

# ENVIRONMENTAL LAW AS A LEGAL FIELD: AN INQUIRY IN LEGAL TAXONOMY

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*This Article examines the classification of the law into legal fields, first by a general survey of legal taxonomy and then by specific examination of environmental law. We classify the law into fields to find and 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 trade-offs, 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 and analysis. Two core factual characteristics of environmental problems are, in combination, both common and distinct to environmental law: physical public resources and pervasive interrelatedness. Numerous and varied use demands are placed on environmental resources, thereby creating conflicts. These use conflicts define the policy trade-offs 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.*

INTRODUCTION .....	222
I. WHAT MAKES AN AREA OF LAW A LEGAL FIELD? .....	226
A. Legal Taxonomy and Legal Fields .....	226
B. The Allure—and Hazard—of Coherence .....	229
C. Threshold Methodological Decisions.....	236
1. <i>Defining the Field</i> .....	237
2. <i>The Dimensions of the Field</i> .....	238
3. <i>Descriptive Versus Prescriptive Taxonomy</i> .....	240
D. Minimum Requirements .....	241

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1. <i>Commonality</i> .....	242
2. <i>Distinctiveness</i> .....	243
E. Additional Attribute: Transcendence.....	245
F. Caveats and Clarifications.....	247
II. WHY IS ENVIRONMENTAL LAW A LEGAL FIELD? .....	251
A. Critique of Prior Approaches .....	252
1. <i>Dan Tarlock's Environmental Conceptualism</i> .....	252
2. <i>David Westbrook's Liberal Environmental</i> <i>Jurisprudence</i> .....	254
3. <i>Critique</i> .....	255
B. Defining Environmental Law .....	259
C. Factual Context.....	264
1. <i>Physical Public Resources</i> .....	264
2. <i>Pervasive Interrelatedness</i> .....	268
3. <i>Secondary Characteristics</i> .....	270
4. <i>Other Characteristics</i> .....	272
D. Policy Trade-offs .....	273
E. Values and Interests .....	276
F. Legal Doctrine .....	277
G. Advantages .....	279
H. Transcendence .....	280
CONCLUSION .....	282

## INTRODUCTION

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”?<sup>1</sup> What do we aim to accomplish with legal taxonomy, by classifying the law into more specific subdisciplines? 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?

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<sup>1</sup> 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. See Darian M. Ibrahim & D. Gordon Smith, *Entrepreneurs on Horseback: Reflections on the Organization of Law*, 50 ARIZ. L. REV. 71, 71–72 (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 (“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, Commentary, *The Law of the Horse: What Cyberlaw Might Teach*, 113 HARV. L. REV. 501, 501 (1999).

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. It has been roughly forty years since the birth of modern environmental law in the United States.<sup>2</sup> Since then, environmental law has matured considerably and has reached a certain level of stability.<sup>3</sup> There seems little doubt that environmental law is now a permanent fixture in the law. Nevertheless, 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 a marked frustration with environmental law's incoherence has arisen. Environmental law is bemoaned, even among its advocates, as highly fragmented<sup>4</sup> and unduly complicated.<sup>5</sup> There is a strong sense that environmental law needs an overall vision or descriptive framework that works to cohere the subject matter.<sup>6</sup>

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<sup>2</sup> 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 (2006), 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 the 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").

<sup>3</sup> See James L. Huffman, *The Past and Future of Environmental Law*, 30 ENVTL. L. 23, 23 (2000).

<sup>4</sup> 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, 11–12 (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 Fisher et al., *Maturity and Methodology: Starting a Debate About Environmental Law Scholarship*, 21 J. ENVTL. L. 213, 219 (2009); Elizabeth Glass Geltman & Andrew E. Skrobback, *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).

<sup>5</sup> See, e.g., DANIEL A. FARBER, *ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD* 1 (1999); Peter Manus, *Our Environmental Rebels: An Average American Law Professor's Perspective on Environmental Advocacy and the Law*, 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. REP. 10,251, 10,251 (1989); David A. Westbrook, *Liberal Environmental Jurisprudence*, 27 U.C. DAVIS L. REV. 619, 621, 624–25 (1994).

<sup>6</sup> See Farber, *supra* note 4, at 387 ("But without having any overall vision of the field, it is unclear how either agencies or courts can produce a halfway coherent approach to environmental law."); Fisher et al., *supra* note 4, at 219 ("[E]nvironmental law, as a subject, . . . has no single guiding logic, no overarching doctrinal framework or no 'constitutional' grounding."); 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.").

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.<sup>7</sup> Legal classifications enable consistency by designating categories of similar situations to which a common set of principles applies. The category assigned to a situation thus may determine how the law applies to the situation.<sup>8</sup> The law works through categories, and one of the more important types of categories employed in the law is the legal field. 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.<sup>9</sup> 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

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<sup>7</sup> See, e.g., *Ark. Elec. Coop. Corp. v. Ark. Pub. Serv. Comm'n*, 461 U.S. 375, 391 (1983); GUIDO CALABRESI, *THE COSTS OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* 293–94 (1970).

<sup>8</sup> 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 Nat'l Realty Corp.*, 428 F.2d 1071, 1074–75, 1077 (D.C. Cir. 1970) (rejecting the application of “old common law doctrines” of “real property transactions” and relying on contract principles to hold that a warranty of habitability should be applied to urban residential leases); *Sommer v. Kridel*, 378 A.2d 767, 771–73 (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 if the landlord attempts to recover rent due from a defaulting tenant).

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

stymie environmental lawmaking, but it may well display those conflicts and difficulties in a new light and help to frame the decisions facing legislatures, agencies, and courts and thereby facilitate more effective lawmaking. A descriptive analytical framework can, moreover, function as a sort of meta-framework for evaluating alternative normative approaches to a field.

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 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.<sup>10</sup> 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 trade-offs, 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 transsubstantive implications that extend beyond the field.

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 and analysis. Part II begins by examining and critiquing two prominent prior efforts to explain environmental law as a coherent legal field.<sup>11</sup> 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 is common and distinctive to environmental law.

Part II then proceeds to set forth a superior organizational framework for environmental law, a framework 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 and varied use demands are placed on these environmental resources, thereby creating conflicts. These use conflicts define the policy trade-offs that frame environmental lawmaking and form the basis for a *use-conflict framework* for conceptualizing environmental

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<sup>10</sup> See *infra* note 19 and accompanying text.

<sup>11</sup> A. Dan Tarlock, *Is There a There There in Environmental Law?*, 19 J. LAND USE & ENVTL. L. 213 (2004); Westbrook, *supra* note 5.

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 results 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, 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. This framework also provides a relatively value-neutral structure by which to evaluate alternative policy options or alternative normative approaches.

## 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 classification will facilitate an improved understanding of the law.<sup>12</sup> As Emily Sherwin has observed, significant benefits can result from a useful categorization of the law:

[O]rganisation 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

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<sup>12</sup> 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 (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 I (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.”).

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 law. 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.<sup>13</sup>

Not every legal categorization, however, necessarily produces such benefits, and there are innumerable 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 taxonomist, 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 that Sherwin notes.

Classification systems operate by employing organizational frameworks to differentiate among the constituent elements being organized, thus determining which elements fall within which categories. A classification is useful if the organizational framework reflects patterns that reveal something important to us about the materials being classified.<sup>14</sup> 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.<sup>15</sup>

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<sup>13</sup> 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) (footnotes omitted); see also Mattei, *supra* note 12, at 6 (“Taxonomy plays an important role in transferring knowledge from one area of the law to another.”); Smith, *supra* note 12, 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 decided, or about the meaning of a particular rule, they are in large part arguing about how to classify the case or the rule.”).

<sup>14</sup> See 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?”).

<sup>15</sup> 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

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.<sup>16</sup> 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.

Not all classifications of the law and legal taxonomy look to categorize the law into legal fields. West Publishing Company's Key Number System, for example, sorts legal issues into more than 400 alphabetically arranged topic fields.<sup>17</sup> 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.<sup>18</sup>

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.<sup>19</sup> The usefulness of the field varies depending on how well that pattern explains the vari-

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an organizing principle to differentiate among the elements of the classification." (footnotes omitted)).

<sup>16</sup> Cf. 1 ENGLISH PRIVATE LAW, *supra* note 12, at xliii (noting that "different classifications simply answer different questions").

<sup>17</sup> See WEST PUBLISHING CORP., THE WEST KEY NUMBER SYSTEM: ALPHABETICAL LIST OF DIGEST TOPICS 1 (2009), available at <http://west.thomson.com/documentation/westlaw/wlawdoc/wlres/keynmb06.pdf>; see also Berring, *supra* note 12, 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").

<sup>18</sup> See, e.g., *Goodman v. Lukens Steel Co.*, 482 U.S. 656, 660–62 (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); *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); *Hydro Conduit Corp. v. Kemble*, 793 P.2d 855, 859–61 (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).

<sup>19</sup> 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 (if any) of health law").

ous situations that the field encompasses. This explanatory power,<sup>20</sup> 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 being equal, the simpler the pattern is, the more powerful the field is as a means of explaining the situations it includes.

Third, a field's explanatory power depends on the extent to which the pattern predominates within the field; that is, whether the characteristics that exhibit 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—that is, 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 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 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

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<sup>20</sup> I use the term "explanatory power" here to mean broadly the power to explain, not just predictive capability, as it sometimes is used. See, e.g., Anatol Rapoport, *Explanatory Power and Explanatory Appeal of Theories*, 24 *SYNTHESE* 321, 322 (1972). Explanatory power as I use the term includes, for example, what Anatol Rapoport called *explanatory appeal*, which he defined as "'integrative potential', the extent to which many apparently unrelated events are seen in the light of the theory to be related." *Id.* at 324.

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.”<sup>21</sup>

Coherence thus exerts a strong attractive force for the legal profession, inducing what Theodore Ruger has called a “coherence impulse.”<sup>22</sup> Coherence has “dramatic potential for explanation and illumination”<sup>23</sup> and “promises a vision of law that is unified, predictable and rational.”<sup>24</sup> As a result, coherent fields are easier to learn, practice, decide, and theorize.<sup>25</sup> Not coincidentally, the archetypal common-law fields that the legal profession intuitively regards as ideal legal fields—fields that form the foundation for law school curricula—are often characterized by strongly coherent, even essentialist, models.<sup>26</sup> For newer areas of law, coherence is perceived as a ticket to legitimacy as a legal field.<sup>27</sup> As a result, much of the work of legal

<sup>21</sup> Ann Althouse, *Late Night Confessions in the Hart and Wechsler Hotel*, 47 VAND. L. REV. 993, 1001 (1994).

<sup>22</sup> Theodore W. Ruger, *Health Law’s Coherence Anxiety*, 96 GEO. L.J. 625, 628 (2008).

<sup>23</sup> *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”); *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.”).

<sup>24</sup> Chaim Saiman, *Restating Restitution: A Case of Contemporary Common Law Conceptualism*, 52 VILL. L. REV. 487, 511 (2007); *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”).

<sup>25</sup> On the other hand, the legal profession may in some respects have an interest in maintaining at least some inscrutability in the law. *See* John Earnhardt, *Cisco General Counsel on State of Technology in the Law*, Cisco: The Platform (Jan. 25, 2007, 4:13 PM), [http://blogs.cisco.com/news/comments/cisco\\_general\\_counsel\\_on\\_state\\_of\\_technology\\_in\\_the\\_law/](http://blogs.cisco.com/news/comments/cisco_general_counsel_on_state_of_technology_in_the_law/) (noting that Richard Susskind observed that when “law gets standardized, it can be outsourced, co-sourced, integrated, aggregated, syndicated and shared,” empowering clients vis-à-vis their attorneys).

