

AN ECOLOGICAL THEORY OF STATUTORY INTERPRETATION

NICHOLAS S. BRYNER*

ABSTRACT

Canons of construction serve as a set of ground rules that judges rely on in interpreting statutes. Substantive canons of construction, in particular, are principles and presumptions that point judges in a specific policy direction in order to serve underlying public values. Many of these substantive canons share a common justification: judges have developed them to mitigate threats of irreversible harm to vulnerable and underrepresented interests and to incentivize clarity in the legislative process. This Article argues that environmental interests—the interests of present and future generations in maintaining ecological conditions that support life—merit similar protection. Therefore, judges should employ an environmental canon of construction: whenever possible, statutes must be read in a manner that best promotes ecological integrity and sustainability for present and future generations.

The Article examines several common substantive canons and concludes that environmental interests and values justify a similar canon. An environmental canon of construction also finds support in the National Environmental Policy Act (NEPA), which provides that “the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with” the environmental policies listed in the statute. Recognizing a substantive environmental canon would place ecological concerns on the same level, legally and rhetorically, with other fundamental rights and concerns—granting legitimacy to the consideration of environmental impacts in judicial reasoning and bringing our legal system in line with scientific understanding of our role and responsibility in an ecologically interdependent world.

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*Emmett/Frankel Fellow in Environmental Law and Policy, University of California, Los Angeles School of Law. I am indebted to Lee Paddock, Joel Mintz, Brigham Daniels, and David Simson for their insightful suggestions, as well as many others at The George Washington University Law School, UCLA School of Law, and elsewhere who provided help and comments on earlier drafts.

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I. INTRODUCTION

Common theories of statutory interpretation cast the connection between legislative and judicial authorities as analogous to a principal-agent relationship.¹ At the federal level, the principal-agent framework focuses on the primacy of Congress’s constitutional authority to legislate—to make law.² Courts serve as “agents” of the legislative branch, tasked with interpreting the language of the statute and giving it meaning that can be applied to a particular case or controversy.³

Textualism, intentionalism, and pragmatism all represent different ways of thinking about how courts best fulfill their duty as agents of Congress.⁴ These schools of thought in statutory interpretation diverge on the question of which sources are valid or helpful in ascertaining what Congress has established as law. For textualists and purposivists alike, the starting point in reading a statute is, of course, reading the statute.⁵ While textualists argue that the text is the law,⁶ others may define the law as the legislature’s intent; that is, the law is reflected in the words of the statute, but is not simply the set of words of the statute itself.⁷

1. See, e.g., FRANK B. CROSS, *THE THEORY AND PRACTICE OF STATUTORY INTERPRETATION* 3 (2009); Cass R. Sunstein, *Interpreting Statutes in the Regulatory State*, 103 HARV. L. REV. 405, 415 (1989) (discussing the theory of courts as agents as “the most prominent conception of the role of courts in statutory construction,” while highlighting the limitations and weaknesses of this approach).

2. U.S. CONST. art. I, § 1.

3. While the principal-agent analogy is imperfect, it has been influential because it seems consistent with the narrative of judicial restraint and the judiciary as the “weakest” and “least dangerous” branch of government. THE FEDERALIST NO. 78 (Alexander Hamilton); see also, e.g., Guido Calabresi, *Being Honest about Being Honest Agents*, 33 HARV. J.L. & PUB. POL’Y 907, 907 (2010) (agreeing that “judges should be the honest agents of the enacting legislature” while expressing different views about how judges best accomplish this); Frank H. Easterbrook, *Judges as Honest Agents*, 33 HARV. J.L. & PUB. POL’Y 915, 915 (2010) (“[F]aithful application of statutes is part of our heritage from the United Kingdom, and thus what the phrase ‘the judicial Power’ in Article III means.”).

4. See generally CROSS, *supra* note 1.

5. See, e.g., *id.* at 56–57.

6. ANTONIN SCALIA & BRYAN A. GARNER, *READING LAW: THE INTERPRETATION OF LEGAL TEXTS* 22 (2012).

7. See, e.g., Jonathan R. Siegel, *Symmetries—And Asymmetries—Between Theories of Statutory Interpretation*, 99 CORNELL L. REV. ONLINE 182, 186 (2014).

Regardless of the approach, statutory construction is about more than simply looking up the dictionary definitions to the words that Congress has written down on pages and sent off for the president's signature. All theories and notions of statutory construction rely, to at least some degree, on some extratextual baseline, or rather, a set of principles and hermeneutics for arriving at the meaning of words, series of words, and phrases in a statute.⁸ Many of these ground rules are expressed as judicial canons of construction, which offer a collection of flexible tools for understanding legislative language.

The literature on canons describes various types: linguistic, referential, and substantive.⁹ Linguistic canons provide general grammatical or syntactic rules for reading the language of a statute,¹⁰ while referential canons "refer[] the Court to an outside or preexisting source to determine statutory meaning."¹¹

Substantive canons, on the other hand, create presumptions that point judges in a particular policy direction, based on the statute's subject matter or the interests that the statute affects.¹² Eskridge and Frickey distinguish substantive canons from the others: although competing substantive canons exist and may push and pull in different directions, the substantive canons as a whole "are not policy neutral" and "represent value choices by the Court."¹³

Many of the most frequently used substantive canons share a common justification: judges have developed them to mitigate threats of irreversible harm to vulnerable and underrepresented interests and to incentivize clarity in the legislative process.¹⁴ They exist to serve underlying public values that may be threatened by a less-than-careful interpretation of the law. For example, in criminal law, the rule of lenity, as a substantive canon of construction, requires that ambiguities in

8. See, e.g., Sunstein, *supra* note 1, at 411 ("The meaning of a statute inevitably depends on the precepts with which interpreters approach its text. Statutes do not have pre-interpretive meanings, and the process of interpretation requires courts to draw on background principles.").

9. See, e.g., William N. Eskridge, Jr. & Philip P. Frickey, *Quasi-Constitutional Law: Clear Statement Rules as Constitutional Lawmaking*, 45 VAND. L. REV. 593, 595 (1992).

10. *Id.* Some examples of linguistic canons include the rule that the expression of one thing is the exclusion of another, as well as the rule that words, especially those in a series, are defined and contextualized by their neighbors (*noscitur a sociis*).

11. *Id.* Karl Llewellyn's famous article listed many of these two types of canons, arguing that competing counter-canons make their application unreliable. See Karl N. Llewellyn, *Remarks on the Theory of Appellate Decision and the Rules or Cannons about How Statutes Are to Be Construed*, 3 VAND. L. REV. 395 (1950).

12. See, e.g., Anita S. Krishnakumar, *Reconsidering Substantive Canons*, 84 U. CHI. L. REV. 825 (2017); Eskridge & Frickey, *supra* note 9, at 595 (suggesting that substantive canons are rooted in "substantive values drawn from the common law, federal statutes, or the United States Constitution").

13. Eskridge & Frickey, *supra* note 9, at 595–96. Krishnakumar divides substantive canons according to strength of the canon (i.e. the level of clarity required to preclude the canon's application). Her three categories include "presumptions," "'liberal' or 'strict' construction canons," and "clear statement rules." Krishnakumar, *supra* note 12, at 835.

14. The best-known substantive canons that reflect these goals include, for example, the rule of lenity (criminal statutes are interpreted in a manner that favors the defendant), the rule of liberal or broad construction of statutes with a "remedial purpose," the rule of constitutional avoidance (operating, in part, as a buffer for constitutionally-protected interests), and the "Indian canons of construction" in U.S.-Native American law. See *infra* Part II. Common substantive canons of construction address structural questions with regard to federalism or the separation of powers, such as the canon requiring a clear statement to waive sovereign immunity or the presumption of the availability of judicial review.

criminal statutes be construed in favor of defendants.¹⁵ The rule protects against due process concerns, safeguarding criminal defendants from irreversible harm, by requiring a clear statement that the conduct in question is proscribed before a law will be applied to deprive them of their rights and liberties.

