the unique interplay of otherwise non-unique features.⁷⁶

Distinctiveness in legal doctrine may mean that the field is governed by unique legal rules that apply only within the field (*field exceptionalism*). Alternatively it may mean that, although unique rules do not govern the field, the application of general rules results in outcomes that are unique to the field, because the field provides a factually unique context that affects the application of particular rules, or because the field's context results in a unique interplay of rules.

The individual features comprising the organizational framework that coheres a field need not necessarily each be distinctive to the field. Rather, it is the defining features as a set that must be distinctive. There are, for example, some features that are common to both labor law and contract law—after all, the employer-employee relationship is fundamentally contractual—but that does not mean that they are not each legitimate legal fields.

Moreover, distinctiveness does not necessarily equate with uniqueness. Just as scholars have argued persuasively that strict commonality may be unnecessary,⁷⁷ strict uniqueness also may be unnecessary. A legal field may exist where the field's set of defining

⁷⁵ Although they have articulated the criterion in different ways, several scholars have identified some form of distinctiveness as a requirement for a legitimate legal field. See Carter, *supra* note 94, at 244 (contending that “a field becomes a field” when “concepts and legal norms [arise] that will prevail uniquely in that context” and the field thereby receives “some special treatment . . . in the law”); Elhauge, *supra* note 1, at 369 (“[D]oes the purported field address the legal treatment of a distinct set of relations?”); Hall, *supra* note 60, at 357-58 (“For a body of substantive law to emerge as a distinctive field of intellectual inquiry, it must be more than just an assortment of rules that results from applying other bodies of substantive law to a particular economic sector or human activity. Such a field is not intellectually distinctive unless there are one or more attributes of the economic or social enterprise in question that make it uniquely important or difficult in the legal domain.”); Peter W. Hohenhaus, *An Introductory Perspective on Computer Law: Is It, Should It Be, and How Do We Best Develop It as, a Separate Discipline?*, 1991 WL 330761 (April, 1991) (“The subject matter of the proposed discipline and its legal ramifications should not comfortably or effectively fit within existing legal frameworks.”); Ibrahim & Smith, *supra* note 1, at 76 (“[A] new field of legal study is justified when a discrete factual setting generates the need for distinctive legal solutions. This distinctiveness may manifest itself in the creation of a unique set of legal rules or legal practices, in the unique expression or interaction of more generally applicable legal rules, or in unique insights about law.”).

⁷⁶ See Ibrahim & Smith, *supra* note 1, at 85.

⁷⁷ See *supra* notes 70-72 and accompanying text.

features are unified by sufficient similarity and distinctiveness—even if not perfect uniqueness—to merit unified consideration.⁷⁸

E. Additional Attribute: Transcendence

In addition to commonality and distinctiveness, Frank Easterbrook has argued that fields of legal study also should have trans-substantive implications—that is, that legal fields should “illuminate the entire law” and teach “general rules.”⁷⁹ Easterbrook expressed this position specifically as an objection to the existence of cyberlaw as a legal field.⁸⁰ In response to Easterbrook’s argument, Lawrence Lessig defended the study of cyberlaw as a legal field by arguing that the application of law to cyberspace has yielded insights that are both distinctive and transcendent.⁸¹ On the one hand, the distinctive features of cyberspace as a context for the application of law yield unique insights: “We see something when we think about the regulation of cyberspace that other areas would not show us.”⁸² On the other hand, these insights are not limited to cyberlaw: they illustrate “general concerns, not particular” and illuminate “lessons for law generally.”⁸³ Together, Lessig argues, this combination of distinctiveness and transcendence “suggest[s] a reason to study cyberspace law for reasons beyond the particulars of cyberspace.”⁸⁴ Easterbrook’s and Lessig’s comments on the benefits of transcendence highlight an additional, potentially important characteristic of a legal field: a transcendence that justifies studying the field in order to understand better the law in general.⁸⁵

⁷⁸ Cf. Feinman, *supra* note 14, at 699 (“The elements of different paradigms overlap, but there is considerable redundancy among the elements of a particular paradigm; that is, most of the elements of a paradigm are more highly correlated with elements of the same paradigm than with elements of other paradigms.”).

⁷⁹ Easterbrook, *supra* note 1, at 207. Although Easterbrook expresses a preference for principles that apply to “the entire law,” perhaps stemming from his allegiance to a trans-substantive law and economics framework, he seems to recognize that at least some of the general or unifying principles he seeks to illuminate may apply only in certain categories of cases. See, e.g., *id.* at 208 (noting “broader rules about commercial endeavors”). His inclination, however, is clearly toward drawing the most expansive categories possible.

⁸⁰ E.g., Easterbrook, *supra* note 1, at 208 (arguing that, instead of developing a law of cyberspace, we should “[d]evelop a sound law of intellectual property, then *apply* it to computer networks”).

⁸¹ Lessig, *supra* note 1, at 502-03.

⁸² *Id.* at 502.

⁸³ *Id.* at 503; see also *id.* (field should “suggest a reason to study [the field] for reasons beyond the particulars of [the field]”).

⁸⁴ *Id.* at 503.

⁸⁵ See also Paul L. Caron, *Tax Myopia, Or Mamas Don't Let Your Babies Grow Up To Be Tax Lawyers*, 13 VA. TAX REV. 517, 541 (1994) (praising academic authors who “undertake tax-specific work that generates insights into the process of statutory

After we have identified distinctiveness as a requisite for the validity of a legal field, it may seem odd to look for transcendence. Distinctiveness and transcendence may seem mutually exclusive, or at least oppositional, but in fact their relationship is more complicated. The distinctiveness of the field, some special combination of factors, may be what causes the field to illuminate transcendent insights. Observing how the presence of a factual characteristic that is unique to the field affects the development of legal doctrine within the field may offer important insights into how the absence of the factual characteristic in other fields affects the development of legal doctrine in those fields.

For example, there are many similarities between the factual context of occupational safety and health law and environmental law. In many cases, both areas are concerned with the same types of health hazards posed by the same types of substances.⁸⁶ A crucial difference, however, is the important role of the employer-employee contractual relationship in occupational safety and health law, a factual element for which there is no analog in most environmental law cases. Analyzing how the employer-employee contractual relationship affects occupational safety and health law may well yield insights into how the absence of an analogous contractual relationship between polluters and the public affects, or should affect, the content of environmental law.

Unlike commonality and distinctiveness, transcendence is not required to legitimate a field of legal study.⁸⁷ If, for example, studying environmental law helps us to understand environmental law, that suffices to justify the study of environmental law, even if studying environmental law does not also help us to understand law that is not environmental.⁸⁸ Regardless whether the transcendence criterion is necessary, however, it is clearly an additional benefit that enhances the value of studying the field.⁸⁹

construction generally”) (citing Lawrence Zelenak, *Thinking About Nonliteral Interpretations of the Internal Revenue Code*, 64 N.C. L. REV. 623, 626-27 (1986), and Michael Livingston, *Congress, the Courts, and the Code: Legislative History and the Interpretation of Tax Statutes*, 69 TEX. L. REV. 819 (1991)).

⁸⁶ See, e.g., 29 C.F.R. § 1910.1000 (regulating occupational exposure to mercury in air); 40 C.F.R. Part 61 Subpart E (regulating environmental emissions of mercury into air).

⁸⁷ See Greely, *supra* note 1, at 405-06 (“[M]any time-honored law school subjects and legal fields are . . . courses and fields about the law as it is applied in specific settings, not about generalized law . . . [A]lthough health law provides some insights that may be useful in other areas of the law, . . . that is not crucial to its importance.”).

⁸⁸ Indeed, Lessig accepts Easterbrook’s challenge to satisfy his transcendence test without conceding that cyberspace must satisfy the test to achieve legitimacy.

⁸⁹ Jay Feinman has expressed concern that the pursuit of transcendence may succeed too well, yielding “a metaprinciple that threatens to dissipate [the particular field’s] integrity as an independent subject and render it a mere application of some transcendent method of analysis.” Feinman, *supra* note 14, at 671. Feinman’s point is analogous to the

F. Caveats and Clarifications

Having thus proposed an approach to the characterization of a legal field through the development of an organizational framework, several caveats and clarifications are in order.

First, the approach set forth in this Article intentionally focuses on the substance of the law, rather than on the processes that produce and apply substantive law. Most conspicuously, I have omitted any attempt to address questions of which institutions and regulatory tools are employed or should be employed in making and implementing law, or even to analyze how choices among institutions and regulatory tools affect the substance of the law. For example, there may be systematic differences among the content of legal rules produced through common law adjudication, legal rules enacted by legislatures, and legal rules promulgated by administrative agencies. Such questions are undoubtedly of fundamental importance, and by excluding them I do not mean to suggest that they can be ignored. Indeed, they cannot be completely severed from questions about the substance of the law. It nevertheless is both possible and helpful, however, sometimes to think about substantive law separate from these considerations. A substantive framework, in turn, can provide a means of evaluating alternative institutional arrangements and regulatory tools.

Second, some aspects of the conceptual model of legal fields developed in this Part do not apply well to fields of law, such as law and economics, that are organized around trans-substantive methodological approaches.⁹⁰ Such methodological fields have no distinctive corpus of law, and therefore also none of the underlying constitutive dimensions we have identified here. As a result, methodological fields cannot be unified by an organizational framework based upon patterns in the underlying constitutive dimensions of a particular area of law. Instead, methodological fields are unified by a common yet distinctive methodological approach to analyzing legal situations generally. The trans-substantive methodology that defines the field also provides the organizational framework that coheres it. The methodology, and not underlying constitutive dimensions, must exhibit the minimum characteristics of commonality and distinctiveness. By virtue of their trans-substantiveness, methodological fields also necessarily exhibit transcendence. Methodological fields differ

aforementioned concern that that excessive pursuit of coherence may lead analyses to overlook meaningful variations in the law. *See supra* notes 35-41 and accompanying text.

⁹⁰ *See supra* text following note 54 (noting that legal fields can be organized on the basis of, among other things, a substantive topic, an aspect of the legal process, an institutional actor, or a trans-substantive methodological approach (*e.g.*, law and economics, comparative law)).

analytically in these ways from other types of legal fields, and do not present the same organizational challenges to coherence that arise within other fields. On the other hand, methodological fields may raise other organizational challenges, such as determining what specific methodologies fall within a particular methodological field.

Third, the usefulness of a field—its power to explain a set of situations—does not depend merely on whether it meets minimum standards of commonality and distinctiveness. Even among fields that exhibit commonality and distinctiveness, there still may be tremendous variation in the strength of organization of the field, as measured by the explanatory power of the field's organizational framework. We have seen above that a framework's explanatory power depends on several factors, including the extent to which the pattern predominates within the field.⁹¹ Now we have added the additional observation that a field's organizational framework must focus on the field's common and distinctive features. Integrating these two ideas yields the proposition that a framework's explanatory power depends in part on the extent to which common and distinctive features (which are part of the framework) predominate within the field over other features (which are not part of the framework). In other words, of the situations that arise within the field, to what extent are those situations captured by the organizing features of the field, as opposed to other features of the individual case that are either not shared in common in the field or not distinctive to the field? The more that the common and distinctive features predominate, the more coherent the field, and the more powerful the framework that defines the field in terms of those features will be as a tool for understanding the corpus of law encompassed by the field.

Fourth, for any particular field, there may be multiple alternative frameworks that organize the field in a useful way. Frameworks can focus on different dimensions of a field, or on combinations of dimensions. Frameworks can be articulated at varying degrees of generality or abstraction. In some cases, one framework may be clearly superior to another in its ability to explain a field. In other cases, however, one analytical framework will be more useful for some analyses, and another will prove more useful for other tasks.⁹²

Fifth, although an area of law must exhibit commonality and distinctiveness to be a legal field, in some cases there may be benefits to other categorizations of the law that do not meet these requirements. Even some legal areas organized only on the basis of factual commonality may still have some utility for some purposes. Law firms, for example, may

⁹¹ See *supra* text following note 15.