<sup>26</sup> *See, e.g.*, John Fabian Witt, *Toward a New History of American Accident Law: Classical Tort Law and the Cooperative First-Party Insurance Movement*, 114 HARV. L. REV. 690, 706 (2001) (noting that the negligence principle in torts “satisfied the conceptualist desire to unify and systematize tort law at an exceedingly high level of generality around a single abstract principle”); Randy E. Barnett, *The Richness of Contract Theory*, 97 MICH. L. REV. 1413, 1414 (1999) (reviewing ROBERT A. HILLMAN, *THE RICHNESS OF CONTRACT LAW: AN ANALYSIS AND CRITIQUE OF CONTEMPORARY THEORIES OF CONTRACT LAW* (1997)) (noting the rise in the 1970s and 1980s of contracts scholarship “in search of unifying theories of legal doctrine”).

<sup>27</sup> *See* Ruger, *supra* note 22, at 630 (“[T]he 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, *Media Law in New Zealand*, 36 VICTORIA U. WELLINGTON L. REV. 665, 665 (2005) (book review) (tying recognition of the coherence of media law to “[t]he emergence of media law as a legitimate field of study”); Saiman, *supra* note 24, 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.”).

taxonomists has been to develop frameworks that bring coherence to particular areas 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.<sup>28</sup>

Not all areas of law, however, are easily susceptible to a coherent account; some areas are just less coherent.<sup>29</sup> An area of law's coherence depends on, among other things, the extent to which it exhibits strong, recognizable patterns,<sup>30</sup> 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 being 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. 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.<sup>31</sup> 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.<sup>32</sup> Development also brought a greater diversity of uses making claims to water resources, including industrial uses and municipal drinking-water systems.<sup>33</sup> In addition, increased environmental consciousness led to greater recognition of so-called "instream uses" that benefit the natural environment, such as fish populations.<sup>34</sup> Together, the diversification of the

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<sup>28</sup> See *supra* text following note 20 (identifying the strength, simplicity, and predominance of a field's pattern as some of the factors that determine a field's explanatory power).

<sup>29</sup> See, e.g., Saiman, *supra* note 24, at 518 (listing the field of sports law, among others, as one for which a central conceptual principle does not exist but that still is an emerging field of law).

<sup>30</sup> See *supra* text following note 20.

<sup>31</sup> 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).

<sup>32</sup> Tarlock, *supra* note 31.

<sup>33</sup> See *id.*

<sup>34</sup> 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.-NW. J. ENVTL. L. &

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 the field more complicated and less coherent.

Third, centralized and well-coordinated lawmaking processes are more likely to produce law that follows a strong pattern; 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 decision making 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 a pattern in the law and then to follow that pattern.<sup>35</sup> 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

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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.”).

<sup>35</sup> See, e.g., EDWARD H. LEVI, AN INTRODUCTION TO LEGAL REASONING 1 (1949) (describing the three-step process of legal reasoning based on precedent: “similarity is seen between cases; next the rule of law inherent in the first case is announced; then the rule of law is made applicable to the second case”); 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 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*, 876 N.E.2d 1189, 1195 (N.Y. 2007) (citing *Temple Cmty. Hosp. v. Super. Ct.*, 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); *State v. Lackey*, 110 P.3d 512, 515 (N.M. Ct. App. 2005) (citing *State v. Wixom*, 947 P.2d 1000, 1002 (Idaho 1997), and *State 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 defendants). Of course, this norm does not mean that judge-made law is entirely consistent. Different judges may read precedent differently or view facts differently, thereby reaching different decisions in similar cases. See 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., *Phila. 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. Comm’r*, 599 F.2d 44 (2d Cir. 1979), and *Miller v. United States*, 784 F.2d 728 (6th Cir. 1986) (per curiam)). Nevertheless, the role of precedent-based reasoning in judicial decision making undeniably exerts an overall force that favors coherence.

among its own set of competing interests exerting pressures on the legislators.<sup>36</sup> 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.<sup>37</sup>

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.<sup>38</sup> An organizational framework that

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<sup>36</sup> See, e.g., LAZARUS, *supra* note 2, at 67–124 (discussing the political history of the major federal environmental statutes).

<sup>37</sup> Cf. William N. Eskridge, Jr., *Overruling Statutory Precedents*, 76 GEO. L.J. 1361, 1408 (1988) (attributing to political scientist John Kingdon the argument that “Congress is an ‘organized anarchy’ whose deliberations are best characterized by the theory of ‘garbage can decisionmaking.’” (quoting J. KINGDON, *AGENDAS, ALTERNATIVES, AND PUBLIC POLICIES* 47–73 (1984))). 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 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 closely correlated.

Other factors, however, may give agencies incentives 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, the Environmental Protection Agency 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, 17,768–69 (Apr. 7, 2005). Moreover, the standards by which courts review agency rules encourage consistency among agency decisions. See, e.g., *Westar Energy, Inc. v. Fed. 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.

<sup>38</sup> See, e.g., Berring, *supra* note 24, at 15–16 (noting that William Blackstone’s *Commentaries* “struggled to place the common law of England into a rational narrative structure” but that Blackstone “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*

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, as they are forged by numerous decision makers acting in diverse contexts, areas of law seldom live up to the ideal of coherence.<sup>39</sup> Thinking of a body of law as a coherent legal field worthy of particularized study is analogous to putting on blinders and 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.<sup>40</sup> Fields of law focus attention on particular aspects of the law only by intentionally obscuring other aspects.<sup>41</sup> The quest for coherence thus is prone to breeding essentialism and reductionism.<sup>42</sup> 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.<sup>43</sup> Applying a reduc-

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*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” (footnote omitted)).

<sup>39</sup> 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.” (footnotes omitted)).

<sup>40</sup> 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. LIBR. J. 229, 229–30 (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 salient 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 12, at 311 n.13.

<sup>41</sup> Cf. BOWKER & STAR, *supra* note 12, 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 entails “deciding what will be visible or invisible within the system”); Dabney, *supra* note 40, at 233 (noting that a classification necessarily implies “that some aspects of the situation are more important than others”).

<sup>42</sup> See Ruger, *supra* note 22, at 629–30 (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”).

<sup>43</sup> See Benjamin C. Zipursky, *Civil Recourse, Not Corrective Justice*, 91 GEO. L.J. 695, 709–33 (2003).

tionist framework to achieve coherence necessarily oversimplifies the law, disregarding outcomes that do not match the coherent ideal.<sup>44</sup> 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, seeing what works and what does not.<sup>45</sup> 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,<sup>46</sup> we may lose sight of the field's corrective-justice aspects.<sup>47</sup>

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.<sup>48</sup> For example, if substantive doctrine within a field were to favor an outcome on which there was no 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.<sup>49</sup>

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<sup>44</sup> See Feinman, *supra* note 15, at 691–92 (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. Simon, *supra* note 39, at 513 (explaining “coherence-based reasoning,” a theory of cognitive psychology, which “posits that the mind shuns cognitively complex and difficult decision tasks by reconstructing them into easy ones”).

<sup>45</sup> See RICHARD A. 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 . . .”).

<sup>46</sup> See RESTATEMENT (SECOND) OF TORTS §§ 291–95 (1965).

<sup>47</sup> See Catharine Pierce Wells, *Tort Law as Corrective Justice: A Pragmatic Justification for Jury Adjudication*, 88 *MICH. L. REV.* 2348, 2350–51 (1990).

<sup>48</sup> See Schuck, *supra* note 37, at 29.

<sup>49</sup> See Richard H. Fallon, Jr., *The Linkage Between Justiciability and Remedies—and Their Connections to Substantive Rights*, 92 *VA. L. REV.* 633, 637 (2006).

The drawbacks of allowing some incoherence in a field, moreover, can easily be overstated. The 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.”<sup>50</sup> Indeed, incoherence is itself worthy of study. Attempting to determine why the law treats apparently similar situations differently is an important endeavor in understanding the law. Only by grouping materials together in a field does incoherence become identifiable and susceptible to studied examination.<sup>51</sup>

In sum, 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.<sup>52</sup> 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.<sup>53</sup> 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 trade-offs, values and interests, and legal doctrine. An organizational framework for a legal field can apply to any one or a 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.

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<sup>50</sup> Ruger, *supra* note 22, at 627; *see also* Elhauge, *supra* note 1, at 367 (contending that a field of law does not require agreement about the contours, principles, or policy goals of the field); Mark A. Hall, *The History and Future of Health Care Law: An Essentialist View*, 41 WAKE FOREST L. REV. 347, 356 (2006) (“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 22, 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 abstraction and generalization.”); Silberman, *supra* note 12, at 1429 (arguing that “a ‘field’ is not necessarily in need of a ‘big think’ unifying theory”).

<sup>51</sup> *See* Ruger, *supra* note 22, at 646–47 (noting that legal differences within a field facilitate comparative analysis).

<sup>52</sup> *See* Silberman, *supra* note 12, at 1429 (arguing that an area of law “merits autonomous treatment” if it functions as “an interconnected whole”).

<sup>53</sup> Indeed, even if we did not make such decisions deliberately, adopting an organizational framework for a field implicitly would decide certain threshold questions.

### 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 construct an organizational framework by which to analyze a legal field, we will must 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 field with an organizational framework, but definition is the first step toward a framework.<sup>54</sup>

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].”<sup>55</sup> A good definition should yield a coherent concept or concepts.<sup>56</sup> Moreover, the concepts embodied in the definition must reflect the concepts that are analytically helpful in understanding the field.<sup>57</sup> 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.<sup>58</sup>

There are numerous ways to define a legal field. A legal field can be defined on the basis of, among other things, a substantive topic (for example, environmental law, labor law, tort law); an aspect of the legal process (for example, statutory interpretation, civil procedure, criminal procedure, remedies); an institutional actor (for example,

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<sup>54</sup> 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—that is, the rationale for the usefulness of the field as a classification.

<sup>55</sup> Sherwin, *supra* note 13, at 110.

<sup>56</sup> See Daniel J. Solove, *Conceptualizing Privacy*, 90 CAL. L. REV. 1087, 1096 (2002) (“Most often, theorists assess a conception by determining whether it is coherent—that is, whether it is logical and consistent.”).

<sup>57</sup> The task of identifying the concepts that are analytically helpful in understanding the field is addressed *infra* in Part I.C.2.

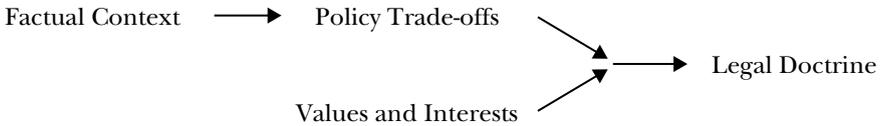
<sup>58</sup> Cf. Mark P. Gergen, *A Thoroughly Modern Theory of Restitution*, 84 TEX. L. REV. 173, 174 n.8 (2005) (book review) (contending that to make restitution a coherent field, Peter Birks “had to lop off one of its most memorable parts—restitution to reward rescue—and do some conceptual legerdemain 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))).

administrative law, federal courts); or a transsubstantive methodological approach (for example, law and economics, comparative law).

## 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 trade-offs, values and interests, and legal doctrine.<sup>59</sup> 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.<sup>60</sup> These factual characteristics create certain *policy trade-offs*, which dictate the range of options available to lawmaking institutions such as courts, legislatures, executive branch agencies, and the public. The lawmaking institutions apply *values and interests* to choose among the available options dictated by the trade-offs. *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 trade-offs. The following figure illustrates the relationship among the underlying constitutive dimensions—factual context, policy trade-offs, values and interests, and legal doctrine:

FIGURE 1: CONCEPTUAL DIAGRAM OF GENERIC LEGAL FIELD



The relationship among the underlying constitutive dimensions of the law is not just unidirectional from factual context to legal doctrine; the relationship runs in the opposite direction as well. Because

<sup>59</sup> Some aspects of the conceptual model of legal fields developed in this Article do not apply well to fields of law, such as law and economics, that are organized around transsubstantive methodological approaches. *See infra* text accompanying note 99.