This Article argues that environmental interests—the interests of both present and future generations in maintaining ecological conditions that support life—merit similar protection. Human activity in today’s world—urban development, agriculture, industrial activity and pollution, large-scale landscape modifications, and the release of atmosphere-changing greenhouse gases—has reached a scale that exposes the sensitivity and vulnerability of our environment.¹⁶ Although environmental science indicates that ecosystems are dynamic, rather than stable, pressure from human activity can affect the resilience of those ecosystems and lead to drastic change.¹⁷ Every action we take at a nationwide scale impacts our surrounding environment, and many human-driven ecological crises—climate change, biodiversity loss, and air and water pollution—have the potential to create significant and irreversible harm to present and future generations.

Environmental crises pose a great risk for the well-being of our society; at the same time, market and government failures show how environmental interests remain vulnerable and underrepresented in the operations of the usual political process. Just as judges rely on substantive canons of construction to mitigate threats of irreversible harm in criminal law, U.S.-Native American law, and other areas, judges should employ an environmental canon of construction: when possible, statutes must be read in a manner that best promotes ecological integrity and sustainability for present and future generations. Only a clear statement in a statute may overcome this rule.

The Article proceeds as follows. Part II begins with a discussion of statutory interpretation theory and several key substantive canons of construction.¹⁸ Part II also examines the justification for various statutory interpretation presumptions that favor vulnerable or underrepresented interests, making the case that environmental interests should be treated with the same regard by applying an environmental canon of construction.¹⁹ Part III provides additional justification for an environmental canon of construction by looking to the National Environmental Policy Act (NEPA).²⁰ NEPA is most widely known for its requirement that federal agencies assess environmental impacts (and consider alternatives) before engaging in major

15. See *infra* Section II.A.

16. See, e.g., Sean L. Maxwell et. al., *Biodiversity: The Ravages of Guns, Nets and Bulldozers*, 536 NATURE 143 (2016) (analyzing the most significant threats to endangered species worldwide, including over-exploitation, agricultural activity, urban development, invasion and disease, pollution, system modification, and climate change).

17. See, e.g., C.S. Holling, *Resilience and Stability of Ecological Systems*, 4 ANN. REV. ECOLOGY & SYSTEMATICS 1, 7 (1973) (“[N]atural systems have a high capacity to absorb change without dramatically altering. But this resilient character has its limits, and when the limits are passed . . . the system rapidly changes to another condition”).

18. See *infra* Part II.

19. See *infra* Part II.

20. See *infra* Part III; National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370h (2012).

actions.²¹ Yet NEPA calls for more than environmental impact assessment: the statute also includes a specific charge that “the policies, regulations, and public laws of the United States . . . be interpreted and administered . . .” in accordance with the environmental policies defined in that Act.²² Although courts have never explored in depth the reach or the consequences of this provision in NEPA for judicial interpretation of federal statutes, it serves as a clear statutory mandate in support of an environmental canon of construction. Part IV acknowledges that an environmental canon of construction would represent a shift in American jurisprudence.²³ Other, similar shifts—changing doctrines of standing in U.S. law and examples in comparative law of judicial use of environmental principles on statutory interpretation—provide useful lessons for how this transition can work. Part V explores how the environmental canon of construction could operate in practice, using as examples some recent cases where it may have had an impact in statutory construction.²⁴ Part VI addresses some potential counterarguments and issues for further exploration, followed by a brief conclusion.²⁵

Applying an environmental canon of construction in U.S. law would be a transformational change from a doctrinal standpoint, though the practical impacts would likely be incremental, rather than radical. In most statutory interpretation cases, the rule would probably not affect the outcome. As with other canons, a clear counter-environmental statement in the plain language of the statute would overcome the rule’s application.²⁶ Further, those who criticize the notion of canons, arguing that judges use them only as post hoc justifications for decisions, rather than as inputs to judicial decision-making, would not expect a new canon to have any on-the-ground impact.²⁷

Notwithstanding these limitations, developing and employing an environmental canon of construction would bring benefits in three significant ways. The first is substantive: to the extent that the canon influences judicial decisions, it will lead to a readjustment of values in the legal system, promoting more equitable outcomes for people affected by pollution and more environmentally sustainable outcomes that protect future generations’ interests. Second, as a procedural matter, the canon of construction requires Congress to act deliberately on environmental issues—clear statements are required for statutes that will negatively impact the environment and all of us that depend on it.

Finally, the canon can have an impact through the message conveyed simply by its recognition. This is because the content of substantive canons helps signal which types of interests and concerns that we as a society should expect judges to consider when statutes may be open to multiple interpretations. Recognition of a

21. NEPA § 102(1), 42 U.S.C. § 4332(1).

22. *Id.*

23. *See infra* Part IV.

24. *See infra* Part V.

25. *See infra* Part VI.

26. *See, e.g.*, Eskridge & Frickey, *supra* note 9 (discussing “clear statement” rules).

27. *See, e.g.*, Lawrence M. Solan, *Precedent in Statutory Interpretation*, 94 N.C. L. REV. 1165 (2016); *see infra* Part II.

canon of construction places it within the appropriate bounds for making conclusions as to statutory meaning,²⁸ even if the existence of competing canons and competing principles means that no one canon will guarantee a precise outcome in a particular case.²⁹ Articulating a substantive environmental canon places ecological concerns on the same level, legally and rhetorically, with other fundamental rights and concerns. Doing so grants legitimacy to the consideration of the environment in judicial decision-making—an important reform to bring our legal system in line with scientific understanding of our role and responsibility in an ecologically interdependent world.

II. SUBSTANTIVE CANONS OF CONSTRUCTION AND ENVIRONMENTAL INTERESTS

Canons of construction are, generally speaking, the ground rules for judges in interpreting statutes. Eskridge described them as the “*lingua franca* of statutory interpretation.”³⁰ Substantive canons, within this *lingua franca*, are principles designed by judges “to protect important background norms derived from the Constitution, common-law practices, or policies related to particular subject areas.”³¹ Some of the substantive canons protect institutional concerns, maintaining relationships of federalism, and monitoring the separation of powers among government branches.³² Yet judges have formulated a set of these substantive canons of construction in order to tip the scales of justice, at times, to protect important, vulnerable interests.

Critics of the canons see them as meaningless, at best, and perhaps nefarious; because canons can frequently be found to support either side of a dispute over interpretation, judges may simply choose whichever ones best suit their prior assumptions or policy preferences with regard to the case.³³ According to this line of thinking, canons are unhelpful because they fail to provide predictable consistency in how judges will interpret statutory language.³⁴

28. See, e.g., Solan, *supra* note 27, at 1186 (“[J]udges continue to cite these canons, not as the starting point for justifying their application in a particular case, but rather for the purpose of suggesting that they are sufficiently authoritative because they were used in earlier cases.”).

29. Solan argues that substantive canons “are notoriously elastic and are applied so unevenly as to appear more as background values than as precise interpretive principles[,]” but notes that “courts take them seriously, and they appear to influence the outcome of cases.” *Id.* at 1187. In a recent empirical study, Anita Krishnakumar finds that Supreme Court Justices “duel[] over most textualist-preferred interpretive tools [at] roughly the same [rate as] . . . over purposivist-preferred interpretive tools[,]” suggesting that linguistic canons do not have any greater effect in ensuring consistent or predictable interpretations than tools such as legislative history or reference to congressional intent or purpose. Anita S. Krishnakumar, *Dueling Canons*, 65 DUKE L.J. 909, 914 (2016). All of this is to say that, with some frequency, judges do regularly employ canons of construction and seem to view them as legitimate bases for judicial reasoning in statutory interpretation cases, even if, in theory and in practice, they do not effectively constrain judges’ interpretations in a consistent way.