⁹² See Mattei, *supra* note 11, at 8 (“[N]o taxonomy can claim universality by serving every . . . purpose better than every alternative one.”).

form practice groups to market themselves to a particular industry—for example, a chemical practice group staffed with lawyers familiar with technical aspects and legal requirements of the chemical industry.⁹³ Law schools may teach classes addressing subject matters that attract particularly strong student interest and use the course to illustrate cross-cutting legal issues, rather than to study the subject matter as a distinct corpus of law.⁹⁴ Such classifications may be useful for their limited purposes despite the lack of a distinctive and coherent body of law required for a true legal field.

As Douglas Laycock's history of remedies as a legal field⁹⁵ suggests, the organization and specialization of legal practice influences the development and recognition of legal fields. Where lawyers do not organize themselves or specialize in terms of a particular category, this creates a substantial impediment to the development of that category as a legal field, even if the category has all the attributes of a legitimate field. Laycock makes this point with respect to the field of remedies: because practitioners do not specialize in remedies, it fell entirely on legal academics to develop the field.⁹⁶ Where, on the other hand, lawyers organize their practice by reference to a category, this highlights the category as a potential field, and also creates a demand for other correlates of a legal field, such as practice materials, conferences, academic research, and law school courses. Together, these factors are likely to spur development and recognition of the category as a legal field.

Sixth, although the construction of a legal field may sound like a rather orderly and logically rigorous process in which the scope of a legal field and its internal organizing features appear clear, distinct, and well-defined, the law often is not so simple. Any particular situation may implicate and benefit from multiple conceptual frameworks, whether because the situation can helpfully be considered as arising within multiple different fields, or because even within a particular field the situation can helpfully be considered from multiple different organizing frameworks, or both.⁹⁷ This complexity is not necessarily a problem; each of the various

⁹³ See, e.g., <http://www.cojk.com/ourpractice/chemicalprocesspatents.html>; <http://www.mhmlaw.com/brochure/chemical.pdf>.

⁹⁴ See W. Burlette Carter, *Introduction: What Makes a "Field" a Field?*, 1 VA. J. SPORTS & L. 235 (1999) (advocating "the need for a law school curriculum that provides opportunities for integration" of multiple legal fields and identifying sports law as a "bridge course" that could help meet this need).

⁹⁵ See Laycock, *supra* note 56, at 167-68.

⁹⁶ See *id.*

⁹⁷ Some private law theorists have posited that, under a proper taxonomic system, legal categories can be arranged in a hierarchy whereby categories at the same level of generality do not overlap. See, e.g., Peter Birks, *Unjust Enrichment and Wrongful Enrichment*, 79 TEX. L. REV. 1767, 1781 (2001) ("The test of the validity of a taxonomy is precisely the

organizing frameworks emphasizes particular angles and insights into the situation. That being said, to the extent that a situation arises within multiple different fields, each of which may prescribe a different set of legal rules, or at least different understandings of what the situation entails, field overlap does present a challenge. For example, when the federal government brings suit against the parent corporation of a defunct chemical company for the costs of cleaning up industrial waste generated by the defunct company's chemical plant, should the issue be viewed primarily as a question of environmental law, which would tend to emphasize broad liability to accomplish the cleanup of environmental contamination, or corporate law, which would emphasize the limited liability of a parent corporation for the actions of its subsidiaries?⁹⁸ Such situations of overlapping fields "present problems for a system of doctrinal classification at the same that they offer particularly sharp examples for the delineation of the processes of doctrinal classification."⁹⁹

II. WHY IS ENVIRONMENTAL LAW A LEGAL FIELD?

Having addressed in Part I how we might think generally about a field of law, Part II focuses on environmental law as a legal field. We begin by examining two noteworthy prior efforts to cohere environmental law as a legal field. I argue that neither of these works satisfactorily conceptualizes environmental law as a legal field; both offer an incomplete account of the field that is tied too closely with environmentalism. The remainder of Part II develops my proposed framework for understanding environmental law. My framework identifies two fundamental common and distinct factual characteristics of environmental problems: physical public resources and pervasive interrelatedness. Because of the multiplicity of uses that are made of environmental resources and the pervasive interrelatedness among these uses, conflicts among uses arise and are exceedingly difficult to manage. These use conflicts define the policy tradeoffs that frame environmental lawmaking, forming the basis for a use-conflict framework for conceptualizing environmental lawmaking.

question of whether any item within its purview can appear in more than one category purportedly pitched at the same level of generality."); *see also* Feinman, *supra* note 14, at 664 ("Every categorization implies a choice between categories, a decision that the case belongs in one place rather than another."). However ill- or well-advised such a rule in the private law context, *see* Sherwin, *supra* note 12, at 123 (expressing "doubt" about Birks' position), for public law, such a rule seems demonstrably wrong.

⁹⁸ *See* United States v. Bestfoods, 524 U.S. 51 (1998).

⁹⁹ Feinman, *supra* note 14, at 668.

A. Critique of Prior Approaches

This Section examines and critiques two important prior efforts to explain environmental law as a coherent legal field: Dan Tarlock's 2004 article, *Is There a There There in Environmental Law?*,¹⁰⁰ and David Westbrook's 1994 article, *Liberal Environmental Jurisprudence*.¹⁰¹ Both articles offer interesting insights into environmental law, for which they are often cited in environmental law scholarship.¹⁰² In the end, however, despite these contributions, neither Tarlock nor Westbrook achieves his ultimate objective of explicating a conceptually unified environmental law.

1. Dan Tarlock's Environmental Conceptualism

Dan Tarlock's 2004 article, *Is There a There There in Environmental Law?*,¹⁰³ is probably the foremost extant work addressing the question whether, and why, environmental law is a legal field by attempting to develop a set of principles for environmental law. For Tarlock, an august figure in environmental law scholarship, the project has very real practical significance. Although Tarlock acknowledges that "environmental law is very much embedded in the legal landscape," and that "[t]he legal profession never harbored any doubts about the legitimacy of environmental law," he nevertheless frets over "three related but disturbing features of environmental law that make its future survival problematic".¹⁰⁴

First, it is, in the span of legal time, an infant area of the law that may not necessarily live to maturity. Second, its survival is more problematic than other areas of law because it is not an organic mutation of the common law, or more generally,

¹⁰⁰ Tarlock, *supra* note 10.

¹⁰¹ See Westbrook, *supra* note 5.

¹⁰² For examples of works excerpting or citing Tarlock's article, see, e.g., DANIEL A. FARBER ET AL., CASES AND MATERIALS ON ENVIRONMENTAL LAW 4-8 (7th ed. 2006); ROBERT V. PERCIVAL ET AL., ENVIRONMENTAL REGULATION: LAW, SCIENCE, AND POLICY 62-63 (5th ed. 2006); Daniel A. Farber, *Foreword*, 32 ECOLOGY L.Q. 383, 388 (2005). For examples of works citing Westbrook's article, see, e.g., David M. Driesen, *The Societal Cost of Environmental Regulation: Beyond Administrative Cost-Benefit Analysis*, 24 ECOLOGY L.Q. 545, 553 n.21 (1997); Douglas A. Kysar, *The Consultants' Republic*, 121 HARV. L. REV. 2041, 2058 n.41 (2008); Albert C. Lin, *The Unifying Role of Harm in Environmental Law*, 2006 WIS. L. REV. 897, 908 n.63; Eric W. Orts & Paula C. Murray, *Environmental Disclosure and Evidentiary Privilege*, 1997 U. ILL. L. REV. 1, 69 n.210 (1997).

¹⁰³ Tarlock, *supra* note 10.

¹⁰⁴ *Id.* at 215, 216, 217.

the western legal tradition. Third, as a result of the first two, environmental law remains largely unintegrated into our legal system; thus, it is vulnerable to marginalization as support for environmentalism ebbs and flows.¹⁰⁵

Tarlock views environmentalism as “a potentially transformative . . . paradigm shift” in our culture that will be in danger unless and until it becomes embedded in “a stable legal regime to reflect this meta-value transition.”¹⁰⁶ The construction of such a stable legal regime, he believes, would make environmental law “real law.”¹⁰⁷ For Tarlock, “areas of ‘real law’” require “a set of distinctive, fundamental principles . . . that can be applied to a wide range of current and future issues.”¹⁰⁸ These principles would insulate environmental law from political whims, providing “legal drag on the amplitude of the political oscillations” and enabling environmental law to achieve “permanence and acceptance.”¹⁰⁹ Without such principles, environmental law faces the possibility of “total assimilation and marginalization” in the law generally.¹¹⁰

In order to meet this perceived need, Tarlock proposes five “candidate principles” of environmental law:

- A. Minimize Uncertainty Before and As You Act
- B. Environmental Degradation Should Be A Last Resort After All Reasonable, Feasible Alternatives Have Been Exhausted
- C. Risk Can be a Legitimate Interim Basis for Prohibition of An Activity
- D. Polluters Must Continually Upgrade Waste Reduction and Processing Technology

¹⁰⁵ *Id.* at 217.

¹⁰⁶ *Id.* at 218, 219. Tarlock offers labor law as an example of a field that has ossified. Labor law “was once a new and dynamic area of the law, but now suffers from a combination of legislative and judicial hostility.” *Id.* at 226.

¹⁰⁷ *Id.* at 221.

¹⁰⁸ *Id.* at 218; *see also id.* at 228 (“One of the primary characteristics of a distinct area of law is that it contains a relatively unique set of core principles distinguishing it from other areas of law.”); *id.* at 222-23 (arguing that environmental law compares unfavorably to iconic fields such as contract, tort, property, and criminal law that exhibit “a pre-existing set of widely accepted legal doctrines”).

¹⁰⁹ *Id.* at 220, 222.

¹¹⁰ *Id.* at 230.

E. Environmental Decisionmaking Should Be Inclusive Rather Than Exclusive within the Limits of Rationality¹¹¹

He envisions these principles as “rebuttable presumptions” to structure environmental decisionmaking processes, rather than “hard” substantive rules.¹¹² This is necessary because “the science-based nature of environmental law precludes the definition of hard rules and pushes the law toward process rather than consistent outcome.”¹¹³

2. David Westbrook’s Liberal Environmental Jurisprudence

Like Tarlock, David Westbrook’s 1994 article, *Liberal Environmental Jurisprudence*,¹¹⁴ also sets out to organize environmental law into “a coherent whole” and thereby to establish environmental law as a legitimate discipline.¹¹⁵ Westbrook posits that environmental law can be understood as a struggle to protect environmental values, which transcend individual human welfare, within a liberal legal system that responds only to impacts on individual humans.¹¹⁶

In support of his thesis, Westbrook classifies environmental law into three stages, which together “form an idealized history that conceptually organizes the materials of environmental law.”¹¹⁷ In the first stage, archaic environmental law attempted to address environmental damage through common law tort.¹¹⁸ Archaic environmental law conceptualizes environmental harms as infringements on individual rights and seeks to redress those infringements through traditional common law mechanisms.¹¹⁹ The second stage, classical environmental law, addresses environmental problems through bureaucratic regulation.¹²⁰ Classical environmental law strives for the ideal of an efficient market.¹²¹ It views environmental problems as market failures, and intervenes in markets with regulation intended to internalize the costs of environmental damage.¹²² The third stage, modern environmental law, addresses environmental

¹¹¹ *Id.* at 249-53.

¹¹² *Id.* at 220.