<sup>60</sup> 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 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.<sup>61</sup> Elements of factual context thus matter if, and only if, they ultimately bear on the values and interests that the decision-making institution applies to resolve questions within the area. A factual characteristic is relevant or significant only insofar as it gives rise to a policy trade-off that matters, and a trade-off matters only if the decision-making institution cares about it. For example, a trade-off between making water available for irrigating agriculture or for sustaining aquatic wildlife is significant only insofar as the decision-making 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 trade-offs that actually limit legal choice.<sup>62</sup>

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 reflects analyses that characterize legal fields based on factual context,<sup>63</sup> policy trade-offs,<sup>64</sup> values and interests,<sup>65</sup> or legal doctrine.<sup>66</sup>

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<sup>61</sup> Cf. Sherwin, *supra* note 13, 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.”).

<sup>62</sup> See *infra* note 75 and accompanying text (arguing that the common features that cohere a field must be legally relevant).

<sup>63</sup> Cf. Feinman, *supra* note 15, at 679–80 (defining factual classification, for which “the factual similarities among the situations governed by the doctrines within the system provide both the organization and the identifying criteria for the category”).

<sup>64</sup> See, e.g., Abraham Bell & Gideon Parchomovsky, *A Theory of Property*, 90 CORNELL L. REV. 531, 615 (2005) (presenting a property-law framework that the authors claim “illuminates the tradeoffs involved in the field”); Lawrence O. Gostin, *A Theory and Definition of Public Health Law*, 10 J. HEALTH CARE L. & POL’Y 1, 4, 12 (2007) (noting that “[t]he field of public health law presents complex tradeoffs,” including “[a]chieving a just balance between the powers and duties of the state to defend and advance the public’s health and constitutionally protected rights”); Theodore W. Ruger, *The United States Supreme Court and Health Law: The Year in Review*, 33 J.L. MED. & ETHICS 611, 611 (2005) (“Problems in the field of health law often force tradeoffs between uniformity and particularity in health care decision-making.”).

<sup>65</sup> See, e.g., Gostin, *supra* note 64, at 12 (identifying “the quintessential values of public health law—government power and duty, coercion and limits on state power, government’s partners in the ‘public health system,’ the population focus, communities and civic participation, the prevention orientation, and social justice”); Ruger, *supra* note 22, at 635 (noting that fields could be analyzed by reference to recurring “primary interests,” such as the right to bodily autonomy in health law).

<sup>66</sup> See, e.g., F. Scott Kieff & Troy A. Paredes, *The Basics Matter: At the Periphery of Intellectual Property*, 73 GEO. WASH. L. REV. 174, 183 (2004) (“Antitrust law, IP law, and the general law of property and contracts are each well-established disciplines and bodies of law. . . . [W]e believe that general agreement can be found on the broad positive legal frameworks

Thus, when we attempt to characterize an area of law, we 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 operates in an area, there may not be a consistent set of policy trade-offs that encompasses decision making. Or, even if a stable mix of values and interests (and therefore a consistent set of policy trade-offs) 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, 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.<sup>67</sup> 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 taxonomist 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-

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of each field and the core principles that undergird them.”); Robert A. Williams, Jr., *Columbus's Legacy: Law as an Instrument of Racial Discrimination Against Indigenous Peoples' Rights of Self-Determination*, 8 ARIZ. J. INT'L & COMP. L. 51, 67 (1991) (“Practitioners and students of United States Federal Indian Law are all intimately familiar with the three core, fundamental principles in the field from which all Supreme Court Indian law jurisprudence extends: the Congressional Plenary Power doctrine . . . .”); 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 Owen Fiss questioning whether the founders of the field of “Law of Democracy” have identified “an ‘autonomous set of principles’ governing election law that would properly constitute a law of democracy”).

<sup>67</sup> Cf. Sherwin, *supra* note 13, at 105–08 (noting that legal taxonomies can classify either posited legal rules, ideal legal rules, or “semi-ideal rules attributed to legal decisions”). Although here I equate prescriptive with normative, see, for example, James K. Hammitt, Response, *Saving Lives: Benefit-Cost Analysis and Distribution*, 157 U. PA. L. REV. PENNUMBRA 189, 195 (2009), <http://www.pennumbra.com/responses/03-2009/Hammitt.pdf>, a distinction sometimes is drawn between the two, see, for example, Adrian Vermeule, *Connecting Positive and Normative Legal Theory*, 10 U. PA. J. CONST. L. 387, 390 (2008) (distinguishing normative “claims about what ends it would be good to adopt” and prescriptive “claims about the best means to adopt, given stipulated ends”).

evident from the situations themselves, or the taxonomist or other analyst may assign the features to situations.<sup>68</sup> Prescriptive taxonomy tends to favor classifications that look more to the underlying functions ascribed to such characteristics.<sup>69</sup>

In reality, most legal taxonomies to some extent combine descriptive and prescriptive elements.<sup>70</sup> 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.<sup>71</sup> 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.<sup>72</sup> This is true to a greater extent than in the natural sciences, where the taxonomist is much more than just an observer.<sup>73</sup> In the law, the taxonomist 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

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<sup>68</sup> See Sherwin, *supra* note 13, at 105–07.

<sup>69</sup> See *id.* at 106 (noting that, for prescriptive taxonomy, legal categories—as well as the proposed legal rules themselves—should reflect some “external criterion of legal goodness—moral, economic or otherwise”).

<sup>70</sup> See *id.* at 111 (“[T]he same scholarly interests . . . that lead a taxonomer to attempt to formulate ideal rules or extrapolate best-they-can-be legal rules . . . will also tend to attract him . . . to a normative framework . . .”).

<sup>71</sup> See, e.g., *id.* at 121–22 (explaining that even Birks, a firm believer in providing formal descriptive categories, “appear[s] to stray into normative territory”).

<sup>72</sup> See, e.g., sources cited *supra* note 18 (citing cases in which classification as a tort or contract is determinative as to what legal rule applies).

<sup>73</sup> See David Luban, *What’s Pragmatic About Legal Pragmatism?*, 18 CARDOZO L. REV. 43, 69 (1996) (“The crucial difference between law and science is that scientific data are measured physical quantities, not the holdings of other scientists.”); Geoffrey Samuel, *English Private Law: Old and New Thinking in the Taxonomy Debate*, 24 OXFORD J. LEGAL STUD. 335, 362 (2004) (“Law is a social science rather than a natural science and the object of its science is very different. One is not categorizing objects that are empirical and on the whole lend themselves to classification. One is trying to classify objects that are fluid and whose empirical nature can be perceived only through schemes and paradigms . . .”).

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 identification process calls into question the validity and usefulness of the organizational framework and of the legal field itself.

### 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 that the field encompasses. Commonalities 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 trade-offs, the values and interests, or the legal doctrine.<sup>74</sup>

Moreover, not just any commonalities count. As to the first two dimensions—factual context and policy trade-offs—the commonalities must be legally relevant; that is, they must make a difference in how the law applies.<sup>75</sup> Only when the common characteristics are legally relevant do 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. 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,<sup>76</sup> 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. Indeed, the common element of the horse is legally irrelevant.<sup>77</sup>

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<sup>74</sup> See *supra* Part I.C.2.

<sup>75</sup> See Feinman, *supra* note 15, at 680 (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 50, 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 74–75 (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 12, 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”).

<sup>76</sup> See *supra* note 1 and accompanying text.

<sup>77</sup> Usually the commonality is a description 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 doc-

Commentators have criticized the presumption that a legal concept must be defined by reference to a single definitional set of characteristics.<sup>78</sup> These critiques, in turn, call into question whether strict commonality is necessary 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.”<sup>79</sup> 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.<sup>80</sup> 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 in 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.<sup>81</sup> 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.<sup>82</sup> For

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trine. The field of cyberlaw definitely required the existence of cyberspace, but the field 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.

<sup>78</sup> 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 56, at 1095–99.

<sup>79</sup> Solove, *supra* note 56, at 1095–96.

<sup>80</sup> *Id.* at 1095–98 (internal quotation marks omitted); see also Solove, *supra* note 12, at 485–86 (noting that certain “activities [can] differ significantly yet share many commonalities”).

<sup>81</sup> See Easterbrook, *supra* note 1, at 207–08 (“Teaching 100 percent of the cases on people kicked by horses will not convey the law of torts very well.”).

<sup>82</sup> Cf. Dabney, *supra* note 40, 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).

example, an overemphasis on classifying statutory laws into topic areas—environmental, labor, health care, tax, etc.—may obscure the importance of transsubstantive 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, there must be some reason not to look to some broader set of materials.

Distinctiveness—the idea that some features of a field are distinct to that field and not present in other fields—provides just such a justification. Thus, an area of law unified by a common, legally relevant feature (pattern) is not a legal field unless the organizing feature is distinctive to the area.<sup>83</sup> Distinctiveness can arise directly from unique features of the field or from the unique interplay of otherwise nonunique features.<sup>84</sup>

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. This may be 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, the defining features as a set must be distinctive. For example, some features are common to both labor law and contract

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<sup>83</sup> 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, e.g., W. Burlette Carter, *Introduction: What Makes a "Field" a Field?*, 1 VA. J. SPORTS & L. 235, 244 (1999) (contending that "a field becomes a field" when "we shape it as such, defining the concepts and legal norms 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 50, 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?*, Apr. 1991, at § D, 1991 WL 330761 ("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." (footnotes omitted)).

<sup>84</sup> See Ibrahim & Smith, *supra* note 1, at 85.

law—after all, the employer–employee relationship is fundamentally contractual—but that does not mean that labor and contract law are not each separate, legitimate legal fields.

Moreover, distinctiveness does not necessarily equate with uniqueness. Just as strict commonality may be unnecessary,<sup>85</sup> strict uniqueness also may be unnecessary. A legal field may exist where the field’s set of defining features is unified by sufficient similarity and distinctiveness—even if not perfect uniqueness—to merit unified consideration.<sup>86</sup>

#### E. Additional Attribute: Transcendence

In addition to commonality and distinctiveness, Frank Easterbrook has argued that fields of legal study also should have transsubstantive implications—that is, that legal fields should “illuminate the entire law” and teach “general rules.”<sup>87</sup> Easterbrook expressed this position specifically as an objection to the existence of cyberlaw as a legal field.<sup>88</sup> 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.<sup>89</sup> 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.”<sup>90</sup> On the other hand, these insights are not limited to cyberlaw: they illustrate “general concerns, not particular [ones]” and illuminate “lessons for law generally.”<sup>91</sup> Together, Lessig argues, this combination of distinctiveness and transcendence “suggest[s] a reason to study cyberspace law for reasons beyond the particulars of cyberspace.”<sup>92</sup> Easterbrook’s and Lessig’s comments on the benefits of transcendence highlight an ad-

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<sup>85</sup> See *supra* notes 78–80 and accompanying text.

<sup>86</sup> Cf. Feinman, *supra* note 15, 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.”).

<sup>87</sup> Easterbrook, *supra* note 1, at 207. Although Easterbrook expressed a preference for principles that apply to “the entire law,” perhaps stemming from his allegiance to a transsubstantive law-and-economics framework, he seemed to recognize that at least some of the general or unifying principles he sought 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, was clearly toward drawing the most expansive categories possible.