30. William N. Eskridge, Jr., *All About Words: Early Understandings of the “Judicial Power” in Statutory Interpretation, 1776-1806*, 101 COLUM. L. REV. 990, 1100 (2001) (emphasis added).

31. Krishnakumar, *supra* note 12, at 833.

32. *Id.* at 897–99.

33. See Llewellyn, *supra* note 11, at 401–06 (listing the “thrust” and “parry” of opposing canons).

34. Some recent scholarship has criticized substantive canons for playing too large a role in statutory interpretation and has suggested that judges assert fidelity to textualism while importing their policy

Skepticism as to whether canons of construction actually “bind” judges or cause them to reach results contrary to their general disposition or values does not make the canons meaningless. As Eskridge and Frickey have argued, canons may be important as *outputs*, even in cases where they do not appear to have been significant inputs in influencing a judicial decision: “canons are one means by which the Court expresses the value choices that it is making or strategies it is taking when it interprets statutes.”³⁵ Some measure of judicial choice or value judgment is necessarily a part of statutory interpretation, whether done in a textualist framework or otherwise.³⁶ Thus, canons can be meaningful as a way of organizing and legitimizing the discourse, and of laying out the factors and considerations that judges take into account in going about their task.³⁷ Context, to some degree, dictates the weight given to each of those factors and considerations.³⁸

Below are several substantive canons and presumptions that cut across different areas of law, with a brief examination of the source and justification for these canons. Environmental interests are analogous to many of the values—common law, statutory, and constitutional—underlying these canons. If such canons and rules are justified, then judges should also apply a robust environmental canon of construction.

A. Rule of Lenity

In criminal law, the rule of lenity originated as a common law principle: “penal statutes should be strictly construed against the government or parties seeking to enforce statutory penalties and in favor of the persons on whom penalties are sought to be imposed.”³⁹ Judges and commentators have justified this rule based on two main reasons: first, notice and due process concerns; and second, separation of powers.⁴⁰

preferences through the use of substantive canons. *See, e.g.,* Krishnakumar, *supra* note 12, at 835–39 (noting, while disagreeing with, this argument as the “prevailing wisdom” on substantive canons). Krishnakumar finds in an empirical study of Supreme Court decisions that the Roberts Court relied on substantive canons in 14.4% of a set of 603 statutory cases from 2005 to 2011. *Id.* at 850. This rate is lower than for other interpretive tools, but still represents a significant number of cases. *Id.* at 850–855.

35. Eskridge & Frickey, *supra* note 9, at 596.

36. *E.g.,* Siegel, *supra* note 7, at 184.

37. On the subject of the rule of lenity, Lawrence Solan argued that although it is “unrealistic” to expect consistency from rules of statutory interpretation,

[w]e can try to set a framework . . . to structure disputes so that disagreements focus on the issues upon which disagreement exists. In that way, even when we do not like the result of a particular case, we can at least say that the Court gave serious consideration to the significant issues.

Lawrence M. Solan, *Law, Language, and Lenity*, 40 WM. & MARY L. REV. 57, 144 (1998).

38. *See id.*

39. *Id.* at 58 (quoting 2B NORMAN J. SINGER, STATUTES AND STATUTORY CONSTRUCTION § 59.03 (5th ed. 1992)).

40. *See, e.g.,* Liparota v. United States, 471 U.S. 419, 427 (1985) (“Application of the rule of lenity ensures that criminal statutes will provide fair warning concerning conduct rendered illegal and strikes the appropriate balance between the legislature, the prosecutor, and the court in defining criminal liability.”).

Lenity serves due process interests by requiring that criminal statutes provide sufficiently clear notice of what specific conduct is prohibited.⁴¹ Another justification for the rule is that it furthers separation of powers, on the premise that the role of defining criminal conduct should rest with the legislative branch and should not be enlarged by the judiciary or left too much to prosecutorial discretion.

The underlying social value that the rule supports is the protection of accused persons from the risk of serious or irreversible harm to their liberty in the case of misinterpretation.⁴² The rule of lenity is thus motivated by “[a] combination of deeply held values and the frailties of the human condition.”⁴³ A brief exploration of how the rule of lenity has been applied sheds light on how it fulfills this value and provides examples of how the recognition of a substantive canon of construction impacts judges’ articulated decision-making process in judicial opinions interpreting statutes.

In seventeenth-century England, judges developed the rule as a means of thwarting harsh penal statutes, most of which called for capital punishment.⁴⁴ Judges would employ linguistic ambiguities as a means to temper the applicability of these laws, even when other readings would be more consistent with what, in all likelihood, was the intent of the statute.⁴⁵

In the United States, and especially in the modern era, the rule has been applied more narrowly. Chief Justice John Marshall wrote that the rule was based both “on the tenderness of the law for the rights of individuals; and on the plain principle that the power of punishment is vested in the legislative, not in the judicial department.”⁴⁶ Per Marshall, “though penal laws are to be construed strictly, they are not to be construed so strictly as to defeat the obvious intention of the legislature.”⁴⁷ Therefore, the rule had shifted from being a vehicle to frustrate (unduly harsh) legislative purposes to one that was limited to applications where the legislature’s intention was unclear. The rule is instead couched as deference to the legislature, with a preference for under applying the law rather than extending it—but with the purpose of erring on the side of preserving individual rights. In other words, given the importance of the right to liberty as a value in our legal system, courts decline to apply criminal statutes unless the legislature has made it clear that the conduct is to be prohibited and punished.

41. See *McBoyle v. United States*, 283 U.S. 25, 27 (1931) (“Although it is not likely that a criminal will carefully consider the text of the law before he murders or steals, it is reasonable that a fair warning should be given to the world in language that the common world will understand, of what the law intends to do if a certain line is passed.”) (quoted in Solan, *supra* note 37, at 134).

42. See, e.g., Shon Hopwood, *Clarity in Criminal Law*, 54 AM. CRIM. L. REV. 695, 701 (2017). In an era of criminal law codified in statute, distinct from the legal system of common-law crimes in which the rule of lenity originated, the rule must balance these goals with deference to the legislative branch. See Solan, *supra* note 37, at 59.

43. Solan, *supra* note 37, at 143.

44. See *id.* at 87.

45. See *id.* at 87–88 (describing examples of courts holding that a statute prohibiting “stealing horses” did not apply to a person who stole a single horse and that another criminalizing “stealing sheep or other cattle” was too ambiguous to be applied to any animal other than sheep themselves).

46. *United States v. Wiltberger*, 18 U.S. 76, 95 (1820).

47. *Id.* The question before the Court in the case was whether a statute that criminalized manslaughter on the “high seas” should be extended, by implication, to apply to conduct on a river in foreign territory. *Id.* at 87.