¹¹³ *Id.* at 240.

¹¹⁴ See Westbrook, *supra* note 5.

¹¹⁵ *Id.* at 621.

¹¹⁶ *Id.* at 622-23 & n.3.

¹¹⁷ *Id.* at 622.

¹¹⁸ *Id.* at 631-47.

¹¹⁹ *Id.* at 680.

¹²⁰ *Id.* at 647-62.

¹²¹ *Id.* at 662, 681.

¹²² *Id.* at 652, 661.

problems by attempting to construct markets.¹²³ Market incentives, both positive (entitlements) or negative (taxes), allow market behavior to achieve environmental objectives.¹²⁴

The problem with each of these stages, as Westbrook sees it, is that they attempt to use a liberal legal system, premised on the protection of personal autonomy, to vindicate environmental values that do not translate well into a liberal framework because they are not limited to protecting personal autonomy.¹²⁵ Thus, “[e]nvironmental law can be understood as a series of attempts to phrase concern for the context of human life in a political philosophy grounded on individual choice.”¹²⁶ Because these attempts inevitably will fail, environmental law will be complete only when it steps outside of the liberal framework and embraces the value of nature *qua* nature.¹²⁷

3. Critique

Both Tarlock’s and Westbrook’s observations about environmental law are well taken. Anyone familiar with environmental law will recognize in Tarlock’s five candidate principles some of the recurring issues in the field.¹²⁸ And Westbrook’s account of environmental law offers important

¹²³ *Id.* at 663-80.

¹²⁴ *Id.* at 667.

¹²⁵ *Id.* at 692. Westbrook is not the first scholar, of course, to note the difficulty of protecting environmental values within a legal, social, and economic system that focuses overwhelmingly on individual human welfare. *See, e.g.*, Frank B. Cross, *Natural Resource Damage Valuation*, 42 VAND. L. REV. 269, 295-96 (1989) (“As long as government is making the legal rules and as long as only humans vote, the concerns of nature never will be reflected directly in our nation’s governmental policy. Most environmental laws enacted to date focus on protecting people’s interest in the natural environment.”). On the other hand, the “the pervasive connections between human welfare and the surrounding environment,” Daniel A. Farber, *A Place-Based Theory of Standing*, 55 UCLA L. REV. 1505, 1549 (2008), mean that almost every environmental impact affects human welfare in some way. *See* Zygmunt J.B. Plater, *The Three Economies: An Essay in Honor of Joseph Sax*, 25 ECOLOGY L.Q. 411, 433 (1998) (“Some marketplace externalities may only affect natural systems, with no human consequences, but many others pass through the environment into the human welfare context of civic-societal economics.”).

¹²⁶ *Id.* at 708; *see also id.* at 695 (“Environmental law can be understood as a succession of attempts to square the circle and phrase claims of the external environment within the internal logic of liberalism.”); *id.* at 701 (“The emergence of illiberal values, such as a substantive value in nature, within the context of liberal law is thus incessantly problematic.”).

¹²⁷ *Id.* at 709, 711.

¹²⁸ For example, a recent major Supreme Court environmental case, *Environmental Defense v. Duke Energy Corp.*, 549 U.S. 561 (2007), involved a dispute between federal regulators and the owner of a coal-fired electricity generating plant over whether modifications the

insights into some of the difficulties faced in making environmental law through systems, institutions, and processes that are in many ways ill-suited to a full consideration of the natural environment. But, in my assessment, neither Tarlock nor Westbrook ultimately meet their goal of cohering environmental law as a legal field.

Both Tarlock and Westbrook focus on conceptualizing environmental law by reference to environmentalist ideals. Although environmentalism obviously plays an important role in environmental lawmaking, the centrality of environmentalism to Tarlock's and Westbrook's frameworks is to their arguments' detriment in at least two respects.

First, to the extent that Tarlock and Westbrook intend their accounts to describe environmental law as it exists,¹²⁹ rather than some normative ideal, their focus on environmentalism renders their characterization of environmental law incomplete. Environmentalism does not predominate in current environmental law, and there is little prospect of that changing significantly in the future. Instead, environmental law reflects a balance among a variety of competing values and interests, which include environmentalism but also other, arguably more powerful, values such as maintaining traditional patterns of resource exploitation and resistance to government regulation.¹³⁰ Indeed, even Tarlock's principles, which he proposes as tools for advancing environmentalism, acknowledge at least implicitly that environmentalism has to be balanced against other values and interests.¹³¹ It is that balance among competing demands on

owner made at the plant rendered the plant a new or modified source that, under the Clean Air Act, is required to adopt more stringent pollution control technology. *Duke Energy* is a clear example of a case implicating Tarlock's fourth principle, which holds that polluters must continually upgrade waste reduction and processing technology. Tarlock, *supra* note 10, at 252.

¹²⁹ Tarlock is unclear about whether his principles are primarily descriptive or prescriptive. See Tarlock, *supra* note 10, at 249 (describing his candidate principles as "a mix of how environmental law has evolved and how it should evolve"). Westbrook adopts a largely descriptive framework, which he employs at the end of his article to make prescriptive arguments. See Westbrook, *supra* note 5, at 621 (identifying his goal of organizing "the basic materials of environmental law"—"the key statutes, cases, and articles that every environmental lawyers knows and every casebook contains"—"into a coherent whole"); *id.* at 711 (arguing in favor of "[a] vision of nature adequate to inform environmental jurisprudence" that would "transform politics").

¹³⁰ See *infra* text accompanying note 158.

¹³¹ Thus, Tarlock's first principle posits that environmental law should minimize uncertainty before actions are taken, Tarlock, *supra* note 10, at 249—but also acknowledges that decisions must be made despite lingering uncertainty, see *id.* at 249 (acknowledging that some information will be acquired "as you act," after an initial decision has been made). Tarlock's second principle advocates avoiding environmental degradation, *id.* at 250—but he acknowledges that "a general non-degradation standard . . .

environmental resources, more than anything, that defines environmental decisionmaking. Moreover, this balance is a central, inherent, and internal part of environmental law itself, not, as both Tarlock and Westbrook seem to assume, an external threat to environmental law. By relegating these countervailing considerations to an ancillary role in their frameworks, and failing to address how to balance among competing considerations, Tarlock's and Westbrook's accounts of environmental law lose much of their potential descriptive and prescriptive efficacy.

Second, Tarlock's and Westbrook's invocations of environmentalism oversimplify the variety of values and interests that can be associated with environmental protection. Environmental protection means different specific things in different situations and to different people; in any given scenario, a diverse range of values and interests may claim to fall under the general category of environmental protection: tourism, recreation, wildlife habitat, sustainable resource extraction, absolute preservation, and a host of others. Various combinations of these values and interests may be relevant to a particular environmental decision. These values and interests may conflict. Environmental protection thus is not monolithic. By employing the broad category of environmental protection to animate their characterization of environmental law, Tarlock and Westbrook obscure many of the most vexing tradeoffs facing environmental decisionmakers.

In addition to tying their frameworks for unifying environmental law too closely to environmentalism, Tarlock and Westbrook also are conceptually underinclusive. Tarlock confines his search for a conceptual core of environmental law to the content of legal doctrine, not to any of the other dimensions of environmental law: factual context, policy tradeoffs, and values and interests.¹³² This probably stems in part from Tarlock's practical objective of promoting environmental protection through the application of environmental law;¹³³ to a large extent, Tarlock cares only

is not possible" and that degradation should be allowed "if there are no acceptable alternatives," *id.* Tarlock's third principle asserts that government can regulate substances or activities based on a risk of an adverse impact, without proving that the impact will definitely occur—but only if the government can justify the regulation. *Id.* at 251-52. Tarlock's fourth principle provides that environmental law should continuously advance technology—but a source that recently upgraded to the prior best available technology, at great expense, must be exempted, at least temporarily, from further upgrades. *Id.* at 252. Tarlock's fifth and final principle advocates making decisions inclusive—except when doing so exceeds the limits of rationality. *Id.* at 253.

¹³² See *supra* Part I.C.2.

¹³³ See, e.g., *id.* at 228 (expressing concern that environmental law "will lose power in the judicial and political arena"); *id.* at 254 (expressing his hope that environmental law will "evolve into a permanent check on the full range of resource consumption decisions").

about whether environmental law accomplishes environmental protection, and therefore only about the content of environmental law doctrine. To the extent there is coherence in environmental law outside of environmental law doctrine, Tarlock may simply not care, at least for the purposes of his article.

On the other hand, Tarlock does repeatedly invoke the idea that environmental law can or must be reduced to “a set of distinctive, fundamental principles”¹³⁴ if it is to be a legitimate legal field or “real law.”¹³⁵ In this respect, he seems to accept the conceptualist assumption that a legal field can only exhibit coherence to the extent it can be reduced to a few fundamental principles. Such an approach neglects coherence arising from other dimensions of a field. Moreover, whatever the merits of conceptualism¹³⁶ as an approach in other legal fields,¹³⁷ it seems poorly matched to environmental law. As Tarlock’s candidate principles themselves reflect by their failure to address the tradeoffs they implicate, environmental law lacks the level of internal logic and consistency in its legal doctrine that would be necessary to yield conceptualist principles.¹³⁸ The context of environmental law is too nuanced to yield simple principles. This does not mean, however, as Tarlock seems to think, that environmental law lacks a conceptual core or is not a legal field.¹³⁹

Nor does Westbrook’s “limits of liberalism” theory accomplish his goal of organizing the entirety of environmental law into “a coherent whole.” Merely valuing nature qua nature would not, as Westbrook asserts, render environmental law “substantively complete,”¹⁴⁰ because the challenges of environmental law are not limited to value-balancing. To the contrary, the distinctive features of environmental resources, and in particular the complex web of pervasive interrelationships among uses of those resources, make it extremely difficult to manage the environment,

¹³⁴ *Id.* at 218.

¹³⁵ *Id.* at 218, 221, 222-23, 228.

¹³⁶ “‘Conceptualism’ describes legal theories that place a high value on the creation (or discovery) of a few fundamental principles and concepts at the heart of a system” Thomas C. Grey, *Langdell’s Orthodoxy*, 45 U. PITT. L. REV. 1, 9-10 (1983).

¹³⁷ *Cf. supra* Part I.B.

¹³⁸ *See infra* Part II.F.

¹³⁹ It is interesting that Tarlock identifies, as a conceptual “model” for environmental law, areas of natural resource law that exhibit coherence based on “the special physical characteristics of a resource and the social dynamics that shaped the conflicts over the use of it.” Tarlock, *supra* note 10, at 230. To my mind, Tarlock’s subsequent analysis of environmental law in his article does not particularly reflect this conceptual model. The approach to environmental law that I propose in this Article, however, strongly resembles this conceptual model. *See infra* Part II.C-F.

¹⁴⁰ *Id.* at 711.

regardless of what mix of values we are trying to vindicate.¹⁴¹ Thus, not nearly every problem of environmental law derives from value-balancing, let alone from the particular difficulties that arise from the limitations of liberalism.

Even as to the specific focus of Westbrook's framework, the inability of liberalism to vindicate environmental values, his account is incomplete. According to Westbrook, the fundamental failing of liberalism as applied to environmental problems is that liberalism's focus on protecting personal autonomy prevents it from valuing the environment, because many environmental values cannot be analyzed in terms of personal autonomy.¹⁴² But environmentalism is not the only challenge to liberalism's reliance on personal autonomy. A liberal legal framework premised on personal autonomy arguably fails in virtually every context, because personal autonomy is not a fact but a social construct that ignores numerous social interdependencies.¹⁴³ These interdependencies include, but are not limited to, environmental interdependence. As such, Westbrook's account fails to justify environmental law as a distinct legal field, instead of just another set of instances in which interdependence exposes the fallacy of personal autonomy on which liberalism is based.