<sup>88</sup> E.g., *id.* 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”).

<sup>89</sup> Lessig, *supra* note 1, at 502–03.

<sup>90</sup> *Id.* at 502.

<sup>91</sup> *Id.* at 503.

<sup>92</sup> *Id.*

ditional, potentially important characteristic of a legal field: a transcendence that justifies studying the field in order to understand better the law in general.<sup>93</sup>

Having 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, many similarities exist between the factual contexts 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.<sup>94</sup> 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 analogue 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 necessary to legitimate a field of legal study.<sup>95</sup> If, for example, studying environmental law helps us to understand environmental law, this fact suffices to justify the study of environmental law, even if studying environmental law does not also help us to understand law that is not

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<sup>93</sup> See Paul L. Caron, *Tax Myopia, or Mamas Don't Let Your Babies Grow Up to Be Tax Lawyers*, 13 VA. TAX REV. 517, 541–45 (1994) (praising academic authors who “undertake tax-specific work that generates insights into the process of statutory construction generally” (footnote omitted) (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))).

<sup>94</sup> See, e.g., 29 C.F.R. § 1910.1000 (2008) (regulating occupational exposure to mercury in air); 40 C.F.R. § 61.50–.56 (2008) (regulating environmental emissions of mercury into air).

<sup>95</sup> 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.”).

environmental.<sup>96</sup> Regardless of whether the transcendence criterion is necessary, however, it is clearly an additional benefit that enhances the value of studying the field.<sup>97</sup>

#### 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. I have also declined to analyze how choices among institutions and regulatory tools affect the substance of the law. For example, there may be systematic differences among 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.<sup>98</sup> It 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 transsubstantive methodological approaches.<sup>99</sup> Such methodological fields, because they are transsubstantive, have no particular corpus of law to which they apply and therefore have none of the underlying constitutive dimensions I

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<sup>96</sup> Indeed, Lessig accepts Easterbrook's challenge to satisfy his transcendence test without conceding that cyberspace must satisfy the test to achieve legitimacy. See Lessig, *supra* note 1, at 502–03.

<sup>97</sup> 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 15, at 671. Feinman’s point is analogous to the aforementioned concern that the excessive pursuit of coherence may lead us to overlook meaningful variations in the law. See *supra* notes 38–44 and accompanying text.

<sup>98</sup> See Michael Lockwood, *Humans Valuing Nature: Synthesizing Insights from Philosophy, Psychology and Economics*, 8 ENVTL. VALUES 381, 395–96 (1999) (noting that institutional context influences how values are expressed).

<sup>99</sup> See *supra* text following note 58 (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 transsubstantive methodological approach (for example, law and economics or comparative law)).

have identified here. As a result, methodological fields cannot be unified by an organizational framework based on 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.<sup>100</sup> The transsubstantive 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 transsubstantiveness, methodological fields also necessarily exhibit transcendence. Methodological fields differ 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 that of determining which 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 the field meets minimum standards of commonality and distinctiveness. Even among fields that exhibit a high degree of commonality and distinctiveness, there still may be tremendous variation in the strength of organization of a field, as measured by the explanatory power of the field's organizational framework.<sup>101</sup> 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.<sup>102</sup> 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, the question becomes: 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 or subcategory of cases that are either not shared

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<sup>100</sup> See Lewis A. Kornhauser, *The Great Image of Authority*, 36 STAN. L. REV. 349, 353–55 (1984) (“Every article in law and economics adheres, explicitly or implicitly, to one or more of four logically distinct theses: Economic theory provides a good theory for predicting how people will behave under rules of law (the behavioral claim). . . . The law ought to be efficient (the normative claim). . . . The (common) law is in fact efficient (the positive claim). . . . The common law tends to select efficient rules, although not every rule will, at any given time, be efficient (the genetic claim).” (emphasis omitted)).

<sup>101</sup> See, e.g., Mark A. Hall & Carl E. Schneider, *Where Is the “There” in Health Law? Can It Become a Coherent Field?*, 14 HEALTH MATRIX 101, 103 (2004) (arguing that “[m]edical law deals with medical activities in too many settings” to yield a “grand organizing principle”).

<sup>102</sup> See *supra* text following note 20.

in common in the field or not distinctive to the field? Thus, one might posit that a very broad legal field, such as public law, might have so much variety that its common and distinctive organizing framework offers only a rather weak understanding of any particular problem or case that arises within the field.<sup>103</sup> 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.<sup>104</sup>

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.<sup>105</sup>

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 legal areas organized only on the basis of factual commonality may still have some utility for some purposes. Law firms, for example, may form practice groups to market themselves to a particular industry—for example, a chemical practice group staffed with lawyers familiar with the technical aspects and legal requirements of the chemical industry.<sup>106</sup> Law schools may teach classes addressing subject matters that attract particularly strong student interest and then use the course to illustrate cross-cutting legal issues, rather than teach a par-

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<sup>103</sup> *But cf.* Jack Goldsmith & Daryl Levinson, *Law for States: International Law, Constitutional Law, Public Law*, 122 HARV. L. REV. 1791, 1865 (2009) (arguing that “constitutional and international law, proceeding along parallel tracks, have dealt with a common set of practical and theoretical problems . . . with similar analytic tools, and they have converged on a remarkably similar range of solutions” and expressing the hope that “the commonalities of their respective enterprises will produce intellectual synergies” and thereby “shed new light on public law as a field of academic inquiry”).

<sup>104</sup> *Cf.* Hall & Schneider, *supra* note 101, at 103 (criticizing existing health-law doctrine for “draw[ing] its doctrines from the many fields of law that govern ordinary commercial affairs,” without considering whether the distinctive context of health law sometimes supports a different legal rule).

<sup>105</sup> *See* Mattei, *supra* note 12, at 8 (“[N]o taxonomy can claim universality by serving every . . . purpose better than every alternative one.”).

<sup>106</sup> *See, e.g.*, Christensen O’Connor Johnson Kindness PLLC, Chemical Practice Group, <http://www.cojk.com/ourpractice/chemicalprocesspatents.html> (last visited Oct. 22, 2009); McAndrews, Held & Malloy, Ltd., Chemical Practice Group, <http://www.mhmlaw.com/brochure/chemical.pdf> (last visited Oct. 22, 2009).

ticular subject matter as a distinct corpus of law.<sup>107</sup> 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 field suggests, the organization and specialization of legal practice influences the development and recognition of legal fields.<sup>108</sup> If lawyers do not organize themselves or specialize in terms of a particular category, they create 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, the task of developing the field fell entirely on legal academics.<sup>109</sup> If, on the other hand, lawyers organize their practice by reference to a category, they highlight the category as a potential field and also create 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 the 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 the situation can be helpfully considered as arising within different fields or whether the situation can be helpfully considered from multiple different organizing frameworks even within a particular field, or both.<sup>110</sup> This complexity is not necessarily a problem;

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<sup>107</sup> See Carter, *supra* note 83, at 243–44 (arguing that there is a “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).

<sup>108</sup> See Laycock, *supra* note 60, at 167–68.

<sup>109</sup> See *id.*

<sup>110</sup> Some private-law theorists have posited that, under a proper taxonomic system, legal categories can be arranged in a hierarchy under which 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 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 15, 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 is in the private-law context, see Sherwin, *supra* note 13, at 123 (expressing “doubt[ ]” about Birks’s position), for public law, such a rule seems demonstrably wrong. For example, legal issues often arise within the categories of both environmental law and bankruptcy law, neither of which is a subcategory of the other. See, e.g., *Midlantic Nat’l Bank v. N.J. Dep’t of Env’tl. Prot.*, 474 U.S. 494 (1986) (addressing whether federal bankruptcy law displaces state environmental law); *United States v. Hansen*, 262 F.3d 1217, 1237–39 (11th Cir. 2001) (addressing whether a corporate executive’s limited authority over operations due to bankruptcy of the corporation foreclosed holding the executive criminally liable for

each of the various organizing frameworks emphasizes particular angles on and insights into the situation. That being said, to the extent that a situation arises within 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 sues 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?<sup>111</sup> Such overlap situations “present problems for a system of doctrinal classification at the same time that they offer particularly sharp examples for the delineation of the processes of doctrinal classification.”<sup>112</sup>

## 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. As the Introduction to this Article noted, the perception that environmental law is incoherent and lacks a distinctive conceptual core has given rise to considerable existential angst within the field.<sup>113</sup> There is, moreover, a sense that courts may not view environmental law as a distinctive legal field at all.<sup>114</sup>

Part II begins by examining two noteworthy efforts to cohere environmental law as a legal field. I argue that neither of these works satisfactorily conceptualizes environmental law as a legal field; rather,

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corporation's environmental violations); *see also, e.g.*, *Hayes v. Crown Cent. Petroleum Corp.*, 78 Fed. App'x 857, 862–63 (4th Cir. 2003) (addressing whether proxy solicitation violated the Securities Exchange Act by not disclosing the favorable impact that would result if a corporation settled a labor dispute, a question potentially falling within the fields of both labor law and securities law).

<sup>111</sup> *See* *United States v. Bestfoods*, 524 U.S. 51, 70 (1998) (stating that the issue was one in which corporate-law principles should apply and chastising the district court for failing to apply corporate-law standards).

<sup>112</sup> Feinman, *supra* note 15, at 667–68.

<sup>113</sup> *See supra* notes 2–6 and accompanying text.

<sup>114</sup> *See* Richard J. Lazarus, *Thirty Years of Environmental Protection Law in the Supreme Court*, 17 PACE ENVTL. L. REV. 1, 14 (1999) (“For most of the Court, most of the time, environmental law has become no more than a subspecies of administrative law, raising no special issues or concerns worthy of distinct treatment as a substantive area of law. Environmental protection is merely an incidental context for resolution of a legal question.”); *see also* Jay D. Wexler, *The (Non)Uniqueness of Environmental Law*, 74 GEO. WASH. L. REV. 260, 262 (2006) (“[S]cholars must clarify, with some specificity, what it would mean for courts to treat environmental law as a distinct area of law.”).

both offer an incomplete account of the field, one 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 people make of environmental resources and the pervasive interrelatedness of these uses, conflicts among uses arise and are exceedingly difficult to manage. These use conflicts define the policy trade-offs that frame environmental lawmaking and form the basis for a use-conflict framework to conceptualize environmental law as a legal field.

### A. Critique of Prior Approaches

This Section examines and critiques two important efforts to explain environmental law as a coherent legal field: Dan Tarlock's 2004 article *Is There a There There in Environmental Law?*<sup>115</sup> and David Westbrook's 1994 article *Liberal Environmental Jurisprudence*.<sup>116</sup> Both articles offer interesting insights into environmental law, for which they are often cited in environmental-law scholarship.<sup>117</sup> Despite these contributions, neither Tarlock nor Westbrook achieves his ultimate objective of explicating a conceptually unified environmental law.

#### 1. *Dan Tarlock's Environmental Conceptualism*

Tarlock's 2004 article *Is There a There There in Environmental Law?*<sup>118</sup> is probably the foremost extant work addressing the question of 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 re-

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<sup>115</sup> Tarlock, *supra* note 11.

<sup>116</sup> Westbrook, *supra* note 5.

<sup>117</sup> For examples of works excerpting or citing Tarlock's article, see 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); Farber, *supra* note 4, at 388 & n.36. For examples of works citing Westbrook's article, see David M. Driesen, *The Societal Cost of Environmental Regulation: Beyond Administrative Cost-Benefit Analysis*, 24 *ECOLOGY L.Q.* 545, 553 n.21 (1997); 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, 40 n.210; Douglas A. Kysar, *The Consultants' Republic*, 121 *HARV. L. REV.* 2041, 2057 n.41 (2008) (book review).