By the 1950s, the Supreme Court described the rule of lenity as thus: although criminal statutes should generally be given “commonsensical meaning . . . when choice has to be made between two readings of what conduct Congress has made a crime, it is appropriate, before we choose the harsher alternative, to require that Congress should have spoken in language that is clear and definite.”⁴⁸

As Solan has argued, a less-frequent application of the rule of lenity made sense in the jurisprudence that had developed by the mid-twentieth century.⁴⁹ Expanded use of legislative history and other contextual tools of statutory construction provided additional opportunities for courts to ascertain a clear meaning of the statute, making a determination that a statute is truly ambiguous and the actual application of the rule relatively rare.⁵⁰

These shifts in statutory interpretation have perhaps relegated the rule of lenity to a less prominent status, as a tiebreaker when other rules fail to resolve the question. In some cases, judges decide on a lenient interpretation on other grounds, simply noting that the rule of lenity also supports that position.⁵¹ However, courts continue to demonstrate the importance of the rule by citing it even when they decline to apply it. In a 2016 case before the Supreme Court, *Lockhart v. United States*, Justice Sotomayor wrote that “[w]e have used the lenity principle to resolve ambiguity in favor of the defendant only ‘at the end of the process of construing what Congress has expressed’ when the ordinary canons of statutory construction have revealed no satisfactory construction.”⁵²

Lockhart involved the application of mandatory minimum and increased maximum sentences for persons with certain prior convictions in the statute criminalizing possession of child pornography.⁵³ The six-Justice majority noted that two canons—the “last antecedent” rule and the “series-qualifier principle”— would point to opposing interpretations of the statute in question, but declined to apply the canon that would reach the more lenient result, holding instead that only the last antecedent rule was “well supported by context.”⁵⁴ Justice Kagan, on the other

48. *United States v. Universal C.I.T. Credit Corp.*, 344 U.S. 218, 221–22 (1952). For additional examples and explanation of the rule, see Eskridge & Frickey, *supra* note 9, at 600–01.

49. Several states also enacted legislation to abolish the rule; however, this has served to minimize it, rather than eliminate it entirely, as courts in California and New York, for example, have continued to use a form of it on the grounds of fairness and notice. See Solan, *supra* note 37, at 122–28.

50. See *id.* at 97–108.

51. See, e.g., *Yates v. United States*, 135 S. Ct. 1074 (2015) (overturning a conviction under the Sarbanes-Oxley Act for the destruction of fish that were evidence of a violation of federal fishing laws); see also *infra* Section V.C.

52. *Lockhart v. United States*, 136 S. Ct. 958, 968 (2016) (quoting *Callanan v. United States*, 364 U.S. 587, 596 (1961)). In another case, later in 2016, involving a bank fraud statute, the Supreme Court restated its recent jurisprudence, quoting from *Callanan* as well: “the rule [of lenity] applies if ‘at the end of the process of construing what Congress has expressed,’ there is ‘a grievous ambiguity or uncertainty in the statute.’” *Shaw v. United States*, 137 S. Ct. 462, 469 (2016) (citations omitted) (quoting *Callanan*, 364 U.S. at 596; *Muscarello v. United States*, 524 U.S. 125, 138–39 (1998)). In *Shaw*, the Supreme Court held that a statute prohibiting “defraud[ing] a financial institution” could be applied against a defendant, even where it could only be shown that he had the specific intent to steal money deposited in a bank yet held by an individual, rather than intent to deceive the bank itself. *Shaw*, 137 S. Ct. at 468–69.

53. *Lockhart*, 136 S. Ct. at 961.

54. *Id.* at 968.

hand, argued in her dissent that the series-qualifier canon was supported by legislative history, but noted also that “if any doubt remained, the rule of lenity would command the same result.”⁵⁵

The dialogue among Supreme Court Justices in recent cases such as *Lockhart* shows that the rule of lenity still remains as a legitimate authority for judges to turn to in interpreting ambiguous statutes. Both sides in such disputes find it necessary to address the rule in crafting their arguments. Inconsistency due to the lack of a definitive theory as to when a statute becomes sufficiently ambiguous for the application of the rule of lenity (or many other substantive canons of construction) can make the rule seem flexible.⁵⁶ However, even if the rule cannot provide an error-proof method for predicting the outcome of a particular case in advance, that would not mean it fails to serve important interests.⁵⁷

The “tenderness of the law for the rights of individuals[,]”⁵⁸ as John Marshall put it, suggests why the rule maintains some currency. Criminal law pits an individual’s liberty against the interests of the State. Because an errant interpretation may lead to irreversible harm to that liberty, the mere recognition of the rule of lenity encourages judges to wrestle with that balancing of interests in a way that might not otherwise occur; judges can rely on the rule in considering the equities of each competing reading of an ambiguous statute.

B. U.S.-Native American Law: Indian Canons of Construction

A second example of substantive canons of construction in the United States that tip the scales toward vulnerable or underrepresented interests is the set of so-called “Indian canons of construction” in law regarding Native American tribes. These canons require that “treaties, agreements, statutes, and executive orders be liberally construed in favor of the Indians and that all ambiguities are to be resolved in their favor.”⁵⁹ Further, treaties are to be read “in the sense in which they would naturally be understood by the Indians.”⁶⁰ Federal statutes, dating to an 1834 Act of Congress, incorporate the same rule in property disputes: in trials between a Native American and a white person, “the burden of proof shall rest upon the white

55. *Id.* at 969 (Kagan, J., dissenting). The focus by both the majority and dissent on the wording of the statute, despite general agreement that it was not well drafted, belies the importance of textualism to the Court in recent years. See David A. Strauss, *The Plain Language Court*, 38 CARDOZO L. REV. 651, 663–64 (2016). No one would really suggest that Congress, in drafting the statute at issue in *Lockhart*, was considering the finer points of whether the “last antecedent” or “series-qualifier” canons would be applied when courts interpreted it. As Strauss puts it, “it is very likely that the words were not written with that case in mind; if they had been written with that case in mind, the authors would have made the answer clear.” *Id.* at 669. In other words, the Court is accomplishing something other than deference to legislative intent with this line of arguments; however, the canons provided common ground on which the differing sides could rely in outlining their reasoning.

56. See Zachary Price, *The Rule of Lenity as a Rule of Structure*, 72 FORDHAM L. REV. 885, 890 (2004).

57. See *id.* at 890–91.

58. *United States v. Wiltberger*, 18 U.S. 76, 95 (1820).

59. COHEN’S HANDBOOK OF FEDERAL INDIAN LAW § 2.02[1] (Nell Jessup Newton ed., LexisNexis 2012); see also *Cty. of Oneida v. Oneida Indian Nation*, 470 U.S. 226, 247 (1985).

60. *Washington v. Wash. State Commercial Passenger Fishing Vessel Ass’n*, 443 U.S. 658, 676 (1979) (quoting *Jones v. Meehan*, 175 U.S. 1, 11 (1899)).

person, whenever the Indian shall make out a presumption of title in himself from the fact of previous possession or ownership.”⁶¹

The history of U.S. judicial decisions with regard to Native American peoples is replete with examples of grave injustice, both as European-descended settlers moved west, and later as the federal government pursued cycles of cultural assimilation policies.⁶² However, U.S. courts adopted rules of statutory construction that, at least in cases where courts saw ambiguity, cut against the broader pattern of dispossession, in favor of Native American interests.⁶³ These rules are consistent with a theory of substantive canons of construction rooted in public values of fairness and the protection of minorities and vulnerable interests.

Early U.S.-Native American law jurisprudence described the relationship between the United States and Native American tribes in paternalistic terms, as a trust relationship, with tribes as “domestic dependent nations . . . in a state of pupilage” and the federal government as a “guardian.”⁶⁴ Notwithstanding the limits this legal view placed on the autonomy of the tribes, it did provide “an aspirational aura over federal Indian law” that gave at least one justification for pro-Indian canons of construction.⁶⁵

In the seminal case, *Worcester v. Georgia*, Chief Justice Marshall described the Cherokee Nation as “a distinct community” but a “weak state,” placed “under the protection of one more powerful.”⁶⁶ Language in the 1791 Cherokee treaty at issue in the case conceded to the U.S. Congress “the sole and exclusive right of regulating the trade with the Indians, and *managing all their affairs*, as they think proper.”⁶⁷ Although the Court could perhaps have read the italicized phrase to include political management, which would undercut Cherokee sovereignty, Marshall interpreted this as referring only to subjects connected with trade.⁶⁸ To go any further, the Court reasoned, could not conceivably have been within the tribe’s intent and understanding of the agreement represented by the treaty.⁶⁹ Frickey described the case as “[beginning] the notion that treaties are to be interpreted as the Indians would have understood them.”⁷⁰

61. 25 U.S.C. § 194 (2012). For an example of a case involving this provision, see *Wilson v. Omaha Indian Tribe*, 442 U.S. 653 (1979) (reaffirming the standard of shifting of the burden of proof, pursuant to 25 U.S.C. § 194, but remanding the case on other grounds for resolution in state courts).