Thus, neither Tarlock nor Westbrook achieves his objective of finding an organizational framework to cohere environmental law as a distinctive legal field. I have been critical of both Tarlock's and Westbrook's explanations of environmental law on several points. Ultimately, however, my most fundamental disagreement with their approaches stems from their failure to identify what I have argued here are the essential attributes of a legal field: a pattern of features that is common throughout the field and distinctive to the field.¹⁴⁴ With that critique in mind, we can turn to my argument for a different framework for understanding environmental law as a legal field.

B. Defining Environmental Law

In order to consider how we should think about environmental law as a legal field, we must first have some understanding of what the field of

¹⁴¹ See *infra* Part II.C.1-.3.

¹⁴² Westbrook, *supra* note 5, at 92.

¹⁴³ See, e.g., MARTHA ALBERTSON FINEMAN, *THE AUTONOMY MYTH: A THEORY OF DEPENDENCY* (2003); David R. Carlin, Jr., *The Crusoe Fallacy: Illusion of Personal Autonomy*, COMMONWEAL, Feb. 14, 1997; Stanley Ingber, *The Marketplace of Ideas: A Legitimizing Myth*, 1984 DUKE L.J. 1, 6 (1984).

¹⁴⁴ Cf. Hunter, *supra* note 18, at 20 (criticizing other frameworks proposed for health law on the ground that they "omit[] too much of what constitutes the core of health law").

environmental law might encompass, of the scope of situations we wish to characterize with our organizational framework. Although everyone probably has some intuitive sense of the meaning of the term *environmental law*, it is not self-defining. Some laws—for example, pollution statutes like the Clean Water Act¹⁴⁵ and Clean Air Act¹⁴⁶—obviously fall within the definition. But what about laws governing natural resources, such as the statutes governing management of public lands?¹⁴⁷ These laws reflect a consideration of the need to conserve and to preserve elements of the natural environment, but they also intentionally facilitate the exploitation of natural resources, even at the cost of some environmental degradation. Are such laws environmental? What about laws that do not necessarily reflect any consideration of the environment, yet may have significant environmental effects—for example, tax subsidies that encourage the purchase of sport utility vehicles with low fuel efficiencies or laws regulating rail freight rates?¹⁴⁸ Some statutes exhibit an obvious overall orientation toward protecting the environment, yet include specific provisions that do not share this goal, and in fact may be intended to sacrifice environmental protection to satisfy some other, opposing interest.¹⁴⁹ Other statutes do not exhibit an overall orientation toward protecting the environment, but include specific provisions that do reflect a goal of environmental protection.¹⁵⁰ Which of these are *environmental law* and which are not? In order to answer that question, we first must decide what we mean to accomplish by classifying a legal rule as environmental. For this Article, I am interested in how the legal classification *environmental law* illuminates the functioning of the law.¹⁵¹ In other words, my focus is on legal rules that are environmental in a way that somehow affects the substance of the rule or of its applications.

¹⁴⁵ 33 U.S.C. §§ 1251-1387.

¹⁴⁶ 42 U.S.C. §§ 7401-7671q.

¹⁴⁷ See, e.g., Federal Land Policy and Management Act of 1976, 43 U.S.C. §§ 1701-1785.

¹⁴⁸ See I.R.C. § 280F (allowing greater tax deduction for sport utility vehicles than for other cars); *id.* § 4064 (applying an excise tax to domestic sales of cars that do not satisfy fuel economy standards, but exempting cars that weigh more than 6000 pounds); *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 412 U.S. 669 (1973) (reviewing environmental group's challenge to Interstate Commerce Commission's approval of rail freight increases).

¹⁴⁹ See, e.g., Clean Air Act § 125, 42 U.S.C. § 7425 (authorizing rules or orders prohibiting certain air pollution sources "from using fuels other than locally or regionally available coal or coal derivatives").

¹⁵⁰ See, e.g., 10 U.S.C. § 2378 (requiring military procurement of copier paper to contain specified percentages of post-consumer recycled content); Pub. L. No. 106-181, Title I, § 157, 114 Stat. 89 (2000) (directing the Federal Aviation Administration to study the use of recycled materials in pavement used for runways, taxiways, and aprons).

¹⁵¹ See *infra* Part II.A.

A surprising amount of scholarship discusses and theorizes about environmental law without defining the scope of the term. Some authors, however, have offered definitions, which fall into three main types. The most expansive definitions include all laws that affect the physical environment.¹⁵² Other definitions restrict environmental law to laws that are enacted for the purpose, or the primary purpose, of protecting the natural environment.¹⁵³ The narrowest definitions include only laws that reflect an environmentalist ethic.¹⁵⁴

In choosing a useful definition for environmental law, the challenge is to balance overinclusiveness and underinclusiveness. An overinclusive definition risks depriving the term of meaning. Employed expansively, *environmental* “may seem uselessly broad, describing nothing in particular.”¹⁵⁵ If environmental law includes all laws that affect the natural environment, then virtually every law could fall within the definition, because almost every law affects human behavior, and almost every human behavior affects the natural environment in some respect.¹⁵⁶ An

¹⁵² See Alyson C. Flournoy, *In Search of an Environmental Ethic*, 28 COLUM. J. ENVTL. L. 63, 64 n.2 (2003) (“I use the term environmental law to describe the vast realm of law, largely statutory, that addresses human actions affecting the rest of the natural world.”); Errol E. Meidinger, *The New Environmental Law: Forest Certification*, 10 BUFF. ENVTL. L.J. 211, 262 (2002-2003) (“Environmental law can be generally defined as the law governing the relationships of humans to the biophysical environment.”).

¹⁵³ See U.S.-Can.-Mex. North American Agreement on Environmental Cooperation, Sept. 14, 1993, 32 I.L.M. 1480, art. 45.2(a) (defining “environmental law” as any statute or regulation “the primary purpose of which is the protection of the environment, or the prevention of danger to human life or health”); CRAIG N. JOHNSTON ET AL., LEGAL PROTECTION OF THE ENVIRONMENT 1 (2d ed. 2007) (“Environmental Law is law designed to protect the environment, and the plants and animals that rely on it, including us.”); Michael C. Blumm, *Studying Environmental Law: A Brief Overview and Readings for a Seminar*, 12 J. ENERGY NAT. RESOURCES & ENVTL. L. 309, 310 (1992) (“Environmental law is a loose amalgam of common law and (increasingly) statutory provisions designed to protect public health, ecosystems, and dependent and plant species.”); LAZARUS, *supra* note 2, at 1 (“[E]nvironmental law regulates human activity in order to limit ecological impacts that threaten public health and biodiversity.”).

¹⁵⁴ See A. Dan Tarlock, *The Future of Environmental “Rule of Law” Litigation*, 19 PACE ENVTL. L. REV. 575, 576 (2002) (defining environmental law as “the positive and common law that reflects environmentalism,” which Tarlock in turn defines as “an emerging philosophy or value system which posits that we living humans should assume science-based ethical stewardship obligations to conserve natural systems for ourselves as well as for future generations”) (footnotes omitted).

¹⁵⁵ ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 5 (3d ed. 2004); see also Tarlock, *supra* note 10, at 221 (“[T]he term ‘environmental’ has become so all-encompassing that it has been robbed of any operative meaning; it needs contours.”).

¹⁵⁶ See Kim Diana Connolly, *The Ecology of Breastfeeding*, 13 SOUTHEASTERN ENVTL. L.J. 157, 157, 164 (2008) (arguing that “laws that support breastfeeding should be considered

overinclusive definition also diverges from common understandings of the term *environmental law*. Definitions generally should match common usage.¹⁵⁷ A definition of environmental law that includes laws that may affect the natural environment, but that were enacted without any conscious consideration of the environment—for example, the aforementioned tax subsidies that encourage the purchase of sport utility vehicles with low fuel efficiencies—would diverge from what most people understand environmental law to entail, and likely thereby would lead to confusion.

Moreover, such laws raise a different set of issues than laws that consciously consider the environment. For laws enacted without any conscious consideration of the environment, the primary issue from an environmental law perspective is the threshold question *whether* the environment *should* factor into the lawmaking institutions' considerations. For laws that reflect a conscious consideration of the environment, the question is quite different, albeit not unrelated: *how does* the environment factor into the lawmaking institutions' considerations? This leads to a set of follow-up questions—such as what are the relevant policy tradeoffs, what values and interests do the lawmaking institutions bring to bear to resolve those tradeoffs, and what legal doctrine is produced as a result of those choices—that never arise with environmental laws that do not reflect consideration of the environment. This fundamental difference between the two categories suggests the usefulness of a classification that distinguishes between them instead of lumping them together.

Narrowing the definition of environmental law to include only laws that focus primarily on protecting the environment or that reflect an environmentalist ethic, on the other hand, ignores a crucially important feature of environmental law: the inherent and pervasive tradeoffs in environmental decisionmaking.¹⁵⁸ As a result of these tradeoffs, environmental protection is almost never the only or overriding purpose of a law that applies to the environment. Indeed, environmental law is better understood as a field in which the goal of environmental protection sits in a position of constant tension with countervailing interests and values. Environmental laws always reflect a balance of objectives, and envisioning environmental law as exclusively or primarily devoted to environmental protection would counterproductively obscure the essential question of how

environmental laws” because such law reduce “the negative environmental impacts of production and distribution of artificial baby milk”)

¹⁵⁷ See Solove, *supra* note 52, at 1096 (noting that theorists attempting to define privacy will “examine whether a conception of privacy includes the things we view as private and excludes the things we do not”); see also *id.* (“A few things might be left out, but the aim is to establish a conception that encompasses most of things that are commonly viewed under the rubric of ‘privacy.’ ”).

¹⁵⁸ See *infra* Part II.C.

to balance among competing goals and interests that include, but are not limited to, environmental protection.

The best approach to defining environmental law—the approach that appropriately balances overinclusiveness and underinclusiveness—encompasses laws that reflect a consideration of human impacts on the natural environment. This definition is not limited to laws enacted for the primary purpose of protecting the environment, but also does not include laws that unintentionally affect the environment. Thus, for example, natural resource laws that prescribe both conservation and exploitation should be considered environmental laws, whereas tax subsidies that encourage the purchase of sport utility vehicles with low fuel efficiencies should not be considered environmental laws. Defining environmental law to encompass laws that reflect a consideration of human impacts on the natural environment will allow us to study the various approaches that lawmaking institutions take to environmental management.¹⁵⁹

¹⁵⁹ This definition is not, however, unproblematic. In particular, it fails to illuminate fully another core characteristic of environmental problems: the pervasiveness of the relationship between human activities and the natural environment. The allocation of government spending between mass transit and roadways, for example, may significantly affect whether individuals decide to take mass transit or drive, with concomitant effects on the environment. But transportation funding legislation, unless enacted in part to address environmental impacts, would generally not be considered part of environmental law. Some provisions of federal pollution statutes, on the other hand, may have little if any real environmental impact. *See, e.g.*, Clean Water Act § 513, 33 U.S.C. § 1372 (setting forth labor standards for laborers and mechanics employed by contractors or subcontractors working on water treatment works funded by Clean Water Act grants). If we are to use the category of environmental law to think critically about the relationship between law and the environment, we need to examine that relationship both where it is intentional and where it is unintentional. To include every minor provision of the Clean Water Act within the definition of environmental law, but to exclude laws not aimed at the environment but which may have far greater environmental impacts, somewhat misallocates our attention. Excluding laws that have inadvertent environmental impacts from the definition of environmental law creates a problematic divide between the study of environmental problems and environmental law.