<sup>118</sup> Tarlock, *supra* note 11.

lated but disturbing features of environmental law that make its future survival problematic".<sup>119</sup>

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, 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.<sup>120</sup>

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."<sup>121</sup> The construction of a stable legal regime, he believes, would make environmental law "real law."<sup>122</sup> 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."<sup>123</sup> 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."<sup>124</sup> Without such principles, environmental law faces the possibility of "total assimilation and marginalization" in the law generally.<sup>125</sup>

To meet this perceived need, Tarlock proposes five "candidate principles" of environmental law:

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

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<sup>119</sup> *Id.* at 215–17.

<sup>120</sup> *Id.* at 217.

<sup>121</sup> *Id.* at 218–19. 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.

<sup>122</sup> *Id.* at 221–22.

<sup>123</sup> *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 the 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").

<sup>124</sup> *Id.* at 220, 222.

<sup>125</sup> *Id.* at 230.

- “Environmental Decisionmaking Should Be Inclusive Rather than Exclusive within the Limits of Rationality”<sup>126</sup>

He envisions these principles as “rebuttable presumptions” to structure environmental decision-making processes, rather than “hard” substantive rules.<sup>127</sup> This flexibility 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.”<sup>128</sup>

## 2. *David Westbrook’s Liberal Environmental Jurisprudence*

Like Tarlock, Westbrook, in his 1994 article, *Liberal Environmental Jurisprudence*,<sup>129</sup> also sets out to organize environmental law into “a coherent whole” and thereby establish environmental law as a legitimate discipline.<sup>130</sup> Westbrook contends that environmental law is a struggle to protect environmental values, which transcend individual human welfare, within a liberal legal system that responds only to impacts on individual humans.<sup>131</sup>

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.”<sup>132</sup> In the first stage, archaic environmental law attempts to address environmental damage through common-law tort.<sup>133</sup> Archaic environmental law conceptualizes environmental harms as infringements on individual rights and seeks to redress those infringements through traditional common-law mechanisms.<sup>134</sup> The second stage, classical environmental law, addresses environmental problems through bureaucratic regulation.<sup>135</sup> Classical environmental law strives for the ideal of an efficient market.<sup>136</sup> It views environmental problems as market failures and intervenes in markets with regulation intended to internalize the costs of environmental damage.<sup>137</sup> The third stage, modern environmental law, addresses environmental problems by attempting to

<sup>126</sup> *Id.* at 248–53.

<sup>127</sup> *Id.* at 220.

<sup>128</sup> *Id.* at 239–40.

<sup>129</sup> Westbrook, *supra* note 5.

<sup>130</sup> *Id.* at 621.

<sup>131</sup> *See id.* at 622–23 & n.3.

<sup>132</sup> *Id.* at 621–22.

<sup>133</sup> *See id.* at 631–47.

<sup>134</sup> *Id.* at 680.

<sup>135</sup> *See id.* at 647–62.

<sup>136</sup> *Id.* at 662, 681.

<sup>137</sup> *See id.* at 652; *id.* at 661 (“By passing regulations, bureaucrats attempt to replace consumer choice aggregated through the flawed unregulated market with reasoned guesses about the aggregation of consumer choice in a hypothetical well-functioning market.”).

construct markets.<sup>138</sup> Market incentives, both positive (entitlements) or negative (taxes), allow market behavior to achieve environmental objectives.<sup>139</sup>

According to Westbrook, the problem with each of these stages 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.<sup>140</sup> 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.”<sup>141</sup> 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.<sup>142</sup>

### 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.<sup>143</sup> And Westbrook’s account of environmental law offers important insights into some of the difficulties faced in making

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<sup>138</sup> See *id.* at 663–80.

<sup>139</sup> See *id.* at 666–67, 670–73.

<sup>140</sup> *Id.* at 693–94. 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 “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.”).

<sup>141</sup> Westbrook, *supra* note 5, 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.”).

<sup>142</sup> See *id.* at 709, 711.

<sup>143</sup> 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 plant over whether modifications made by the owner at the plant rendered the plant a new or modified source that, under the Clean Air Act, must adopt more stringent pollution-control technology, see *id.* at 570–71. *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. See Tarlock, *supra* note 11, at 252.

environmental law through systems, institutions, and processes that are in many ways ill-suited to a full consideration of the natural environment. Nevertheless, neither Tarlock nor Westbrook ultimately meets the goal of cohering environmental law as a legal field.

Both Tarlock and Westbrook focus on conceptualizing environmental law by reference to environmentalist ideals.<sup>144</sup> 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,<sup>145</sup> rather than as it normatively should exist, 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.<sup>146</sup> Indeed, even Tarlock's principles, which he proposes as tools for advancing environmentalism, implicitly acknowledge that environmentalism must be balanced against other values and interests.<sup>147</sup> It is that balance among competing demands on

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<sup>144</sup> See Tarlock, *supra* note 11, at 218 (opining that environmental law should reflect environmentalism as "a potentially transformative, fundamental, if still semi-coherent and contested paradigm shift in the ways in which we enjoy the use of our air, water, and soil planetary life support systems and our biodiversity heritage"); Westbrook, *supra* note 5, at 711–12 (expressing hope that environmental law will come to reflect "an understanding of nature").

<sup>145</sup> Tarlock is unclear about whether his principles are primarily descriptive or prescriptive. See Tarlock, *supra* note 11, at 248–49 (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 lawyer 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").

<sup>146</sup> See *infra* text accompanying note 181.

<sup>147</sup> Thus, Tarlock's first principle posits that environmental law should minimize uncertainty before actions are taken. See Tarlock, *supra* note 11, at 249. However, this principle 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. See *id.* at 250. He nevertheless acknowledges that "[a] general non-degradation standard . . . 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 im-

environmental resources, more than anything, that defines environmental decision making. 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 are associated with environmental protection. Environmental protection means different 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. A particular environmental decision may implicate various combinations of these values and interests. These values and interests may conflict. Thus, environmental protection 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 trade-offs facing environmental decision makers.

In addition to tying their frameworks for unifying environmental law too closely to environmentalism, Tarlock and Westbrook 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 trade-offs, and values and interests.<sup>148</sup> In part, this probably stems from Tarlock's practical objective of promoting environmental protection through the application of environmental law.<sup>149</sup> To a large extent, Tarlock cares only about whether environmental law accomplishes environmental protection and therefore only about the

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pact 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. *Id.* at 252. He would nonetheless have to concede that a source that very recently upgraded to the best available technology, at great expense, must be exempted at least temporarily from further required upgrades. Tarlock's fifth and final principle advocates making decisions inclusive, except when doing so exceeds the limits of rationality. *Id.* at 253.

<sup>148</sup> See *supra* Part I.C.2.

<sup>149</sup> See Tarlock, *supra* note 11, at 228 (expressing concern that environmental law "will lose power in the judicial and political arena"); *id.* at 254 (expressing hope that environmental law will "evolve into a permanent check on the full range of resource consumption decisions").

content of environmental-law doctrine.<sup>150</sup> To the extent that 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”<sup>151</sup> if it is to be a legitimate legal field or “real law.”<sup>152</sup> In this respect, he seems to accept the conceptualist assumption that a legal field can only exhibit coherence to the extent that it can be reduced to a few fundamental principles. Such an approach, however, neglects coherence arising from other dimensions of a field. Moreover, whatever the merits of conceptualism<sup>153</sup> as an approach in other legal fields,<sup>154</sup> it seems poorly matched to environmental law. As Tarlock’s candidate principles themselves reflect by their failure to address the trade-offs they implicate, environmental law lacks the level of internal logic and consistency in its legal doctrine that is necessary to yield conceptualist principles.<sup>155</sup> The context of environmental law is too nuanced to yield simple principles. This complexity does not mean, however, as Tarlock appears to believe, that environmental law lacks a conceptual core or is not a legal field.<sup>156</sup>

Nor does Westbrook’s “limits of liberalism” theory accomplish his goal of organizing all of environmental law into “a coherent whole.”<sup>157</sup> Merely valuing nature qua nature would not, as Westbrook asserts, render environmental law “substantively complete”<sup>158</sup> 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 regardless of what mix of values

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<sup>150</sup> See *id.* at 218–19.

<sup>151</sup> *Id.* at 218.

<sup>152</sup> *Id.* at 218, 221–23, 228.

<sup>153</sup> “‘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).

<sup>154</sup> Cf. *supra* Part I.B.

<sup>155</sup> See *infra* Part II.F.

<sup>156</sup> 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 11, 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–H.

<sup>157</sup> See Westbrook, *supra* note 5, at 621.

<sup>158</sup> *Id.* at 711.

we are trying to vindicate.<sup>159</sup> 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.<sup>160</sup> 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.<sup>161</sup> 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 as opposed to 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 criticized their explanations of environmental law on several points. Ultimately, however, my deepest disagreement with their approaches stems from their failure to identify what I have argued here are the essential attributes of a legal field: features that are common throughout the field and features that are distinctive to the field.<sup>162</sup> 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

To consider how we should think about environmental law as a legal field, we must first have some understanding of what the field of environmental law might encompass—that is, of the scope of situations we wish to characterize with our organizational framework. Al-

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<sup>159</sup> See *infra* Part II.C.1–3.

<sup>160</sup> See Westbrook, *supra* note 5, at 693–95.

<sup>161</sup> See, e.g., MARTHA ALBERTSON FINEMAN, THE AUTONOMY MYTH: A THEORY OF DEPENDENCY 20–22, 28–30 (2004) (characterizing autonomy as a “foundational myth[ ]”); Stanley Ingber, *The Marketplace of Ideas: A Legitimizing Myth*, 1984 DUKE L.J. 1, 78–82; David R. Carlin, Jr., *The Crusoe Fallacy: Who Is in Charge Here? Me, Me, Me. . .*, COMMONWEAL, Feb. 14, 1997, at 7.

<sup>162</sup> Cf. Hunter, *supra* note 19, at 20 (criticizing other frameworks proposed for health law on the ground that they “omit[ ] too much of what constitutes the core of legal regulation of the health care system”).

though everyone 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 Act<sup>163</sup> and Clean Air Act<sup>164</sup>—obviously fall within the definition. But what about laws regulating natural resources, such as the statutes governing the management of public lands?<sup>165</sup> These laws reflect a consideration of the need to conserve and to preserve elements of the natural environment,<sup>166</sup> but they also intentionally facilitate the exploitation of natural resources, even at the cost of some environmental degradation.<sup>167</sup> Are such laws environmental? What about laws that do not necessarily reflect any consideration of the environment, yet may have significant environmental effects? Such laws may include, for example, tax subsidies that encourage the purchase of sport-utility vehicles (SUVs) with low fuel efficiencies or laws regulating rail-freight rates.<sup>168</sup> Some statutes that exhibit an obvious overall orientation toward protecting the environment nevertheless 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.<sup>169</sup> Other statutes do not exhibit an overall orientation toward protecting the environment but

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<sup>163</sup> 33 U.S.C. §§ 1251–1387 (2006).

<sup>164</sup> 42 U.S.C. §§ 7401–7671q (2006).

<sup>165</sup> See, e.g., Federal Land Policy and Management Act of 1976, 43 U.S.C. §§ 1701–85 (2006).