62. See generally *Johnson v. M’Intosh*, 21 U.S. 543 (1823) (recognizing only a “right of occupancy” by Native Americans to their lands and legalizing the extinguishment of Indian title by conquest or purchase). For more on *Johnson* and other cases, see WALTER R. ECHO-HAWK, *IN THE COURTS OF THE CONQUEROR: THE 10 WORST INDIAN LAW CASES EVER DECIDED* (2010). The most grievous legal injustices to Native Americans were, of course, not limited to court decisions, but also included legislation. See, e.g., The Dawes Act of 1887, Pub. L. 49-119, 24 Stat. 388 (1887) (breaking up tribal ownership of lands).

63. David M. Blurton, *Canons of Construction, Stare Decisis and Dependent Indian Communities: A Test of Judicial Integrity*, 16 ALASKA L. REV. 37, 39–40 (1999).

64. *Cherokee Nation v. Georgia*, 30 U.S. 1, 17 (1831).

65. Philip P. Frickey, *Congressional Intent, Practical Reasoning, and the Dynamic Nature of Federal Indian Law*, 78 CALIF. L. REV. 1137, 1176–77 (1990).

66. *Worcester v. Georgia*, 31 U.S. 515, 561 (1832).

67. *Id.* at 553 (emphasis in original).

68. *Id.* at 554.

69. *Id.* at 553–54.

70. Frickey, *supra* note 65, at 1177.

The preference for construing laws and policies related to Native Americans in their favor serves a goal of promoting clarity in actions among recognized sovereigns, as well as substantive concerns of fairness. In recognition of the fact that negotiations between Native Americans and the U.S. government took place in English, and on terms dictated mostly (if not entirely) by the United States, Marshall's interpretation in *Worcester* reflected an understanding that this process indicated great inequity between the parties and the vast difference in their bargaining power.⁷¹

Marshall also went further. In the decades that had passed between the Cherokee's treaty and the time *Worcester* was decided, the United States had "operat[ed] on the assumption that it had plenary power over tribes" and had, among other things, elected Andrew Jackson.⁷² However, Marshall maintained the importance of the earlier treaty. As Frickey describes it, principles of interpretation required "measuring Indian interests from their strongest historical perspective, even if . . . in the contemporary circumstances they seem weaker."⁷³ "Essentially . . . Justice Marshall decided that it should not count against Indian interests that colonization was taking a toll."⁷⁴

Given Marshall's political position as a judge representing the institutions of the colonizers, a charitable reading of his jurisprudence—which had disastrous practical consequences for Native American rights—is that he was faced with the inevitable conclusion that he "could not entertain fundamental challenges to colonization."⁷⁵ Instead, Marshall used rules of interpretation to displace the responsibility for the destruction of tribal sovereignty toward Congress, which could ratify colonial prerogatives through a clearer expression of legislation.⁷⁶

There are significant theoretical parallels between the Indian canons of construction and an envisioned environmental canon of construction. I do not mean to compare interpretations of environmental law with the tremendous, unspeakable human cost and injustice that Europeans have waged against the Americas' original peoples over more than five centuries. The specific legal tool of the canon of construction, though, is instructive in looking for analogies to environmental law principles. Recognition of an interpretative rule favoring environmental concerns remains within the existing anthropocentric and utilitarian order that prioritizes human interests over "nature." As such, it does not guarantee environmentally optimal or beneficial outcomes. Rather, it encourages judges to engage with the clash of values inherent in environmental and natural resources disputes, whether they implicate intra- or intergenerational equality or more "pure" ecological concerns. As the Marshall Court's decisions forced Congress to take responsibility for its policies, an environmental canon places the responsibility for making decisions of lasting environmental consequences on the legislative branch, with greater deliberation required, rather than allowing the legal system to continue to shore up anthropocentric decisions under the guise of tradition and inertia.

71. *Id.* at 1226.

72. *Id.* at 1227.

73. *Id.* at 1128.

74. *Id.*

75. *Id.*

76. See Frickey, *supra* note 65, at 1128.

An additional lesson is the suggestion that, despite the passing of time, courts can continue to regard vulnerable interests at their apex. This is tremendously consequential in cases involving environmental degradation where, for example, the manner for setting the baseline condition of a parcel of land and its surroundings can determine what property owners can legally do or the extent to which governments can regulate uses without effectuating a compensable taking.⁷⁷ Reasonable expectations regarding the use of property should, in this way, depend not only on the point in time in which environmental and ecosystem services on the land were at their lowest value (and in which property owners enjoyed the greatest discretion), but also on consideration of the full value of those environmental interests,⁷⁸ free from and prior to human-caused degradation.

In more recent times, reliance on the canons in Indian law has declined; during a prolonged period of the Rehnquist Court, from 1986-2001, Native American tribes lost seventy-seven percent of their cases before the Supreme Court.⁷⁹ However, as with the rule of lenity, the continued recognition of the rule— even if it does not always prove determinative in a case—demonstrates a degree of judicial commitment to the value of protecting underrepresented interests. When one side appeals to the canon, judges must wrestle with whether the law is sufficiently clear to work a result against those interests.

C. *Contra Proferentem* in the Interpretation of Contracts

In contract law, the *contra proferentem* rule provides that ambiguous provisions should be construed against the contract's drafter. As formulated in the Second Restatement of Contracts: "In choosing among the reasonable meanings of a promise or agreement or a term thereof, that meaning is generally preferred which operates against the party who supplies the words or from whom a writing otherwise proceeds."⁸⁰

Although this rule has to do with the interpretation of contracts, rather than statutes, the rule is similar to the canons discussed above in two significant ways. First, the *contra proferentem* rule is supported by a policy choice to protect the interests of parties with less bargaining power who were not given an adequate opportunity to shape the agreement.⁸¹ Second, an efficiency-based argument sup-

77. See, e.g., *Murr v. Wisconsin*, 137 S. Ct. 1933 (2017); see also *Lucas v. S.C. Coastal Council*, 505 U.S. 1003 (1992).

78. See *Lucas*, 505 U.S. at 1070.

79. David H. Getches, *Beyond Indian Law: The Rehnquist Court's Pursuit of States' Rights, Color-Blind Justice and Mainstream Values*, 86 MINN. L. REV. 267, 280 (2001). Getches argued that these results in Indian law cases were explained by dominant trends toward states' rights, away from protection of the rights of racial minorities, and toward protection of "mainstream values," all of which led the Court to ignore or brush aside long-standing precedents and principles in Indian law. *Id.* at 268–69.