Rather than expanding the definition of environmental law to include all laws that are relevant to the physical environment, which would implicate the aforementioned drawbacks of overinclusiveness, an additional supplementary category can be employed to describe laws that significantly affect the environment but that do not reflect a conscious consideration of environmental impacts: *indirect environmental law* or *unintentional environmental law*. Although laws that reflect a conscious consideration of human impacts on the environment always will form the core of environmental law practice, teaching, and scholarship, unintentional environmental law merits greater attention than it usually receives from environmental lawyers, teachers, and scholars. *See, e.g.*, MICHAEL SHELLENBERGER & TED NORDHAUS, *THE DEATH OF ENVIRONMENTALISM: GLOBAL WARMING POLITICS IN A POST-ENVIRONMENTAL WORLD* 20 (2004) (noting that David Brower advocated “the need for the environmental community to invest more energy in changing the tax code”). Excluding indirect environmental law from the category of

C. *Factual Context*

Having defined what environmental law encompasses, we can turn to constructing an organizational framework that coheres environmental law as a field. Because my objective is to find an understanding of how environmental law functions, my approach will be primarily descriptive rather than prescriptive. To construct our organizational framework, we will address each of the underlying constitutive dimensions of environmental law—factual context, policy tradeoffs, values and interests, and legal doctrine—beginning with factual context. Our goal, as Part I established, is to identify core characteristics of environmental problems that, in combination, are both common and distinct to environmental law. I propose two such characteristics: (1) physical public resources; and (2) pervasive interrelatedness. From these two core characteristics follow other characteristics that also are important to the factual context of environmental law: temporal and spatial disjunction, and the cruciality yet unattainability of detailed scientific information. Moreover, these core characteristics help to explain the recurring tradeoffs that arise in environmental law.

1. Physical Public Resources

Environmental problems involve a physical resource that is in important senses publicly rather than privately valued, owned, and/or controlled. Public lands, including but not limited to lands designated for preservation, are an obvious example of such a resource. The government holds title to the lands and controls the use of the lands on behalf of the public.¹⁶⁰ Public lands also often are associated with public values, such as a collective desire for open space, although they also may have value for individual uses as well. Air, water, and wildlife are other examples of environmental physical public resources. Although ownership may be less clear than with public lands, they are not wholly privately owned and controlled.¹⁶¹ More abstractly, environmental values such as picturesque

environmental law hinders the insight that many indirect environmental laws should be direct environmental laws—that is, where environmental effects of a law are significant, they arguably should be managed consciously.

¹⁶⁰ See Adell Louise Amos, *The Use of State Instream Flow Laws for Federal Lands: Respecting State Control While Meeting Federal Purposes*, 36 ENVTL. L. 1237, 1280 (2006) (“[F]ederal public lands are managed and the waters are protected for the benefit of the public.”); see also generally Joseph L. Sax, *The Public Trust Doctrine in Natural Resources Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471 (1970).

¹⁶¹ See *Hughes v. Oklahoma*, 441 U.S. 322, 335 (1979); *United States v. Causby*, 328 U.S. 256 (1946) (declining to recognize private property rights to airspace); Michael C. Blumm

views and biodiversity resemble public resources with a physical component. They arise as a collective result of individual action, and are enjoyed collectively by the public as well.

The interrelationship among uses of public resources, and the special difficulties with attempting to regulate conflicts among uses in the environmental context, lie at the heart of all problems that arise in environmental law.¹⁶² Wanting clean air or wanting to burn coal to generate electricity are not themselves environmental problems; the problem is when those uses conflict, when some people want clean air and others (or even the same people) want to pollute the air to generate electricity.¹⁶³

Some of the difficulties with addressing use conflicts in environmental law are not distinct to the environmental context, but rather arise in many common-resource situations. Public resources pose difficulties in a society like ours organized around an economic system based on markets and private property and around a political and legal system based on individual rights. When individuals have unregulated access to public resources, they tend to overuse them, because each individual user enjoys the full benefits of her use, whereas the costs of her use are shared among everyone who uses or benefits from, or could use or benefit from, the resource.¹⁶⁴ Management of public resources therefore requires collective action among or on behalf of the users and beneficiaries to limit use of the resource to optimal levels.¹⁶⁵ The difficulties of instituting collective action have been widely noted.¹⁶⁶ Individual users

& Lucas Ritchie, *Lucas's Unlikely Legacy: The Rise of Background Principles as Categorical Takings Defenses*, 29 HARV. ENVTL. L. REV. 321, 352-53 (2005); Dave Owen, *Law, Environmental Dynamism, Reliability: The Rise and Fall of CalFed*, 37 ENVTL. L. 1145, 1179 (2007) (noting that, "water rights users may own usufructuary rights, but the state owns the water and watercourses, and holds the latter as trustee for its people") (footnotes omitted) [find wildlife cite].

¹⁶² I intentionally elide here any distinction between use and non-use valuation of environmental resources. In particular, I employ the term "use" expansively, to include values such as preservation that do not necessarily involve any physical presence or involvement at the resource in question. For example, I would count an appreciation of the existence of wildlands in their pristine condition as a use of the wildlands.

¹⁶³ Cf. Ronald Coase, *The Problem of Social Cost*, 3 J. L. ECON. 1 (1960).

¹⁶⁴ See, e.g., Garrett Hardin, *The Tragedy of the Commons*, 162 SCI. 1243 (1968); Barton H. Thompson, Jr., *Tragically Difficult: The Obstacles to Governing the Commons*, 30 ENVTL. L. 241, 242 (2000). Economists refer to this effect as a *negative externality* (because the individual does not face the full costs of his or her action) or the *tragedy of the commons* (referring to the incentive to overuse public resources).

¹⁶⁵ See Hanoch Dagan & Michael A. Heller, *The Liberal Commons*, 110 YALE L.J. 549, 574-75 (2001).

¹⁶⁶ See, e.g., RUSSELL HARDIN, *COLLECTIVE ACTION* (1982); MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* (rev. ed. 1971);

must be convinced of their interest in the public resource and of the need for management to limit its use.¹⁶⁷ The greater the number and variation in users, the greater the difficulty of attempting to organize them into collective action.¹⁶⁸ Organizing requires a leader who is willing to “bear the costs of organization and focus the attention of a diffuse, disconnected collection of individuals.”¹⁶⁹ Individual users of the public resource, who continue to have a strong incentive to free ride on the efforts of others, are likely to resist efforts to limit their use of a public resource, even if they recognize the need for limits on overall use.¹⁷⁰

In addition to these standard difficulties of instituting collective action to regulate a common resource, several characteristics of environmental public resources make them particularly difficult to manage or to regulate collectively. First, the environment, in its many forms, is traditionally an unregulated public resource, often associated with long traditions and customs of relatively uninhibited exploitation and open access.¹⁷¹ Users perceive these traditions and customs as conferring an entitlement and accordingly often strongly resist efforts to limit their uses of

ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* (James E. Alt & Douglass C. North eds., 1990).

¹⁶⁷ See Michael S. Kang, *Race and Democratic Contestation*, 117 *YALE L.J.* 734, 770 (2008) (“Similarly situated citizens may act in disparate ways that collectively lead to the least preferred outcome, because they do not see, or at least do not prioritize, the commonalities among them. They may fall victim to preference cycling in which even those with similar preferences may struggle to achieve lasting agreement.”).

¹⁶⁸ See Brigham Daniels, *Emerging Commons and Tragic Institutions*, 37 *ENVTL. L.* 515, 527 (2007); George J. Stigler, *Free Riders and Collective Action: An Appendix to Theories of Economic Regulation*, 5 *BELL J. ECON. & MGT. SCI.* 359, 360-62 (1974).

¹⁶⁹ Kang, *supra* note 167, at 770; see also HARDIN, *supra* note 166, at 35-37 (noting the need for political entrepreneurs “who, for their own career reasons, find it in their private interest to work to provide collective benefits to relevant groups”).

¹⁷⁰ See Ostrom, *supra* note 166, at 36; Stigler, *supra* note 168. Dan Kahan has criticized some of the precepts of collective action literature, arguing that empirical social science shows that, “[i]n collective-action settings, individuals adopt not a materially calculating posture but rather a richer, more emotionally nuanced reciprocal one.” Dan M. Kahan, *The Logic of Reciprocity: Trust, Collective Action, and Law*, 102 *MICH. L. REV.* 71 (2003). According to Kahan, individuals will willingly contribute to collective action when they trust that others “will voluntarily respond in kind.” *Id.* at 72. As applied to public resources that are widely used in relative anonymity, however, the results of Kahan’s framework do not necessarily diverge from the results of conventional public choice analysis. In particular, where the users are numerous and varied, and can free ride in relative anonymity, building the requisite trust among users is likely to be difficult.

¹⁷¹ Cf. Peter Manus, *Our Environmental Rebels: An Average American Law Professor’s Perspective on Environmental Advocacy and the Law*, 40 *NEW ENG. L. REV.* 499, 518 (2006) (“The American jural system is based on a fundamental presumption that people bear no moral duties to refrain from exploiting the environment . . .”).

the environment.¹⁷² Second, environmental public resources often have extremely numerous, valuable, and varied uses, which increases the probability and intractability of conflicts among users and decreases the likelihood of effective collective action. Third, the numerousness of users and the often complex lines of causation that create interrelationships among uses mean that, when conflicts among uses arise, it can be exceedingly difficult or impossible for any user harmed by the conflict to trace her harm to any particular other user or beneficiary.¹⁷³ Fourth, the same factors—numerous users and complex causation—make it relatively easy for users to ignore, or not to recognize, their causal role in affecting another use. Fifth, the objectives of regulating the environment are often difficult to evaluate, because they are not valued either economically as the subject of traditional market transactions or politically as the subject of traditional individual rights.¹⁷⁴ This is especially true where, as is often the case, environmental harms are difficult to perceive and to measure and where the benefits associated with protecting the environment involve existence value rather than use value, or (even more so) intrinsic value independent of utility or tangible benefit to humans.

As an illustration of some of these difficulties, take the example of waterways such as rivers or lakes. Waterways are subject to many and varied uses, including public water system sources, irrigation sources, pollution sinks, navigation, flood control, recreation, and aesthetic pleasure. For many major waterways, thousands or millions of individuals and businesses partake in or benefit from one or more of these uses. Potential conflicts among the uses, and among prospective users of the same use, are obvious. Polluted waterways are more difficult to use for safe drinking

¹⁷² See, e.g., Ray Rasker, *Wilderness for Its Own Sake or as Economic Asset?*, 25 J. LAND RESOURCES & ENVTL. L. 15, 15 (2005) (“[I]n the remote corners of the rural West, with a long history of dependence on public lands for mining, energy development and logging, the idea of setting aside land for conservation is seen as a direct affront to the well-being of local residents.”); see also Paul Slovic, *Perception of Risk*, 236 SCI. 280, 281 (1987) (“Strong initial views are resistant to change because they influence the way that subsequent information is interpreted.”).

¹⁷³ See LAZARUS, *supra* note 2, at 33 (“due to the highly interrelated nature of the ecosystem, it is almost always a mistake to suppose that one can isolate a single discrete cause as the source of an environmental problem”); Richard J. Lazarus, *Restoring What’s Environmental About Environmental Law in the Supreme Court*, 47 UCLA L. REV. 703, 747 (2000) (“[E]nvironmental harms are more typically the cumulative and synergistic result of multiple actions, often spread over significant time and space. This is primarily traceable to the sharing inherent in any common natural resource base, which is the object of so many simultaneous and sporadic actions over time and space.”).