<sup>166</sup> My use of the term *natural environment* here is not intended to suggest the existence of nature entirely independent of human impacts. As several scholars have noted, “[t]here really is no such thing as nature untainted by people.” Peter Kareiva et al., *Domesticated Nature: Shaping Landscapes and Ecosystems for Human Welfare*, 316 *SCI.* 1866, 1866 (2007) (citing Eric W. Sanderson et al., *The Human Footprint and the Last of the Wild*, 52 *BIOSCIENCE* 891 (2002)); see also William Cronon, *Introduction: In Search of Nature*, in *UNCOMMON GROUND: TOWARD REINVENTING NATURE* 23, 25 (William Cronon ed., 1995) (“The work of literary scholars, anthropologists, cultural historians, and critical theorists over the past several decades has yielded abundant evidence that ‘nature’ is not nearly so natural as it seems.”).

<sup>167</sup> Compare, e.g., 43 U.S.C. § 1712(c)(3) (instructing the Secretary of the Interior, in the management of public lands administered by the Bureau of Land Management, to “give priority to the designation and protection of areas of critical environmental concern”), with 43 U.S.C. § 1712(c)(1) (instructing the Secretary of the Interior, in the management of the same public lands, to “observe the principles of multiple use and sustained yield,” which are defined in § 1702(c) to include the potential extraction of timber and minerals).

<sup>168</sup> See I.R.C. § 280F(a)(1)(A), (d)(5)(A) (2006) (allowing greater tax deduction for some sport-utility vehicles than for other cars because the definition of a luxury automobile—subject to limited depreciation deduction—is more stringent for cars than for SUVs); *id.* § 4064 (applying an excise tax to domestic sales of cars that do not satisfy fuel-economy standards but exempting vehicles that weigh more than 6,000 pounds); *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 412 U.S. 669, 678, 696–99 (1973) (reviewing environmental group’s challenge to Interstate Commerce Commission’s approval of rail-freight increases).

<sup>169</sup> See, e.g., Clean Air Act § 125, 42 U.S.C. § 7425(b) (authorizing rules or orders prohibiting certain air-pollution sources “from using fuels other than locally or regionally available coal or coal derivatives”).

nonetheless include specific provisions that do reflect a goal of environmental protection.<sup>170</sup> Which of these are *environmental law* and which are not? 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 of *environmental law* illuminates the functioning of the law.<sup>171</sup> 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 application.

A surprising amount of scholarship discusses and theorizes about environmental law without defining the scope of the term.<sup>172</sup> Some authors, however, have offered definitions, which fall into three main types. The most expansive definitions include all laws that affect the physical environment.<sup>173</sup> Other definitions restrict environmental law to laws that are enacted for the purpose, or the primary purpose, of protecting the natural environment.<sup>174</sup> The narrowest definitions include only laws that reflect an environmentalist ethic.<sup>175</sup>

In choosing a useful definition for environmental law, the challenge is to balance overinclusiveness and underinclusiveness. An over-

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<sup>170</sup> See, e.g., 10 U.S.C. § 2378 (2006) (requiring military procurement of copier paper to contain specified percentages of post-consumer recycled content); Pub. L. No. 106-181, § 157, 114 Stat. 61, 89 (2000) (directing the Federal Aviation Administration to study “the use of recycled materials . . . in pavement used for runways, taxiways, and aprons”).

<sup>171</sup> See *infra* Part II.A.

<sup>172</sup> Cf. Wexler, *supra* note 114, at 283–84 (noting some of the problems with defining what law is environmental and opining that “sort[ing] these issues out[ ] . . . would be difficult and time consuming”).

<sup>173</sup> 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 (2002–03) (“Environmental law can be generally defined as the law governing the relationships of humans to the biophysical environment.”).

<sup>174</sup> See North American Agreement on Environmental Cooperation, U.S.-Can.-Mex., art. 45.2(a), Sept. 14, 1993, 32 I.L.M. 1480, 1495, available at [http://www.cec.org/pubs\\_info\\_resources/law\\_treat\\_agree/naaec/download/Naaec-e.txt](http://www.cec.org/pubs_info_resources/law_treat_agree/naaec/download/Naaec-e.txt) (defining “environmental law” as “any statute or regulation . . . the primary purpose of which is the protection of the environment, or the prevention of a 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.”); LAZARUS, *supra* note 2, at 1 (“[E]nvironmental law regulates human activity in order to limit ecological impacts that threaten public health and biodiversity.”); 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 animal and plant species.”).

<sup>175</sup> 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)).

inclusive definition risks depriving the term of meaning. Employed expansively, the term *environmental* “may seem uselessly broad, describing nothing in particular.”<sup>176</sup> 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.<sup>177</sup> An overinclusive definition also diverges from common understandings of the term *environmental law*. Definitions generally should match common usage.<sup>178</sup> 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<sup>179</sup>—would diverge from what most people understand environmental law to entail and would likely lead to confusion.

Moreover, such laws raise a different set of issues from 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 of *whether* the environment *should* factor into the law-making 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 law-making institutions’ considerations? This question leads to a set of follow-up questions—for instance, what are the relevant policy trade-offs, what values and interests do the law-making institutions bring to bear to resolve those trade-offs, and what legal doctrine is produced as a result of those choices. These questions never arise with environmental laws that do not reflect consideration of the environment. This fundamental difference between the two categories emphasizes the usefulness of a classification that distinguishes between them instead of lumping them together.

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<sup>176</sup> ZYGMUNT J.B. PLATER ET AL., *ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY* 5 (3d ed. 2004); see Tarlock, *supra* note 11, at 221 (“[T]he term ‘environmental’ has become so all-encompassing that it has been robbed of any operative meaning; it needs contours.”).

<sup>177</sup> See, e.g., Kim Diana Connolly, *The Ecology of Breastfeeding*, 13 SE. ENVTL. L.J. 157, 157, 165 (2005) (arguing that “laws that support breastfeeding should be considered environmental laws” because such laws reduce “the negative environmental impacts of production and distribution of artificial baby milk”).

<sup>178</sup> See Solove, *supra* note 56, 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 the things that are commonly viewed under the rubric of ‘privacy.’”).

<sup>179</sup> See *supra* note 168 and accompanying text.

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 trade-offs in environmental decision making.<sup>180</sup> As a result of these trade-offs, 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 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 excludes 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 law-making institutions take to environmental management.<sup>181</sup>

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<sup>180</sup> See *infra* Part II.C.

<sup>181</sup> 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 to 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 (2006) (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 must 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 that may have far greater environmental impacts, somewhat misallocates our attention. Excluding from the definition of environmental law laws that have inadvertent environ-

### 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 trade-offs, 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 inter-relatedness. 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 crucial yet unattainable nature of detailed scientific information. Moreover, these core characteristics help to explain the recurring trade-offs 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.<sup>182</sup> Public lands also often are associated

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mental impacts 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 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*, Soc. POL'Y, Spring 2005, at 19, 25 (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 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 ought to be managed consciously.

<sup>182</sup> 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 generally Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial*

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, physical public resources are not wholly privately owned and controlled.<sup>183</sup> More abstractly, environmental values such as picturesque 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, lies at the heart of all problems that arise in environmental law.<sup>184</sup> 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.<sup>185</sup>

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 le-

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*Intervention*, 68 MICH. L. REV. 471, 476–491 (1970) (outlining the basic elements of American public-trust law and explaining the various reasons and conceptions behind the public-trust doctrine).

<sup>183</sup> See *Hughes v. Oklahoma*, 441 U.S. 322, 335–36 (1979) (concluding that “state regulations of wild animals should be considered according to the same general rule applied to state regulations of other natural resources”); *United States v. Causby*, 328 U.S. 256, 260–61 (1946) (declining to recognize private property rights to airspace); Michael C. Blumm & Lucas Ritchie, *Lucas’s Unlikely Legacy: The Rise of Background Principles as Categorical Takings Defenses*, 29 HARV. ENVTL. L. REV. 321, 352–53 (2005) (discussing state ownership of wild animals); Dave Owen, *Law, Environmental Dynamism, Reliability: The Rise and Fall of CalFed*, 37 ENVTL. L. 1145, 1179–80 (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)).

<sup>184</sup> I intentionally elide here the economist’s distinction between use and non-use valuation of environmental resources. See, e.g., Thomas A. More et al., *Values and Economics in Environmental Management: A Perspective and Critique*, 48 J. ENVTL. MGMT. 397, 398 (1996) (distinguishing use values, which “apply to the benefits a resource produces for those who actually use it,” and non-use values, which “concern benefits received by those who do not use it”); see also *id.* (“The distinction between use and non-use values is not well defined and may not always be clear. . . . Non-use benefits have been subdivided into existence value (the value people receive from simply knowing a resource exists), altruism (the value derived from having other contemporaries use a resource) and bequest value (preserving a resource for future generations).”). I employ the term “use” expansively, to include benefits associated with what economists would call non-use values—for example, I count appreciation of the existence of an environmental resource as a use.

<sup>185</sup> Cf. R.H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1, 2 (1960) (examining situations of conflicting use).

gal 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.<sup>186</sup> Management of public resources therefore requires collective action among or on behalf of the users and beneficiaries to limit use of the resources to optimal levels.<sup>187</sup> The difficulties of instituting collective action have been widely noted.<sup>188</sup> Individual users must be convinced of their interest in the public resource and of the need for management to limit its use.<sup>189</sup> The greater the number and variation in users, the greater the difficulty of attempting to organize them into collective action.<sup>190</sup> Organizing requires a leader who is willing to “bear the costs of organization and focus the attention of a diffuse, disconnected collection of individuals.”<sup>191</sup> 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.<sup>192</sup>

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<sup>186</sup> See, e.g., Garrett Hardin, *The Tragedy of the Commons*, 162 SCIENCE 1243, 1244–45 (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).

<sup>187</sup> See Hanoch Dagan & Michael A. Heller, *The Liberal Commons*, 110 YALE L.J. 549, 574–75 (2001).

<sup>188</sup> See, e.g., RUSSELL HARDIN, *COLLECTIVE ACTION* 20–22 (1982); MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* 1–2 (rev. ed. 1971); ELINOR OSTROM, *GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION* 6–7 (James E. Alt & Douglass C. North eds., 1990).

<sup>189</sup> 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.”).

<sup>190</sup> See Brigham Daniels, *Emerging Commons and Tragic Institutions*, 37 ENVTL. L. 515, 527 (2007) (noting that as the group size increases, so too do collective action costs); George J. Stigler, *Free Riders and Collective Action: An Appendix to Theories of Economic Regulation*, 5 BELL J. ECON. & MGMT. SCI. 359, 360–62 (1974).

<sup>191</sup> Kang, *supra* note 189, at 770; see also HARDIN, *supra* note 188, 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”).

<sup>192</sup> See OSTROM, *supra* note 188, at 36; Stigler, *supra* note 190, at 359–60. 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, 71 (2003). According to Kahan, individuals will willingly contribute to collective action if 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

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 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.<sup>193</sup> Users perceive these traditions and customs as conferring entitlements and accordingly often strongly resist efforts to limit their uses of the environment.<sup>194</sup> 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.<sup>195</sup> Fourth, the same factors—numerous users and complex causation—make it relatively easy for users to ignore, or not 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.<sup>196</sup> This difficulty is especially apparent when, as is often the case, environmental harms are difficult to perceive and measure and when the benefits associated with protecting the environment involve existence value rather than use value, or

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particular, if the users are numerous and varied and can free ride in relative anonymity, building the requisite trust among users is likely to be difficult.

<sup>193</sup> Cf. Manus, *supra* note 5, 518 (“The American jural system is based on a fundamental presumption that people bear no moral duties to refrain from exploiting the environment . . .”).

<sup>194</sup> 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 SCIENCE 280, 281 (1987) (“Strong initial views are resistant to change because they influence the way that subsequent information is interpreted.”).

<sup>195</sup> See LAZARUS, *supra* note 2, at 33 (“[D]ue 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.”).