80. RESTATEMENT (SECOND) OF CONTRACTS § 206 (AM. LAW INST. 1981).

81. See *DirecTV, Inc. v. Imburgia*, 136 S. Ct. 463, 475–76 (2015) (Ginsburg, J., dissenting) (referring to "the rule that ambiguous language should be construed against the drafter" and arguing that it should have been used in the case to favor satellite TV customers).

ports the rule as an incentive for clarity in articulating contracts—much as the canons in criminal and Indian law look toward a clear statement by the legislative branch.⁸²

Environmental and natural resource laws are, in a sense, “contracts” that govern society’s interactions with the environment (i.e., what can be released into the environment, as well as what can be taken out of it). Laws that impact the environment also represent a “contract” between present generations and future generations that will depend on the same resources and ecosystem services.⁸³

Contract law also embraces the notion of default rules or background principles that kick in when an agreement is silent or when circumstances occur that the parties did not think to consider in their negotiation.⁸⁴ The common law maxim in property law, *sic utere tuo ut alienum non laedas*, provides that property should not be used so as to injure that of another.⁸⁵ Borrowing from Aldo Leopold’s land ethic as well, the default normative rule is that one should not act in a way that tends to harm the ecological integrity of the environment.⁸⁶ Taken together, these provide a default presumption in contracts between society and the environment that one may not take actions that create a negative external impact on the environment or that create a foreseeable negative impact on future generations.

Earth’s ecosystems, of course, have no opportunity to shape or provide input to these sorts of actions, and neither do future generations, beyond what interests are represented by people today who are concerned about these impacts. Therefore, the same values that promote the *contra preferentem* rule animate the idea that statutes permitting environmental impacts (even in the language of limiting or restricting environmental harms) should be read with caution; and where there is ambiguity, with a preference for interpretations that limit human impacts and preserve ecological integrity and the interests of generations to come.

D. *Carolene* Footnote Four Groups

The famous fourth footnote from *United States v. Carolene Products Co.* (“*Carolene Products*”)⁸⁷ stands for the proposition that judges should examine statutes differently if they affect “certain groups that cannot participate effectively in the

82. Cf. RESTATEMENT (SECOND) OF CONTRACTS §206 cmt. a (observing that the drafter of a contract is “more likely than the other party to have reason to know of uncertainties of meaning[.]” and therefore that the rule incentivizes the drafter to use clear terms).

83. See generally EDITH BROWN WEISS, IN FAIRNESS TO FUTURE GENERATIONS: INTERNATIONAL LAW, COMMON PATRIMONY, AND INTERGENERATIONAL EQUITY (Richard Falk et al. eds., 1989) (on responsibilities to future generations); MARY CHRISTINA WOOD, NATURE’S TRUST: ENVIRONMENTAL LAW FOR A NEW ECOLOGICAL AGE (Cambridge Univ. Press, 2014) (on trust-like responsibilities more broadly with regard to the environment).

84. Ian Ayres & Robert Gertner, *Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules*, 99 YALE L.J. 87, 87 (1989).

85. *Vill. of Euclid v. Ambler Realty Co.*, 272 U.S. 365, 387–88 (1926) (noting this principle and nuisance law in support of zoning restrictions).

86. See ALDO LEOPOLD, A SAND COUNTY ALMANAC 201–26 (Oxford Univ. Press, 1968).

87. U.S. 144, 152 n.4 (1938).

political process.”⁸⁸ The reasoning behind that approach, which has significantly influenced thinking about judicial review, is that judges must play a role in preserving the due process and equal protection rights of “discrete and insular minorities.”⁸⁹

In the context of statutory interpretation, Eskridge and Frickey described how the Supreme Court has favored interpretations offering greater protection to *Carolene* groups’ interests.⁹⁰ This is done, in part, in connection with the canon of constitutional avoidance: construing a statute in favor of a suspect classification averts the need to review its constitutional validity under a higher level of scrutiny.⁹¹

Environmental interests and rights related to the environment are not “minority” interests in the sense of protected *Carolene* groups, although protected classes, such as racial minorities, do bear disproportionate environmental burdens.⁹² However, the process-based justification—that such classifications are not adequately protected by the usual political process—translates quite well to matters of environmental protection and the enjoyment of human rights related to the environment.

Environmental pollution is often cited as an example of market failure because the social costs associated with environmentally damaging activities are often shouldered by individuals, communities, and generations that do not share equitably in the economic or social benefits from those activities.⁹³ Negative environmental externalities, if left uncorrected, lead to inequitable and inefficient results for social welfare. Environmental harms, however, also result from “government failure” in multiple ways. Asymmetries between the diffuse, common benefits of ecosystem services (clean air, clean water, etc.) and concentrated economic benefits of environmentally damaging activities can distort legislative policy priorities and outcomes.⁹⁴ Agency “capture” in environmental policymaking at the federal, state, or local level can also lead to socially undesirable outcomes.⁹⁵ Political processes, for these reasons, may not adequately consider the environmental impacts of legislation.

A rule of liberal construction in favor of *Carolene* groups provides a buffer of protection for interests that the usual political process will not adequately safe-

88. Lewis F. Powell, Jr., *Carolene Products Revisited*, 82 COLUM. L. REV. 1087, 1089 (1982). See also Felix Gilman, *Famous Footnote Four: A History of the Carolene Products Footnote*, 46 S. TEX. L. REV. 163, 174 (2004) (regarding the “political process model” of judicial review and the *Carolene* footnote).

89. *Carolene Products*, 304 U.S. at 152 n.4.

90. See Eskridge & Frickey, *supra* note 9, at 602–03 (describing the substantive canon of “[l]iberal [c]onstruction of [s]tatutes to [p]rotect *Carolene* [g]roups,” with examples of cases related to African Americans, Native Americans, noncitizens, etc.).

91. See *id.*

92. See generally LeRoy C. Paddock, *Environmental Justice*, in 2 DECISION MAKING IN ENVIRONMENTAL LAW, ELGAR ENCYCLOPEDIA OF ENVIRONMENTAL LAW 357 (LeRoy C. Paddock et al. eds., 2016).

93. See generally Daniel C. Esty, *Toward Optimal Environmental Governance*, 74 N.Y.U. L. REV. 1495, 1503–08 (1999) (discussing market failures as a cause of environmental harms).

94. See DANIEL A. FARBER & PHILIP P. FRICKEY, *LAW AND PUBLIC CHOICE: A CRITICAL INTRODUCTION* 6, 28 (1991) (discussing the insights of public choice theory for understanding the provision of environmental “public goods” and how laws can be distorted to benefit discrete economic groups at the expense of the public).

95. See generally Martin Lodge, *Regulatory Capture Recaptured*, 74 PUB. ADMIN. REV. 539, 539–42 (2014).

guard. To the extent that the environment and future generations suffer from government failures, the same underlying value supports an environmental canon of construction.

E. Broad Interpretation of Public Welfare Statutes and Statutes with a Remedial Purpose

A further example that may guide judicial interpretation of environmental statutes is the general rule of liberal construction of laws intended to promote the public welfare or that have a “remedial purpose.”⁹⁶ This canon bolsters claims for a strong purposivist interpretation of environmental statutes, particularly where their overall purpose is clearly tied to public health. Although courts have not widely relied on the remedial purpose canon in reading most major environmental statutes—such as the Clean Air Act and Clean Water Act—the canon does have a history of application to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which regulates hazardous waste.⁹⁷

Closely related to this canon on public welfare and remedial statutes is a doctrine that originated in English courts, known as the “equity of the statute.”⁹⁸ Under this doctrine, judges look to the reasoning or purpose underlying a statute, and will apply its logic and terms to cases that do not fall within the statute’s express language, but are within the statute’s purpose—consistent with the spirit of the law.⁹⁹ Although the doctrine is not commonly cited in modern U.S. courts, Llewellyn, in his “thrust and parry” list of canons, included the similar maxim that “[t]o effect its purpose a statute may be implemented beyond its text[.]” as the counterweight to the charge that “[a] statute cannot go beyond its text.”¹⁰⁰

The significance of this canon is its suggestion that a statute’s public purpose can be a legitimate and appropriate source of authority for judges to rely on. When it comes to statutes traditionally considered part of “environmental law,” judicial employment of an environmental canon of construction would look, in practice, nearly identical to a strong purposivist reading based on the remedial purposes

96. See Joel A. Mintz, *Can You Reach New “Greens” if You Swing Old “Clubs”? Underutilized Principles of Statutory Interpretation and their Potential Applicability in Environmental Cases*, 7 ENVTL. L. 295, 302–08 (2001).