¹⁷⁴ Cf. Lazarus, *supra* note 173, at 747 (“Many of the ecological injuries resulting from environmental degradation are not readily susceptible to monetary valuation and have a distinctively nonhuman character.”).

water and less desirable for recreation; and water used for irrigation is unavailable for other uses. The canoeist whose enjoyment of the waterway is impaired by the stench emanating from its polluted waters, however, may find it difficult to attribute that harm to any particular pollution source. But the difficulties of the sole canoeist pale in comparison to those of a regulator faced with an overwhelming number of desired uses of a resource, connected by a complex web of interrelationships that create a dizzying array of conflicts and synergies.

2. Pervasive Interrelatedness

Everything in the environment, including humans, is part of a pervasively interrelated ecological system.¹⁷⁵ This pervasive interrelatedness sometimes is referred to as the First Law of Ecology.¹⁷⁶ The media of these interrelationships frequently are the physical public resources that comprise the environment—for example, a river that carries nitrates from the fertilizers a farmer applies to his fields downstream to a tadpole that experiences developmental deformities from nitrate exposure. The interrelatedness creates connections that can cross great physical distance and time. Air pollutants emitted into the air in Asia drift across the Pacific Ocean to California.¹⁷⁷ Smoking and asbestos exposure have a synergistic interaction, resulting in a greater risk of lung cancer than what can be attributed to the separate effects of smoking and asbestos.¹⁷⁸

¹⁷⁵ See, e.g., Howard Latin, *Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and 'Fine-Tuning' Regulatory Reforms*, 37 STAN. L. REV. 1267, 1273 (1985); Kelly Nolen, *Residents at Risk: Wildlife and the Bureau of Land Management's Planning Process*, 26 ENVTL. L. 771, 779 (1996) (“Animals and plants within an ecosystem are intricately interrelated, and the decline of any one species may have serious effects on the balance of the entire system, with unexpected consequences for humans.”).

¹⁷⁶ See, e.g., BARRY COMMONER, *THE CLOSING CIRCLE: NATURE, MAN, AND TECHNOLOGY* 33-38 (1971); Zygmunt J.B. Plater, *Environmental Law in the Political Ecosystem--Coping with the Reality of Politics*, 19 PACE ENVTL. L. REV. 423, 480 n.77 (2002); see also PLATER ET AL., *supra* note 155, at 5 (“The environmental perspective . . . starts from the premise of interconnectedness--that all human enterprises exist within one vast shared common context in which actions have collateral consequences that are relevant and should be considered.”); see also *id.* at xxx (“As the First Law of Ecology says, everything is connected to everything else.”); *id.* at 5 (“the environmental perspective conceptualizes all human enterprises existing within one large system of interconnected systems”).

¹⁷⁷ See Andrew Jacobs, *U.N. Reports Pollution Threat in Asia*, N.Y. TIMES, Nov. 13, 2008.

¹⁷⁸ See Thomas C. Erren et al., *Synergy Between Asbestos and Smoking on Lung Cancer Risks*, 10 EPIDEMIOLOGY 405 (1999); see also Jun Peng, *Iron and Paraquat as Synergistic Environmental Risk Factors in Sporadic Parkinson's Disease Accelerate Age-Related Neurodegeneration*, 27 J. NEUROSCIENCE 6914 (2007) (reporting findings suggesting that increased oral intake of iron in the neonatal period and environmental exposure to the

Organochlorine compounds accumulate in animal lipid tissue over time, affecting development and reproduction.¹⁷⁹

The pervasive interrelatedness among elements of the environment makes the environment a highly complex system that often is exceedingly difficult to manage. As we have seen, the objective of environmental law is to resolve conflicts among uses. The complexity and pervasive interrelatedness of the environment, however, make it extremely difficult to decide which activities need to be regulated to what extent in order to achieve a desired balance. Any particular impact on a use of a resource may arise from numerous, difficult-to-identify causal events. Conversely, every event may contribute to numerous, difficult-to-identify impacts. Pervasive interrelatedness thus contributes to the extraordinarily complex lines of causation that often characterize environmental problems. It may be difficult or impossible to determine with any precision a particular action's innumerable causes and effects that ripple throughout the environment. Not surprisingly, unintended consequences are a recurring phenomenon in environmental law.¹⁸⁰

pesticide paraquat have a synergistic effect on increasing the risk of neurodegeneration associated with Parkinson's disease).

¹⁷⁹ See Karen A. Glennemeier & Linda J. Begnoche, *Impact of Organochlorine Contamination on Amphibian Populations in Southwestern Michigan*, 36 J. HERPETOLOGY 233, 233 (2002).

¹⁸⁰ See, e.g., James L. Huffman, *Marketing Biodiversity*, 38 IDAHO L. REV. 421, 425 (2002) (noting that domestic environmental regulation of industry may export environmental degradation to other countries); J.B. Ruhl & James Salzman, *Mozart and the Red Queen: The Problem of Regulatory Accretion in the Administrative State*, 91 GEO. L.J. 757, 814 (2003) (noting the problem of "media-shifting," in which "pollution-control laws protecting one environmental medium (for example, air, water, or land) . . . generat[e] . . . pollution in alternative media"); Erin Ryan, *New Orleans, the Chesapeake, and the Future of Environmental Assessment: Overcoming the Natural Resources Law of Unintended Consequences*, 40 U. RICH. L. REV. 981, 984 (2006) (noting that, when "Virginia resource managers attempted to protect intertidal wetlands by establishing a development-free jurisdictional boundary . . . landowners then built all the way to the legal side of the line, . . . [which] inadvertently doomed the protected wetlands by disconnecting them from the natural shoreline systems that sustain them during such periods of sea-level rise" and thereby "accomplished the exact opposite of what policymakers had hoped for."); David Sunding & David Zilberman, *Consideration of Economics under California's Porter-Cologne Act*, 13 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 73, 96 (2007) ("Water quality regulation that aims to improve environmental quality can have unintended consequences that harm the environment and natural resources. The reallocation of water from one location to another, to meet water quality regulation, may reduce the well-being of fish and wildlife dependent on the water in the source region. Reduction of use of chemical pesticides that reduce farm productivity may lead to an increase in utilized land and expansion of the utilized land base to wilderness areas. Diversion of water resources to meet environmental quality objectives may reduce the capacity to utilize this water in provision of environmental amenities.").

3. Secondary Characteristics

The core characteristics of environmental problems—physical public resources and pervasive interrelatedness—give rise to other, secondary characteristics that also are important for understanding environmental law.

Temporal and Spatial Disjunctions. The pervasive interrelatedness among elements of the environment create complex lines of causation that often span considerable distance and time. These effects can lead to temporal and spatial disjunctions that are important to environmental decisionmaking. Common examples of such disjunction include the *discharge-exposure disjunction*, wherein a pollutant discharged into the environment may travel a great distance and/or over a long time before exposing a person, animal, or plant. Polychlorinated biphenyls (“PCBs”), for example, which are highly toxic synthetic organic chemicals manufactured in the United States from 1929 until 1977, do not readily break down in the environment and therefore can persist for years, carried throughout the globe in a series of cycles of volatilization into the atmosphere and then redeposition to the surface.¹⁸¹ Another example of a disjunction is an *exposure-effect disjunction*, wherein an adverse health effect may not manifest itself for months, years, or even decades after a person is exposed to an environmental hazard.¹⁸² Individuals exposed to asbestos, for example, may not contract mesothelioma for 20 to 50 years after their exposure.¹⁸³ A *cost-benefit disjunction* arises where, as is often true, the benefits for a use of the environment are experienced immediately but the costs are not experienced until much later.¹⁸⁴

These disjunctions create difficulties for environmental lawmaking. Environmental effects manifest themselves over a much broader expanse of space and time than human thought and institutions typically consider in their decisionmaking; it is in many respects still unclear whether humans

¹⁸¹ See AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, TOXICOLOGICAL PROFILE FOR POLYCHLORINATED BIPHENYLS 1-3, 479, 481 (2000).

¹⁸² See, e.g., Nina A. Mendelson, *A Control-Based Approach to Shareholder Liability for Corporate Torts*, 102 COLUM. L. REV. 1203, 1237 (2002) (“the injuries to human health and the environment of particular substances may take years to manifest themselves”).

¹⁸³ See A. Chovil & C. Stewart, *Latency Period for Mesothelioma*, 314 LANCET 853 (1979).

¹⁸⁴ See Louis Kaplow, *Discounting Dollars, Discounting Lives: Intergenerational Distributive Justice And Efficiency*, 74 U. CHI. L. REV. 79, 110 n.63 (noting that “greater use of natural resources or degradation of the environment [sometimes] produces immediate benefits but long-term costs”).

have the capacity to understand and plan over the area and time that are required for effective environmental lawmaking.¹⁸⁵

Scientific Uncertainty. Numerous scientific questions underlie any environmental problem. The standard approach to regulation calls for regulating an activity in order to reduce or to avoid the harm that it can cause.¹⁸⁶ For environmental problems, the link between a harm and its cause(s) runs through the medium of an ecological system comprised of a complex web of pervasively interrelated constituent elements. The pervasive interrelatedness among components of the natural environment and the temporal and spatial disjunction between the causes and effects of environmental disruption are extremely complicating factors that make environmental effects much more difficult to predict, or even to ascertain retrospectively.¹⁸⁷ Often these questions are at the frontiers of science, arising in areas in which we have little empirical data and little understanding of the natural interactions and processes. Policymakers look to science to untangle that web, but there is never complete scientific information. The combined cruciality and inevitability of scientific uncertainty creates a circumstance in which a thorough understanding of environmental problems is both highly important and yet wholly unattainable. As a result, environmental law requires decisionmaking in a context of great scientific uncertainty.¹⁸⁸

¹⁸⁵ See Richard J. Lazarus, *Human Nature, the Laws of Nature, and the Nature of Environmental Law*, 24 VA. ENVTL. L.J. 231, 239 (2005) (“The need for environmental law can be seen as arising from the persistent gap between the spatial and temporal horizons of human nature and the much wider and longer spatial and temporal dimensions of the consequences of human activities because of the laws of nature.”); see also Holly Doremus, *Constitutive Law and Environmental Policy*, 22 Stan. Env’tl. L.J. 295, 318-19 (2003) (identifying the *durability-flexibility dilemma*: because environmental problems often develop over extended periods of time, environmental policies “must be durable over unusually long periods of time” yet also must be “flexible enough to respond to new information and changing conditions”).

¹⁸⁶ See, e.g., Robert L. Glicksman, *Pollution on the Federal Lands III: Regulation of Solid and Hazardous Waste Management*, 13 STAN. ENVTL. L.J. 3, 54 (1994) (“Obviously, the purpose of most environmental regulation is to prevent environmental harm and adverse effects on human health.”).

¹⁸⁷ See, e.g., Lazarus, *supra* note 185, at 240 (“the further that the laws of nature spread cause and effect out over time and space, the more scientific uncertainty there will be regarding whether the adverse environmental effects projected in the future will in fact ever happen and whether the adverse environmental effects perceived today were in fact caused by specific activities in distant locations and times.”).