<sup>196</sup> Cf. Lazarus, *supra* note 195, at 748 (“Many of the ecological injuries resulting from environmental degradation are not readily susceptible to monetary valuation and have a distinctively nonhuman character.”).

(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 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.<sup>197</sup> This pervasive interrelatedness sometimes is referred to as the First Law of Ecology.<sup>198</sup> 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

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<sup>197</sup> 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.").

<sup>198</sup> See, e.g., BARRY COMMONER, *THE CLOSING CIRCLE: NATURE, MAN, AND TECHNOLOGY* 33–39 (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 176, 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 . . ."); *id.* at xxx ("As the First Law of Ecology says, everything is connected to everything else."); *id.* at 5 ("[T]he environmental perspective conceptualizes all human enterprises existing within one large system of interconnected systems.").

air in Asia drift across the Pacific Ocean to California.<sup>199</sup> 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.<sup>200</sup> Organochlorine compounds accumulate in animal lipid tissue over time, affecting development and reproduction.<sup>201</sup>

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.<sup>202</sup>

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<sup>199</sup> See Andrew Jacobs, *U.N. Report Points to Peril from Noxious 'Brown Clouds'*, N.Y. TIMES, Nov. 14, 2008, at A6.

<sup>200</sup> See Thomas C. Erren et al., *Synergy Between Asbestos and Smoking on Lung Cancer Risks*, 10 EPIDEMIOLOGY 405, 409 (1999); see also Jun Peng et al., *Iron and Paraquat as Synergistic Environmental Risk Factors in Sporadic Parkinson's Disease Accelerate Age-Related Neurodegeneration*, 27 J. NEUROSCIENCE 6914, 6919 (2007) (reporting findings suggesting that increased oral intake of iron in the neonatal period and environmental exposure to the pesticide paraquat have a synergistic effect on increasing the risk of neurodegeneration associated with Parkinson's disease).

<sup>201</sup> See Karen A. Glennemeier & Linda J. Begnoche, *Impact of Organochlorine Contamination on Amphibian Populations in Southwestern Michigan*, 36 J. HERPETOLOGY 233, 233 (2002).

<sup>202</sup> 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, 984-85 (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 re-

### 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 creates 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 decision making. Common examples of such disjunction include the *discharge-exposure disjunction*, where a discharged pollutant travels a great distance, over a long time, or both before a person, animal, or plant is exposed to it. 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 worldwide in a series of cycles of volatilization into the atmosphere and then redeposited to the surface.<sup>203</sup> Another example of a disjunction is the *exposure-effect disjunction*, where an adverse health effect does not manifest itself for months, years, or even decades after a person is exposed to an environmental hazard.<sup>204</sup> Individuals exposed to asbestos, for example, may not contract mesothelioma for six to almost forty-five years after their exposure.<sup>205</sup> A *cost-benefit disjunction* arises when, as is often true, the benefits of using the environment are experienced immediately, but the costs are not experienced until much later.<sup>206</sup>

These disjunctions create difficulties for environmental lawmaking. Environmental effects manifest themselves over a much broader expanse of space and time than humans and institutions typically con-

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sources. 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.”)

<sup>203</sup> See AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, U.S. DEP’T OF HEALTH & HUMAN SERVS., TOXICOLOGICAL PROFILE FOR POLYCHLORINATED BIPHENYLS 1–3, 16, 479, 481 (2000).

<sup>204</sup> See, e.g., Nina A. Mendelson, *A Control-Based Approach to Shareholder Liability for Corporate Torts*, 102 COLUM. L. REV. 1203, 1237 (2002) (“[T]he injuries to human health and the environment of particular substances may take years to manifest themselves.”).

<sup>205</sup> See A. Chovil & C. Stewart, *Latency Period for Mesothelioma*, 314 LANCET 853, 853 (1979).

<sup>206</sup> See Louis Kaplow, *Discounting Dollars, Discounting Lives: Intergenerational Distributive Justice and Efficiency*, 74 U. CHI. L. REV. 79, 110 n.63 (2007) (“[G]reater use of natural resources or degradation of the environment [sometimes] produces immediate benefits but long-term costs.”).

sider in their decision making; in many respects, it is still unclear whether humans have the capacity to understand and plan over the scope required for effective environmental lawmaking.<sup>207</sup>

*Scientific Uncertainty.* Numerous scientific questions underlie any environmental problem. The standard approach to regulation calls for regulating an activity to reduce or avoid the harm that it can cause.<sup>208</sup> For environmental problems, the link between a harm and its cause or causes 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 complicated factors that make environmental effects much more difficult to predict or even to ascertain retrospectively.<sup>209</sup> Often these questions are at the frontier of science, arising in areas in which we have little empirical data and lack understanding of the natural interactions and processes. Policy makers look to science to untangle that web, but there is never complete scientific information. The critical impact of scientific uncertainty combined with its inevitability make a thorough understanding of environmental problems both highly important and wholly unattainable. As a result, environmental law requires decision making in a context of great scientific uncertainty.<sup>210</sup>

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<sup>207</sup> 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. ENVTL. L.J. 295, 318–19 (2003) (identifying the *durability-flexibility dilemma* by explaining that, 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”); *id.* at 320–21 (“Human beings are prone to wishful thinking, tending to underestimate the seriousness of problems, to overestimate the effectiveness of efforts to solve them, and to assume that the future will make them easier to solve.”).

<sup>208</sup> 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.” (footnote omitted)).

<sup>209</sup> See, e.g., Lazarus, *supra* note 207, at 240 (“[T]he 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.”).

<sup>210</sup> See Doremus, *supra* note 207, at 318–21 (discussing the uncertainties that make “objectively determinate solutions tantalizingly appealing yet impossible to achieve”); Daniel A. Farber, *Building Bridges over Troubled Waters: Eco-pragmatism and the Environmental Prospect*, 87 MINN. L. REV. 851, 855 (2003) (“[S]cientific uncertainty [in environmental reg-

#### 4. *Other Characteristics*

I am not the first to identify fundamental characteristics of environmental law. For example, Richard Lazarus argues that a “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.<sup>211</sup> 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.”<sup>212</sup> These features of ecological injury, in turn, result in environmental laws that exhibit the “dominant characteristics” of “complexity, scientific uncertainty, dynamism, precaution, and controversy.”<sup>213</sup> In addition, Holly Doremus identifies “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.<sup>214</sup>

The characteristics that 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 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. Although, for example, Lazarus and Doremus are undoubtedly correct that uncertainty is prevalent in environmental policy making, uncertainty is not distinctive to the environment but rather pervasive in many facets of life and therefore many legal fields.<sup>215</sup> Moreover, the uncertainty in environmental decision making is largely attributable to the pervasive interrelationships that com-

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ulation] is endemic.”); Robert L. Glicksman, *Balancing Mandate and Discretion in the Institutional Design of Federal Climate Change Policy*, 102 Nw. U. L. REV. COLLOQUY 196, 206 (2008); Richard J. Lazarus, *Meeting the Demands of Integration in the Evolution of Environmental Law: Reforming Environmental Criminal Law*, 83 GEO. L.J. 2407, 2420 (1995); Richard Lazarus, *Survey Says: Court Doesn’t Get It*, 17 ENVTL. F. 44, 45 (2000); Lazarus, *supra* note 195, at 747.

<sup>211</sup> Lazarus, *supra* note 195, at 745.

<sup>212</sup> *Id.* at 745–48. *But see* Wexler, *supra* note 114, at 286 (arguing that the features Lazarus identifies, although “remarkable,” are not clearly entirely distinct from harms in other areas of law”).

<sup>213</sup> LAZARUS, *supra* note 2, at 16 (emphasis omitted).

<sup>214</sup> Doremus, *supra* note 207, at 318–19.

<sup>215</sup> *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.”).

prise ecological systems.<sup>216</sup> To understand 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.<sup>217</sup>

#### D. Policy Trade-offs

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 trade-offs that frame lawmaking choices. To date, the dominant paradigm frames these trade-offs as pitting economic welfare against environmental protection.<sup>218</sup> The economy/environment trade-off can be a powerful lens. It accounts for much of the politics of environmental lawmaking, in which environmental groups (representing “the environment”) pursue regulation while the regulated community (representing “the economy”) fights it. Moreover, there is certainly some factual truth to the economy/environment trade-off: many environmental laws are quite costly.<sup>219</sup> For this reason and others, it sometimes will be appropriate and helpful to cast the principal trade-off in environmental lawmaking as “economics versus environment.”

The economics/environment trade-off is, however, an oversimplified generalization. The realities of the environmental decision-making context are more complicated and more nuanced than “economics versus environment” indicates, and therefore, looking at environmental decision making solely or principally through the lens of the economy/environment trade-off obscures important insights into environmental lawmaking. The principal problem with the economy/environment trade-off is that economic interests and environmental protection are not as monolithic, nor as conflicting, as the trade-off suggests.

First, environmental protection itself provides numerous economic benefits. Cleaner air is associated with various benefits of eco-

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<sup>216</sup> See LAZARUS, *supra* note 2, at 19 (tracing scientific uncertainty in environmental lawmaking to “the elaborate intricacies of the workings of the natural environment”).

<sup>217</sup> Lazarus and Doremus compiled their lists for purposes other than defining environmental law as a distinctive legal field; the differences between their lists and my own therefore may be attributable to our differing purposes rather than to any disagreement. See LAZARUS, *supra* note 2, at 16 (noting that his list of characteristics reflects “the problem of ecological injury”); Doremus, *supra* note 207, at 318 (noting that her list of characteristics reflects what makes environmental problems “especially intractable”).

<sup>218</sup> See J.B. Ruhl, *Working Both (Positivist) Ends Toward a New (Pragmatist) Middle in Environmental Law*, 68 GEO. WASH. L. REV. 522, 523 (2000) (book review).

<sup>219</sup> See, e.g., U.S. ENVTL. PROT. AGENCY, THE BENEFITS AND COSTS OF THE CLEAN AIR ACT, 1970 TO 1990, at ES-2 (1997), available at <http://www.epa.gov/air/sect812/copy.html> (reporting that the direct costs of implementing the Clean Air Act from 1970 to 1990 totaled \$523 billion).

conomic value, such as reduced health-care costs for treating respiratory difficulties.<sup>220</sup> The decision to allow additional air pollution therefore poses a trade-off not just between economic benefits and environmental benefits but also between conflicting economic benefits: the benefits of 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 trade-offs, 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.<sup>221</sup> Thus, in many situations, environmental lawmaking poses a trade-off among different economic benefits.

Second, environmental protection also is not as monolithic as the economy/environment trade-off suggests. Different uses that we commonly associate with environmental protection may conflict in a particular situation.<sup>222</sup> Hiking, camping, and other recreational uses may impair the quality of plant and wildlife habitat. Ecosystem restoration may require the elimination or reduction of nonnative 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.<sup>223</sup> Thus, in many situations, environmental lawmaking poses a trade-off among different environmental benefits.

These economic/economic trade-offs and environment/environment trade-offs are as important to understanding the problems that arise in environmental law as the economy/environment trade-off. Thus, as a framework for analyzing environmental lawmaking, the economy/environment trade-off 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.<sup>224</sup>

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<sup>220</sup> See *id.* at ES-6 tbl.ES-3 (estimating economic values for “[u]nit[s] of [a]voided [e]ffect[s]”).

<sup>221</sup> Cf. Glennon, *supra* note 31, at 1874 (“In many parts of the country, fresh water reserves have been depleted; diversions have dried up rivers and pumping has exhausted aquifers.”).

<sup>222</sup> See generally Ruhl & Salzman, *supra* note 202, at 812–17 (explaining that environmental law is full of unintended consequences).

<sup>223</sup> See *supra* note 202 and accompanying text.