97. See *id.* at 304 n.28 (citing a multitude of federal district court opinions employing the remedial purpose canon in CERCLA cases); see also Blake A. Watson, *Liberal Construction of CERCLA Under the Remedial Purpose Canon: Have the Lower Courts Taken a Good Thing Too Far?*, 20 HARV. ENVTL. L. REV. 199 (1996).

98. See Mintz, *supra* note 96, at 308–14. But see John F. Manning, *Textualism and the Equity of the Statute*, 101 COLUM. L. REV. 1, 8 (2001) (arguing that calls for the equity of the statute doctrine in the United States fail because of differences in the U.S. Constitution’s separation of powers and defined role of the judiciary within the overall governmental structure, as compared with English common law traditions).

99. See Mintz, *supra* note 96, at 308; Manning, *supra* note 98, at 22. Manning, as a critic of scholars who have pushed for the use of the “equity of the statute” doctrine in the United States, characterizes the doctrine as a departure from the “faithful agent” theory of statutory interpretation. *Id.* Yet the doctrine’s focus on *purpose* suggests that it is not a rejection of the analogy of courts as agents of Congress; rather, it is a deep division in the scope of judicial prerogative in ascertaining and defining the will of Congress.

100. Llewellyn, *supra* note 11, at 401.

canon.¹⁰¹ Of course, the environmental canon of construction that has been described above is broader. It applies beyond a specific set of statutes to any federal law with the potential to significantly affect environmental interests.

F. Environmental Interests as Public Values

The five examples above illustrate the ways in which certain common underlying public values with regard to the law influence statutory interpretation. The rule of lenity, Indian canons of construction, and recognition of *Carolene* groups all point toward a substantive preference—when interpreting ambiguous statutes—toward interpretations that protect vulnerable or underrepresented interests. Contract law’s interpretative rules suggest, by analogy, the same principle in safeguarding vulnerable interests when construing legal instruments. Rules of broad construction for statutes with a purpose of promoting public welfare or remedying harms to the public point toward the legitimacy of weighing public values in judicial decision-making.

Environmental interests—speaking both of concern over threats to ecological integrity per se, as well as to anthropocentric rights and interests that depend on a healthy, functioning environment—deserve similar protection. Decisions and policy choices we make today may affect the wellbeing, rights, and opportunities of present and future generations in ways that cannot be easily reversed.¹⁰² The precautionary principle in environmental law and policy, recognized at the international level in the 1992 Rio Declaration on Environment and Development, reflects this concern.¹⁰³ Twenty-five years after the Rio Declaration, however, environmental law in the United States remains stagnant. While our understanding of climate change, air pollution, species extinctions, and other environmental crises has changed, the core legal framework for addressing these concerns has not¹⁰⁴—and continued environmental degradation highlights the degree to which the interests of current and future generations in an ecologically sustainable environment are vulnerable and underrepresented in the legislative process.

An environmental canon of construction cannot, of course, address all of the legal system’s challenges in dealing with relationship between humans and the environment. But a canon of construction is justified because it will serve important public interests in a manner similar to other substantive canons. As shown further in the next section, environmental principles in interpreting statutes are, in fact,

101. In these cases, the National Environmental Policy Act (NEPA) bolsters the statute-specific remedial purpose canon by calling for interpretation of all statutes in a manner consistent with NEPA’s environmental policies. See *infra* Part III.

102. See generally WEISS, *supra* note 83 (on responsibilities to future generations); WOOD, *supra* note 83 (on trust-like responsibilities more broadly with regard to the environment).

103. U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, princ. 15, U.N. Doc. A/CONF.151/26 (Vol. I), agenda 21 (June 1992) (“In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”).

104. For example, the Clean Air Act was last amended in 1990, and the last major changes to the Clean Water Act were in 1987. Clean Air Act Amendments of 1990, Pub. L. 101-549, 104 Stat. 2399 (1990); Water Quality Act of 1987, Pub. L. 100-4, 101 Stat. 7 (1987).

what Congress has also compelled: a requirement that judges interpret the law in a manner that promotes environmental sustainability.¹⁰⁵

III. NEPA'S MANDATE FOR AN ENVIRONMENTAL CANON OF CONSTRUCTION

The National Environmental Policy Act (NEPA),¹⁰⁶ signed by President Nixon in 1970, transformed U.S. law by laying out a policy “to create and maintain conditions under which [humans] and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.”¹⁰⁷ NEPA has been a touchstone of environmental law in the United States for nearly fifty years. As one of the first major environmental statutes, it fundamentally altered federal decision-making. NEPA is best known for its provisions on environmental impact assessment. It requires “all agencies of the Federal Government” to study and disclose in an environmental impact statement (EIS) the impacts (and alternatives) for all proposed “major Federal actions significantly affecting the quality of the human environment”¹⁰⁸

Environmental impact assessment is a key element of an environmental policy; it requires government actors to consider environmental values in their decision-making process, alongside other objectives in designing and refining policy. NEPA’s requirement, along with the implementing regulations developed by the Council on Environmental Quality¹⁰⁹ that flesh out how agencies conduct these assessments, has served as a pattern for states and for many countries throughout the world.¹¹⁰ Courts have generally characterized NEPA’s environmental impact assessment provision as a procedural requirement.¹¹¹ It requires agencies to carry out the process thoroughly and in good faith to understand the expected environmental impacts of proposed projects and alternatives, but does not, courts have concluded (or at least assumed), mandate a substantive level of environmental quality that must be met for a proposed activity to go forward.¹¹² By 1989, the Supreme

105. See *infra* Part III (analyzing Section 102(1) of the National Environmental Policy Act).

106. National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (codified at 42 U.S.C. §§ 4321–4370h (2012)).

107. 42 U.S.C. § 4331(a) (2012).

108. § 4332(2)(C).

109. 40 C.F.R. pts. 1500–1508 (2018).

110. See U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, princ. 17, U.N. Doc. A/CONF.151/26 (Vol. I), agenda 21 (June 1992) (calling on countries to undertake environmental impact assessment “for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision of a competent national authority”). In Brazil, for example, the country’s Constitution, adopted in 1988, requires environmental impact assessment prior to “activities which may potentially cause significant degradation of the environment.” CONSTITUIÇÃO FEDERAL [C.F.] [CONSTITUTION] art. 225 § 4 (Braz.).

111. See, e.g., *Calvert Cliffs’ Coordinating Comm., Inc. v. U.S. Atomic Energy Comm’n*, 449 F.2d 1109, 1112 (D.C. Cir. 1971) (“[NEPA] leaves room for a responsible exercise of discretion and may not require particular substantive results in particular problematic instances. However, the Act also contains very important ‘procedural’ provisions—provisions which are designed to see that all federal agencies do in fact exercise the substantive discretion given them.”).