¹⁸⁸ See Doremus, *supra* note 185, at 318-19; Daniel A. Farber, *Building Bridges Over Troubled Waters: Eco-Pragmatism and the Environmental Prospect*, 87 MINN. L. REV. 851, 855 (2003); Robert L. Glicksman, *Balancing Mandate and Discretion in the Institutional Design of Federal Climate Change Policy*, 102 NW. U.L. REV. COLLOQUY 196 (2008); Richard J. Lazarus, *Meeting the Demands of Integration in the Evolution of*

4. Other Characteristics

I am not the first to identify fundamental characteristics of environmental law. For example, Richard Lazarus has argued that the “common denominator” unifying environmental law is the concept of ecological injury, which in turn implicates certain “recurring features” of the factual context of environmental law.¹⁸⁹ Lazarus identifies six such features: (1) “Irreversible, Catastrophic, and Continuing Injury”; (2) “Physically Distant Injury”; (3) “Temporally Distant Injury”; (4) “Uncertainty and Risk”; (5) “Multiple Causes”; and (6) “Noneconomic, Nonhuman Character.”¹⁹⁰ These features of ecological injury, in turn, result in environmental laws that exhibit the “dominant characteristics” of “complexity, scientific uncertainty, dynamism, precaution, and controversy.”¹⁹¹ And Holly Doremus has identified “four distinctive features [of environmental problems] that make them especially intractable”: (1) “high levels of uncertainty”; (2) “conflicts between socially contested yet strongly held values”; (3) the necessity of collective action; and (4) the necessity of durable yet flexible solutions.¹⁹²

The characteristics Lazarus and Doremus describe are important and recurring characteristics in environmental law. But I would argue that the core characteristics I have identified—physical public resources and pervasive interrelatedness—are in the nature of independent, primary features, from which Lazarus’s and Doremus’s characteristics derive. Accordingly, Lazarus’s and Doremus’s characteristics overlap considerably with what I am calling secondary characteristics of environmental law. Thus, for example, although Lazarus and Doremus are undoubtedly correct that uncertainty is prevalent in environmental policymaking, uncertainty is not distinctive to the environment, but rather pervasive in many facets of life and therefore many legal fields.¹⁹³ Moreover, the uncertainty in environmental decisionmaking is largely attributable to the pervasive

Environmental Law: Reforming Environmental Criminal Law, 83 GEO. L.J. 2407, 2420 (1995); Richard J. Lazarus, *Survey Says: Court Doesn't Get It*, 17 ENVTL. F. 44, 45 (2000); Lazarus, *supra* note 173, at 747.

¹⁸⁹ Lazarus, *supra* note 173, at 745.

¹⁹⁰ *Id.* at 745-48.

¹⁹¹ LAZARUS, *supra* note 2, at 16.

¹⁹² Doremus, *supra* note 185, at 318-19.

¹⁹³ See, e.g., Juliet P. Kostritsky, *Uncertainty, Reliance, Preliminary Negotiations and the Holdup Problem*, 61 SMU L. REV. 1377, 1378 (2008) (“The problem of uncertainty is pervasive in all contract negotiations.”); Alex Raskolnikov, *Relational Tax Planning Under Risk-Based Rules*, 156 U. PA. L. REV. 1181, 1262 (2008) (“[R]elational tax planning is surrounded by pervasive uncertainty.”).

interrelationships that comprise ecological systems.¹⁹⁴ For my purpose of understanding environmental law as a distinctive legal field, therefore, it is better to focus on the core characteristic that gives rise to the uncertainty that Lazarus and Doremus note.¹⁹⁵

D. Policy Tradeoffs

The factual context in which environmental law operates—physical public resources subject to numerous uses connected by an intricate web of pervasive interrelationships—creates certain key policy tradeoffs that frame lawmaking choices. To date, the dominant paradigm has framed these tradeoffs as pitting economic welfare against environmental protection. The economy-environment tradeoff can be a powerful lens. It accounts for much of the politics of environmental lawmaking, in which environmental groups (representing “the environment”) pursue regulation and the regulated community (representing “the economy”) fights it. Moreover, there is certainly some factual truth to the economy-environment tradeoff; many environmental laws are quite costly.¹⁹⁶ For these reasons and others, it sometimes will be appropriate and helpful to cast the principal tradeoff in environmental lawmaking as economics versus environment.

The economics-environment tradeoff is, however, an oversimplifying generalization. The realities of the environmental decisionmaking context are more complicated and more nuanced than economics versus environment indicates, and therefore looking at environmental decisionmaking solely or principally through the lens of the economy-environment tradeoff obscures important insights into environmental lawmaking. The principal problem with the economy-environment tradeoff is that economic interests and environmental protection are not as monolithic, nor as oppositional, as the tradeoff suggests.

First, environmental protection itself provides numerous economic benefits. Cleaner air is associated with various benefits with economic value, such as reduced health care costs for treating respiratory difficulties. The decision whether to allow additional air pollution therefore poses a

¹⁹⁴ See LAZARUS, *supra* note 2, at 19 (tracing scientific uncertainty in environmental lawmaking to “the elaborate intricacies of the workings of the natural environment”).

¹⁹⁵ Lazarus and Doremus compiled their lists for purposes other than defining environmental law as a distinctive legal field, and the differences between our lists may be attributable to our differing purposes rather than to any disagreement.

¹⁹⁶ See, e.g., EPA, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT, 1970 TO 1990 at ES-2 (1997) (reporting that the direct costs of implementing the Clean Air Act from 1970 to 1990 totaled \$523 billion).

tradeoff not just between economic benefits and environmental benefits, but also between conflicting economic benefits: the benefits from using the air as a waste sink and the benefits of reduced health care costs from cleaner air. Conflicting economic benefits also arise from temporal tradeoffs, as using an environmental resource in a particular way at one time may preclude the same use later. For example, pumping groundwater from an underground aquifer to use for irrigating farmland may preclude or limit later use of the aquifer. Thus, in many situations, environmental lawmaking poses a tradeoff among different economic benefits.

Second, environmental protection also is not as monolithic as the economy-environment tradeoff suggests. Different uses that we commonly associate with environmental protection may conflict in a particular situation. Hiking, camping, and other recreational uses may impair the quality of plant and wildlife habitat. Ecosystem restoration may require the elimination or reduction of non-native plants and wildlife. Filtering out pollutants from wastewater or air emissions may generate solid wastes. Regulating industrial activity more stringently in California may induce new industrial activity in other states. Thus, in many situations, environmental lawmaking poses a tradeoff among different environmental benefits.

These economic-economic tradeoffs and environment-environment tradeoffs are as important to understanding the problems that arise in environmental law as the economic-environment tradeoff. Thus, as a frame for analyzing environmental lawmaking, the economics-environment tradeoff overgeneralizes and oversimplifies to an extent that limits its explanatory power. Thinking about environmental law in terms of economy versus environment may simplify the issues, but it does so without enough benefit. It does not, for example, illuminate any clear patterns in environmental law doctrine.¹⁹⁷

Rather than replacing the economy-environment tradeoff with another oversimplified generalization with similar shortcomings, consider the policy tradeoffs in environmental lawmaking more contextually. Thinking in terms of the various competing uses that can be made of environmental resources provides a promising analytical framework for studying environmental lawmaking. The available options to manage an

¹⁹⁷ See J.B. Ruhl, *Working Both (Positivist) Ends Toward a New (Pragmatist) Middle in Environmental Law*, 68 GEO. WASH. L. REV. 522, 523 (2000) (characterizing environmental lawmaking as a “war of annihilation” between “two extreme and opposing philosophies—one devoted to protecting the economy and the other to protecting the environment . . . that has left in its wake the mish-mash of laws, regulations, judicial opinions, and countless administrative decisions and policies that . . . has no agenda, no theme, no way of thinking” and “lacks any coherent philosophy”).

environmental resource can be determined by arranging all possible combinations of nonconflicting uses. Each scenario, or combination of nonconflicting uses, is associated with a set of benefits that derive from those uses. The differences among the different scenarios represent the tradeoffs posed by environmental lawmaking. Thinking thusly in terms of use conflicts provides a coherent analytical framework for understanding environmental lawmaking.

The idea of use conflicts is, of course, neither original to the Article nor unique to the environmental context. Disputes over natural resources often are characterized in terms of use conflicts.¹⁹⁸ And it was almost fifty years ago that Coase advocated what is essentially a use-conflict framework for a variety of land-use problems, including but not limited to environmental disputes.¹⁹⁹ Generally, however, prior references to use conflicts, even in the environmental context, have not linked them to the distinctive characteristics of the environmental context: physical public resources with pervasive interrelatedness. In addition, prior references to use conflicts in environmental or natural resource law and policy generally have not extended the term to the full spectrum of benefits derived from environmental resources. Appreciation of an environmental resource may not always involve an active or consumptive use of the resource, but it is a use nonetheless.²⁰⁰ Moreover, it is a use that includes a crucial physical component, in that appreciation of the environmental resource depends to a significant extent on the physical condition of the resource.

Conceptualizing environmental law with an organizational framework that focuses on use conflicts carries several advantages over alternative frameworks. First, thinking of environmental lawmaking in terms of use conflicts helpfully highlights the fundamental difficulties of the

¹⁹⁸ See, e.g., *McFarland v. Kempthorne*, 545 F.3d 1106 (9th Cir. 2008) (describing dispute over use of snowmobile on route within Yellowstone National Park as presenting problem of “use conflicts”); *Nevada Land Action Ass’n v. United States Forest Service*, 8 F.3d 713, 719 (9th Cir. 1993) (noting that the National Forest Management Act, 16 U.S.C. §§ 1600-1687, “directs the [Forest] Service to manage conflicting uses of forest resources”) (citing 16 U.S.C. § 1604(g)(3)); Mark O. Hatfield, *The Nation Needs a Comprehensive Water Policy*, 22 ENVTL. L. 792, 793 (1992) (“Throughout this country, we are faced within increasing conflicts over the use of our natural resources.”)

¹⁹⁹ See Coase, *supra* note 163, at 2 (suggesting approaching the problem of contamination of a stream as a question whether to use the stream for fish habitat or as a waste sink) (citing GEORGE J. STIGLER, *THE THEORY OF PRICE* 105 (1952)); see also Henry E. Smith, *Exclusion and Property Rules in the Law of Nuisance*, 90 VA. L. REV. 965, 1000 (2004) (“To Coase, the economic problem of externalities was essentially one of conflicting resource use.”).

²⁰⁰ Cf. *Ohio v. United States Dep’t of the Interior*, 880 F.2d 432, 464 (D.C.Cir.1989) (“Option and existence values may represent ‘passive’ use, but they nonetheless reflect utility derived by humans from a resource . . .”).

environmental context. For example, environmental lawmaking requires lawmaking institutions to resolve tradeoffs among conflicting uses, but the immense complexity of the interrelationships in the environment renders our understanding of the environment incomplete and makes the precise nature of those tradeoffs difficult to ascertain. Moreover, the pervasive interrelationships of the environment prevent lawmaking institutions from simplifying their decisionmaking by narrowing their focus.

Second, unlike many frameworks that have been proposed for thinking about environmental law,²⁰¹ a use-conflict framework does not assume any particular baseline by which to judge alternative legal arrangements. Nor does a use-conflict framework favor any particular use of the environment as normatively superior. Instead, a use-conflict framework provides a relatively value-neutral approach that facilitates a full comparison of alternatives. As suits its objective as a descriptive framework, it does not favor any particular alternative, but rather provides a useful basis for evaluating alternatives by applying a normative framework, or even for evaluating alternative normative frameworks. For example, a proponent of a social utility-maximization normative framework would favor choosing the legal rule associated with “the set of uses that maximizes the overall value of all resources.”²⁰²

E. Values and Interests

Tradeoffs are only part of lawmaking; equally important are the values and interests that lawmaking institutions bring to bear on the relevant tradeoffs in order to make decisions that produce law. As with the economy-environment tradeoff, we could frame our description of the values and interests in environmental lawmaking in terms of abstract generalizations: environmental protection, distributional equity, equity, economic growth, freedom from regulation, and so forth. But a descriptive analysis framed with abstract, generalized values and interests suffers from the same problems as the oversimplified generalization of the economy-environment tradeoff. We are unlikely to learn much about how environmental lawmaking functions by trying to discern whether lawmaking institutions value environmental protection in the abstract, or even whether lawmaking institutions value environmental protection comparatively more or less than some other abstract value, such as economic well-being. To the contrary, our descriptive analysis of the

²⁰¹ See, e.g., *supra* Part II.A.3 (criticizing Dan Tarlock’s and David Westbrook’s proposed frameworks on this ground).