<sup>224</sup> See Ruhl, *supra* note 218, at 523 (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” and hence “environmental law has no agenda, no theme, no way of thinking” and “lacks any coherent philosophy”).

Rather than replacing the economy/environment trade-off with another oversimplified generalization with similar shortcomings, consider the policy trade-offs 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 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 trade-offs posed by environmental lawmaking. Thinking 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 this Article nor unique to the environmental context. Disputes over natural resources often are characterized in terms of use conflicts.<sup>225</sup> And it was almost fifty years ago that Ronald Coase advocated what is essentially a use-conflict framework for a variety of land-use problems, including but not limited to environmental disputes.<sup>226</sup> 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 inter-relatedness. 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.<sup>227</sup> Moreover, it is a use that includes a crucial physical component, in that appreciation of the environmental

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<sup>225</sup> See, e.g., *McFarland v. Kempthorne*, 545 F.3d 1106, 1109 (9th Cir. 2008) (describing a dispute over the use of a snowmobile on a route within Glacier National Park as presenting a problem of “use conflicts”); *Nev. Land Action Ass’n v. U.S. Forest Serv.*, 8 F.3d 713, 719 (9th Cir. 1993) (noting that the National Forest Management Act, 16 U.S.C. §§ 1600–87, “directs the [Forest] Service to manage conflicting uses of forest resources” (citing 16 U.S.C. §§ 1600, 1604(g)(3) (1988))); Letter from Sen. Mark O. Hatfield to Editorial Staff, 22 ENVTL. L. 792, 793 (1992) (“Throughout this country, we are faced within [sic] increasing conflicts over the use of our natural resources.”)

<sup>226</sup> See Coase, *supra* note 185, at 2 (suggesting approaching the problem of contamination of a stream as a question of whether to use the stream for fish habitat or as a waste sink and the total and marginal value of each use (citing G.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.”).

<sup>227</sup> Cf. *Ohio v. U.S. 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 . . .”).

resource depends to a significant extent on the physical condition of the resource.

### E. Values and Interests

Trade-offs are only part of lawmaking; equally important are the values and interests that lawmaking institutions bring to bear on the relevant trade-offs in order to make decisions that produce law.<sup>228</sup> As with the economy/environment trade-off, we could frame our description of the values and interests in environmental lawmaking in terms of abstract, general principles or goals: 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 trade-off. 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 value, such as economic well-being, abstracted from any particular decision.

To the contrary, a descriptive analysis of the values and interests in environmental lawmaking begins to yield meaningful insights only when values and interests are framed specifically enough to tie them to conflicting use demands on environmental resources. For example, trying to determine whether the National Marine Fisheries Service ("NMFS") values sustainable fisheries in the abstract is unlikely to yield concrete insight into the functioning of fisheries regulation. But determining whether NMFS closed a fishery when necessary to preserve the fishery's long-term viability<sup>229</sup> over the objections of the fishing industry concerned with its own financial viability<sup>230</sup> provides

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<sup>228</sup> An examination of the various kinds of values associated with environmental decision making, and potential taxonomies of those values, is beyond the scope of this Article. For works addressing these topics, see Andrew Brennan, *Moral Pluralism and the Environment*, 1 ENVTL. VALUES 15, 19–21 (1992) (defining and distinguishing among demand, nondemand, use, option, existence, and transformative values); Lockwood, *supra* note 98, at 382 (defining and distinguishing among intrinsic, instrumental, functional, held, and assigned values). The use-conflict framework outlined here is inclusive enough to encompass a broad range of understandings of values potentially associated with environmental resources.

<sup>229</sup> See 16 U.S.C. § 1853(a)(1)(A) (2006) (providing that fishery management plans shall "contain the conservation and management measures . . . necessary and appropriate for the conservation and management of the fishery, to prevent overfishing and rebuild overfished stocks, and to protect, restore, and promote the long-term health and stability of the fishery").

<sup>230</sup> Cf. Jerry McBeath, *Greenpeace v. National Marine Fisheries Service: Steller Sea Lions and Commercial Fisheries in the North Pacific*, 21 ALASKA L. REV. 1, 9 (2004) ("NMFS's mission in fisheries development and management brings it into close association with the fishing

useful information about the relevant values and interests at play, thereby shedding meaningful light on environmental lawmaking. Similarly, trying to determine whether the Environmental Protection Agency's (EPA) regulations promulgated pursuant to the Clean Air Act<sup>231</sup> are efficient in the abstract is not as useful to understanding environmental lawmaking as evaluating the relative efficiency of policy options before the EPA and determining why the agency sometimes chooses a less efficient option.

Thus, as with trade-offs, 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, commentators have bemoaned the incoherence of environmental law as a body of legal doctrine.<sup>232</sup> 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.<sup>233</sup> 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.

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 reflects

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industry and exposes the agency to criticism that the economic interests it regulates dictates its actions.”).

<sup>231</sup> See, e.g., 42 U.S.C. § 7411(b) (2006) (directing EPA to issue performance standards for new stationary sources of air pollution); *id.* § 7412(d) (directing EPA to issue emission standards for sources of hazardous air pollutants).

<sup>232</sup> See *supra* notes 4–5 and accompanying text.

<sup>233</sup> See Fisher et al., *supra* note 4, at 220 (“The incoherence of environmental law is not something that must (or can) be tamed by the intellectual efforts of environmental law scholars; rather it is the acceptance of that incoherence, and its methodological treatment, that marks mature environmental law scholarship.”). Theodore Ruger has made a similar argument with respect to the incoherence of health law. See Ruger, *supra* note 22, 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”).

the fact that environmental-law doctrine consists of a variety of legal forms with different origins and foundations.<sup>234</sup> The incoherence of environmental-law doctrine also reflects an instability in values—that is, a lack of societal consensus about how to manage our relationship with the natural environment.<sup>235</sup> But the incoherence of environmental law runs deeper than a variety of forms or an instability of values. The incoherence reflects the ongoing struggles of environmental law, and in that sense incoherence is a functional and perhaps 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 and decision making. 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 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 trade-offs and yield different environmental laws. Regulatory approaches evolve over time as lawmaking institutions' understanding of environmental problems, and of the effects of environmental policies, changes. 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, I have identified patterns along other dimensions of environmental law—in factual context, policy trade-offs, and values and interests—that together provide a useful framework for analyzing and understanding the process of environmental lawmaking.<sup>236</sup> The relationship among these patterns can be represented with a conceptual diagram of environmental

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<sup>234</sup> See Fisher et al., *supra* note 4, at 225 (“[E]nvironmental law regimes tend to be complicated mixtures of established legal concepts, *sui generis* reforms, non-legal regulatory ideals, policy and legal norms from a range of different jurisdictions.”).

<sup>235</sup> Tarlock, *supra* note 11, at 223.

<sup>236</sup> See *supra* Part II.C–E.

law, just as I earlier represented a conceptual diagram of a generic legal field:

FIGURE 2: CONCEPTUAL DIAGRAM OF ENVIRONMENTAL LAW



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

### G. Advantages

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 environmental context. For example, environmental lawmaking requires lawmaking institutions to resolve trade-offs among conflicting uses (or combinations of 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 trade-offs difficult to ascertain. Moreover, the pervasive interrelationships of the environment prevent lawmaking institutions from simplifying their decision making by narrowing their focus.

Second, unlike many frameworks that have been proposed for thinking about environmental law,<sup>237</sup> a use-conflict framework does not assume any particular baseline by which to judge alternative legal arrangements. Moreover, a use-conflict framework does not 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. Because it is a descriptive framework, a use-conflict framework does not favor any particular alternative but rather provides a useful basis for evaluating alternative normative frameworks. For example, a proponent of a so-

<sup>237</sup> See, e.g., *supra* Part II.A.3 (criticizing Tarlock's and Westbrook's proposed frameworks on this ground).

cial-utility-maximization normative framework would favor choosing the legal rule associated with “the set of uses that maximizes the overall value of all resources.”<sup>238</sup>

#### H. Transcendence

Can environmental law answer the analogue of Judge Easterbrook’s challenge to cyberlaw,<sup>239</sup> to which Lessig responded,<sup>240</sup> by yielding any distinctive yet transcendent insights? That is to say, does environmental law illuminate any “lessons for law generally”?<sup>241</sup> I believe it does, and in particular I believe 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.

We have seen that pervasive interrelatedness is a fundamental characteristic of the environmental context, crucial to understanding environmental problems.<sup>242</sup> 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 linked to ecology, the science of the environment, by virtue of the fields’ 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 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. Thus, in *Massachusetts v. EPA*,<sup>243</sup> the Supreme Court recognized that new motor vehicles in the United States were among the many sources of emissions of greenhouse gases causing the climate change that is increasing sea levels and inundating coastal lands. The Court further found that regulation of such emissions under the Clean Air Act may slow the rate of climate change, thereby reducing the extent to which coastal lands are inundated by rising seas.<sup>244</sup>

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<sup>238</sup> Smith, *supra* note 226, at 1000.

<sup>239</sup> Easterbrook, *supra* note 1, at 208.

<sup>240</sup> Lessig, *supra* note 1, at 502.

<sup>241</sup> *Id.* at 503.

<sup>242</sup> See *supra* Part II.C.2.

<sup>243</sup> 549 U.S. 497 (2007).

<sup>244</sup> *Id.* at 521–26.

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.<sup>245</sup> This tension explains why so many of the canonical Supreme Court cases involving standing, which excludes potential plaintiffs from court if their alleged injury is linked too indirectly to the conduct they challenge,<sup>246</sup> are environmental-law cases,<sup>247</sup> which necessarily involve complex webs of causation.

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 in which 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,<sup>248</sup> also show significant promise for application outside of environmental law.<sup>249</sup> More generally, the con-

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<sup>245</sup> See PLATER ET AL., *supra* note 176, at 5 (associating environmental law with “a desire for broadened accountings . . . of the full consequences of human decisionmaking”).

<sup>246</sup> See, e.g., *Clinton v. City of New York*, 524 U.S. 417, 434 n.23 (1998) (noting that standing requirements preclude claims for which “the chain of causation between the challenged action and the alleged injury [i]s too attenuated”).

<sup>247</sup> See, e.g., *Massachusetts v. EPA*, 549 U.S. at 526; *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1992); *United States v. Students Challenging Regulatory Agency Procedures*, 412 U.S. 669 (1973).

<sup>248</sup> See Jonathan Z. Cannon, *Adaptive Management in Superfund: Thinking Like a Contaminated Site*, 13 N.Y.U. ENVTL. L.J. 561, 569–73 (2005); Daniel A. Farber, *Probabilities Behaving Badly: Complexity Theory and Environmental Uncertainty*, 37 U.C. DAVIS L. REV. 145, 147–48 (2003); Lawrence E. Susskind & Joshua Secunda, “Improving” Project XL: *Helping Adaptive Management to Work Within EPA*, 17 UCLA J. ENVTL. L. & POL'Y 155, 157–58 (1998–99); Joy B. Zedler, *Adaptive Management of Coastal Ecosystems Designed to Support Endangered Species*, 24 ECOLOGY L.Q. 735, 736–37 (1997).

<sup>249</sup> 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, 524–28 (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, 917–19 (2005) (applying complexity theory and, 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, 331, 348–51 (1993) (drawing on chaos theory to analyze the competing goals of accomplishing justice between the parties to a particular dispute and appropriately

cept of pervasive interrelatedness highlights how dividing the law into insular subfields 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 characteristic 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 trade-offs. These use-conflict trade-offs 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.

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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 in China*, 20 *BANKING & FIN. L. REV.* 217, 219–24 (2005) (analyzing China's importation of an English-style corporate-takeover law as an application of chaos and path-dependence theory).