²⁰² Henry E. Smith, *Exclusion and Property Rules in the Law of Nuisance*, 90 VA. L. REV. 965, 1000 (2004).

values and interests in environmental lawmaking becomes insightful when values and interests are framed specifically enough to tie them to specific uses of environmental resources. For example, trying to determine whether the National Marine Fisheries Service (“NMFS”) values sustainable fisheries in the abstract is unlikely to yield much concrete insight into the functioning of fisheries regulation. But determining whether NMFS closes a fishery when necessary to preserve its long-term viability, over the objections of the fishing industry, provides useful information about the relevant values and interests, thereby helping us understand environmental lawmaking in a meaningful way. Similarly, trying to determine whether the Environmental Protection Agency’s (“EPA”) regulations promulgated pursuant to the Clean Air Act are efficient in the abstract is not as useful to understanding environmental lawmaking as evaluating the relative efficiency of policy options before EPA and determining why the agency sometimes chooses a less-efficient option. Thus, as with tradeoffs, the values and interests associated with environmental lawmaking are best analyzed descriptively in reference to the potential uses of environmental resources, and the conflicts among those uses in particular.

F. Legal Doctrine

As the Introduction noted, commenters have bemoaned the incoherence of environmental law as a body of legal doctrine.²⁰³ There do not appear to be any fundamental, unifying substantive principles that explain all of environmental law, and I will not propose any. Rather, I want to make two interrelated points about the incoherence of environmental law doctrine. First, the incoherence of environmental law provides fertile material for investigation and analysis.²⁰⁴ We have much to learn from environmental law’s incoherence, and incoherence can play a constructive role in the development of environmental law. Second, although the substance of environmental law doctrine cannot be reduced to a few fundamental principles, this does not mean that environmental law lacks a conceptual core. Organizational frameworks such as the one proposed in this Article, which focus on patterns in dimensions of environmental law other than legal doctrine, can provide a coherent understanding of environmental lawmaking.

²⁰³ See *supra* notes 4-5 and accompanying text.

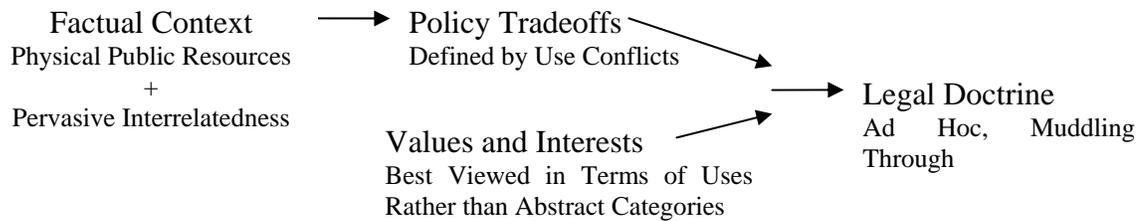
²⁰⁴ Theodore Ruger has made a similar argument with respect to the incoherence of health law. See Ruger, *supra* note 20, at 639 (contending that the “messiness and complexity” of health law “is part of what makes health law important and unique, and provides fertile terrain for generalized study”).

As to the benefits of environmental law's incoherence: There is a strong ad hoc, muddling-through character to environmental lawmaking as it has proceeded to date in this country. In part, this may reflect an instability in values—a lack of societal consensus about how to manage our relationship with the natural environment.²⁰⁵ But the incoherence of environmental law runs deeper than an instability of values. The incoherence reflects the ongoing struggles of environmental law; incoherence is a functional and productive reaction to the extreme difficulties environmental law confronts. The factual characteristics of the environment—physical public resources subject to numerous, pervasively interrelated uses—give environmental problems a scale and complexity that severely taxes, and may even surpass, the abilities of human understanding. In the environmental lawmaking context, uncertainty is endemic. Lawmaking institutions respond to these challenges with an ad hoc mix of policies, struggling to find something that works. Pragmatic experimentation necessarily produces incoherence.

Moreover, some of what we perceive as incoherence in environmental law doctrine is actually variation, whether intentional or unintentional. Different use conflicts create different tradeoffs and yield different environmental laws. Regulatory approaches evolve over time as lawmaking institutions' understanding of environmental problems, and of the effects of environmental policies, change. When a policy approach does not function as intended, new approaches are tried. There is no strong force pushing lawmaking institutions toward coherence in their approach to environmental problems, and, in light of the benefits of variation, it is not clear that this is such a bad thing.

One understandably could ask whether, in the face of this incoherence (and variation), there is enough to hold environmental law together as a field. I believe the answer is yes. An analytical framework like the one set forth in this Article can cohere environmental lawmaking conceptually, even if it does not and cannot distill environmental law into coherent doctrine. In this Article we have identified patterns along other dimensions of environmental law—in factual context, policy tradeoffs, and values and interests—that together provide a useful framework for analyzing and understanding the process of environmental lawmaking. The relationship among these patterns can be represented with a conceptual diagram of environmental law, just as we earlier represented a conceptual diagram of a generic legal field:

²⁰⁵ Tarlock, *supra* note 10, at 223.

Figure 2: Conceptual Diagram of Environmental Law

Environmental problems share this conceptual pattern, but the substance of environmental problems—the specific tradeoffs and values at issue, and the legal doctrine that results from the application of those values and interests to those tradeoffs through lawmaking processes—depends heavily on specifics of context that vary from situation to situation and defy generalization.

G. Transcendence

Can environmental law answer Judge Easterbrook’s challenge to cyberlaw,²⁰⁶ to which Lawrence Lessig responded in his Harvard Law Review article,²⁰⁷ by yielding any distinctive yet transcendent insights? That is to say, does environmental law illuminate any “lessons for law generally”?²⁰⁸ I believe it does, and in particular that the idea of pervasive interrelatedness, which is so important to environmental law’s task of managing the natural environment, is a concept that has important and far-reaching implications for the law generally as well.

We have seen that pervasive interrelatedness is a fundamental characteristic of the environmental context, absolutely crucial to understanding environmental problems.²⁰⁹ Pervasive interrelatedness is distinctive to environmental law, but also transcendent, with implications throughout the law in ways that already are being recognized.

Pervasive interrelatedness is distinctive but not unique to environmental law. Environmental law is inherently closely linked to ecology, the science of the environment, by virtue of their mutual focus on the environment. Because ecology forms the basis for our understanding of the environment, environmental law must incorporate ecology’s insights if it has any hope of functioning as intended, regardless what that intent is. Accordingly, because pervasive interrelatedness is such a central feature of

²⁰⁶ Easterbrook, *supra* note 1.

²⁰⁷ Lessig, *supra* note 1.

²⁰⁸ *Id.* at 503.

²⁰⁹ See *supra* Part II.C.2.

the environment and a core precept of ecology, environmental law constantly faces the task of regulating in a context of pervasive interrelatedness. Environmental law both responds to pervasive interrelatedness and works through pervasively interrelated mechanisms. Pervasive interrelationships are unavoidable in environmental law, and environmental law grapples with pervasive interrelatedness to a greater extent than other areas of law. Indeed, western law has exhibited a strong tradition of attempting to limit the scope of the interrelationships it considers—for example, by limiting liability through the application of proximate cause—and environmental law can be seen in some respects as challenging that tradition and the assumption that the law can function effectively without considering a broader range of interrelationships.²¹⁰

Pervasive interrelatedness of the natural environment is distinctive to environmental law, but pervasive interrelatedness more generally is not unique to the natural environment. The experiences from environmental law's application in the pervasively interrelated context of the natural environment have important lessons for the application of law in other contexts where interrelatedness is present but not as obvious. For example, some of the theories and management techniques that environmental law and ecology have employed to deal with pervasive interrelatedness, such as adaptive management, complexity theory, and chaos theory,²¹¹ also show significant promise for application outside of environmental law.²¹² More

²¹⁰ See PLATER ET AL., *supra* note 155, at 5 (associating environmental law with “a desire for broadened accountings . . . of the full consequences of human decisionmaking”).

²¹¹ See Jonathan Z. Cannon, *Adaptive Management in Superfund: Thinking Like a Contaminated Site*, 13 N.Y.U. ENVTL. L.J. 561 (2005); Daniel A. Farber, *Probabilities Behaving Badly: Complexity Theory and Environmental Uncertainty*, 37 U.C. DAVIS L. REV. 145 (2003); Joshua Secunda & Lawrence F. Susskind, ‘Improving’ Project XI: *Helping Adaptive Management to Work Within EPA*, 17 UCLA J. ENVTL. L. & POL’Y 155 (1998-1999); Joy B. Zedler, *Adaptive Management of Coastal Ecosystems Designed to Support Endangered Species*, 24 ECOLOGY L.Q. 735 (1997).

²¹² See, e.g., Edward S. Adams et al., *At the End of Palsgraf, There Is Chaos: An Assessment of Proximate Cause in Light of Chaos Theory*, 59 U. PITT. L. REV. 507 (1998) (using chaos theory to analyze proximate causation in tort law); Daniel A. Farber, *Dollars and Sense: A “New Paradigm” for Campaign Finance Reform?*, 37 U. RICH. L. REV. 979, 995-1007 (2003) (advocating the application of adaptive management to campaign finance reform); Donald T. Hornstein, *Complexity Theory, Adaptation, and Administrative Law*, 54 DUKE L.J. 913 (2005) (applying complexity theory, in particular the concept of adaptation, to administrative law questions); Robert E. Scott, *Chaos Theory and the Justice Paradox*, 35 WM. & MARY L. REV. 329 (1993) (drawing on chaos theory to analyze the competing goals of accomplishing justice between the parties to a particular dispute and appropriately regulating the conduct of other parties likely to have similar disputes in the future); Guanghua Yu, *Chaos Theory and Path Dependence: The Takeover of Listed Companies*, 20 BANKING & FIN. L. REV. 217 (2005) (analyzing China's importation of an

generally, the concept of pervasive interrelatedness highlights how dividing the law into insular sub-fields obscures important interrelationships among different areas of the law and supports an agenda of aggressively pursuing integration of legal doctrine and theory across legal fields.

CONCLUSION

Environmental law cannot be reduced to a set of fundamental unifying legal principles. Rather, the dominant characteristic of environmental lawmaking has been ad hoc muddling through, and this is reflected in the complexity and diversity of environmental law doctrine. But this apparent doctrinal incoherence does not mean that environmental law lacks a conceptual core or that it is not a legal field. An area of law is a legal field if it exhibits patterns associated with common and distinctive features that predominate within the area to an extent that justifies studying the area as a distinct category of legal situations. We can cohere an area of law into a field by employing an organizational framework to highlight the distinctive patterns associated with the field.

Applying this methodology to environmental law, environmental law as a legal field is best understood conceptually as a category of situations that involve physical public resources subject to numerous, pervasively interrelated uses. Conflicts among these uses are inevitable, and create tradeoffs. These use-conflict tradeoffs define the choices facing environmental lawmaking institutions.

This use-conflict framework for environmental law is superior to other explanations of environmental law because it focuses on features that are common and distinctive to environmental law and that explain the fundamental difficulties of lawmaking in the environmental context. It does so, moreover, with a relatively value-neutral approach. Unlike explanations of environmental law that are tethered to environmentalism, market capitalism, or other ideological commitments, the use-conflict framework does not assume any particular baseline by which to judge alternative options and does not favor any particular use of the environment as normatively superior. By thus adopting a relatively value-neutral approach, the use-conflict framework facilitates critical analysis of a full range of alternatives.

English-style corporate takeover law as an application of chaos and path dependence theory).