112. *Id.*; see generally Daniel R. Mandelker, *The National Environmental Policy Act: A Review of Its Experience and Problems*, 32 WASH. U.J.L. & POL’Y 293 (2010). Sam Kalen has laid out the legislative history of NEPA in detail, concluding that Congress intended a more significant substantive mandate to shape policy toward environmental protection, and stating the case that the assumption by early courts and subsequent

Court stated that “it is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process[,]” and that “NEPA merely prohibits uninformed—rather than unwise—agency action.”¹¹³

Despite the importance of the EIS in environmental decision-making, much of NEPA’s promise remains unfulfilled.¹¹⁴ Earlier in the statute, NEPA provides not only a statement of principles that make up a national environmental policy, but also a far-reaching principle of interpretation.¹¹⁵ Section 102 of NEPA—the same section that gives rise to the EIS—begins with the following first clause and subsection: “The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this [Act.]”¹¹⁶ As Joel Mintz has noted, this provision, despite its clarity, has largely been ignored by both lawyers and judges.¹¹⁷

The “policies” referred to in Section 102(1) are found in the previous section. Section 101 makes it

the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, *to create and maintain conditions under which [humans] and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.*¹¹⁸

Subsections (b) and (c) give further instructions about how this policy is to be implemented:

(b) In order to carry out the policy set forth in this chapter, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may—
(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

commentators that NEPA only requires procedural compliance is indeed only an assumption. See Sam Kalen, *Ecology Comes of Age: NEPA’s Lost Mandate*, 21 DUKE ENVTL. L. & POL’Y F. 113, 116–17 (2010).

113. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350–51 (1989).

114. See generally Kalen, *supra* note 112.

115. See 42 U.S.C. §§ 4331–4332 (2012).

116. § 4332(1).

117. Joel A. Mintz, *Taking Congress’s Words Seriously: Towards a Sound Construction of NEPA’s Long Overlooked Interpretation Mandate*, 38 ENVTL. L. 1031, 1051 (2008). In over four decades of NEPA history, only six published judicial opinions had directly applied this section, and did so only in the context of administrative agency interpretation, rather than judicial interpretation. See *id.* at 1037–41. One Ninth Circuit case in 2003 quoted it, but its treatment of the provision was also limited. See *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1166 (9th Cir. 2003).

118. § 4331(a) (emphasis added).

- (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
 - (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
 - (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
 - (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
 - (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.
- (c) The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.¹¹⁹

Key legislators involved in drafting NEPA indicated that this lengthy list of policies was intended to transform federal policy by requiring “substantive attention” to be given to environmental matters.¹²⁰ Notably, Section 101(c) includes language regarding a human right to a healthful environment, a right since guaranteed in the constitutions of several dozen countries, as well as several U.S. states.¹²¹ Even though NEPA does not list this or other concepts in terms of substantive rights, they are clearly stated as policy considerations that must be supported through “*interpret[ation] and administ[r]ation*” of “*the policies, regulations, and public laws of the United States*.”¹²²

Notwithstanding the text of Section 102(1) and its “interpretation” mandate, very few court decisions have applied this subsection. NEPA-related litigation and judicial decisions have instead been subsumed by implementation of the environmental impact assessment requirement.¹²³ In 2008, Mintz examined the judicial application of the provision, noting that courts had only addressed it in six reported opinions—all from the 1970s—and none had directly analyzed the question of how NEPA should influence *judicial* statutory interpretation generally (as opposed to agency interpretations or implementation of NEPA).¹²⁴

One issue in understanding the effect of NEPA’s Section 102(1) is which branch(es) of government must follow the mandate to “interpret” laws, policies,

119. § 4331(b)–(c).

120. See Kalen, *supra* note 112, at 142–43 (citing statements from Senator Jackson and revisions made at the committee level in the Senate).

121. See, e.g., Nicholas Bryner, *A Constitutional Human Right to a Healthy Environment*, in RESEARCH HANDBOOK ON FUNDAMENTAL CONCEPTS OF ENVIRONMENTAL LAW 168 (Douglas Edgar Fisher ed., 2016) (discussing and comparing examples of constitutional environmental human rights).

122. § 4332(1) (emphasis added).

123. See Mintz, *supra* note 117.

124. See *id.* at 1032. A more recent case, decided by the Ninth Circuit in 2003, quoted Section 102(1), but referred to it only in the context of “strictly interpret[ing]” “[t]he procedures prescribed both in NEPA and [its] implementing regulations . . . ‘to the fullest extent possible’ in accord with the policies embodied in the Act.” *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1166 (9th Cir. 2003).

and regulations in accordance with environmental policies: does it apply to administrative agencies, courts, or both? Mintz's review of the legislative history of NEPA provides no conclusive answer to this question. Most of the debate that exists in the public record was focused on the extent to which federal agencies would be forced to implement the Act.¹²⁵ However, there is no textual indication that Section 102(1) is limited only to agency interpretations. Section 102(2) specifically targets agencies, beginning with "all agencies of the Federal Government shall . . ." ¹²⁶ Section 102(1) contains no such language.¹²⁷ Without it, the most natural way to read Section 102(1)'s charge that "the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with" NEPA's policies,¹²⁸ therefore, is that it "applies to all governmental entities in all branches of the federal government that are responsible for the interpretation as well as the administration of our nation's policies, regulations, and public laws."¹²⁹

In the six cases that grapple with this provision, courts have generally examined it only in the context of agency interpretation and implementation.¹³⁰ These cases led to mixed results. In two cases, federal courts cited Section 102(1) in holding that certain activities of the Department of Transportation and the U.S. Army Corps of Engineers, respectively, were indeed subject to the NEPA environmental impact statement requirement.¹³¹ A third court quoted Section 102(1) in reference to the Secretary of the Interior's interpretation of a federal statute (the Helium Act), noting then that if "the Secretary interpreted the objectives of the [statute] in an erroneous or unnecessarily restrictive manner, his action would be contrary to not only [that statute], but NEPA as well; the statutes themselves clearly provide 'law to apply.'"¹³² Two other cases rejected litigants' claims that Section 102(1) should be used to interpret other statutes together with NEPA—the Revenue Sharing Act and the statute that created the Tahoe Regional Planning Agency—in a way that would make environmental impact statements necessary for the agencies involved.¹³³

A final 1970s case addressing Section 102(1) involved the Department of the Interior's implementation of the Mineral Leasing Act.¹³⁴ The petitioners had argued that NEPA required the Bureau of Land Management to interpret the Mineral Leasing Act to give the agency discretion to deny a coal lease application to a permittee

125. See Mintz, *supra* note 117, at 1033–35.

126. § 4332(2).

127. See § 4332(1).

128. *Id.*

129. Mintz, *supra* note 117, at 1037.

130. See *id.* at 1038–41.

131. See *Arlington Coal. on Transp. v. Volpe*, 458 F.2d 1323 (4th Cir. 1973) (NEPA applied to U.S. Department of Transportation for highway project proposal); *Sierra Club v. Froehlke*, 359 F. Supp. 1289 (S.D. Tex. 1973), *rev'd on other grounds sub nom. Sierra Club v. Callaway*, 499 F.2d 982 (5th Cir. 1974). These cases are discussed in Mintz, *supra* note 117, at 1038–39.

132. *Nat'l Helium Corp. v. Morton*, 361 F. Supp. 78, 92 (D. Kan.), *rev'd on other grounds*, 486 F.2d 995 (10th Cir. 1973); see Mintz, *supra* note 117, at 1038.

133. *Carolina Action v. Simon*, 389 F. Supp. 1244 (M.D.N.C. 1975), *aff'd*, 522 F.2d 295 (4th Cir. 1975) (holding that the Department of the Treasury did not need to prepare an EIS for distribution of funds to local governments); *California v. S. Lake Tahoe*, 466 F. Supp. 527 (E.D. Cal. 1978) (EIS not required for Tahoe Regional Planning Agency's road project).

134. *Nat. Res. Def. Council, Inc. v. Berklund*, 609 F.2d 553 (D.C. Cir. 1979).

that had otherwise met the statutory criterion of discovering “commercial quantities” of coal.¹³⁵ The D.C. Circuit held that NEPA did not override the “plain meaning” of the Mineral Leasing Act and a consistent history of agency practice.¹³⁶

These few cases give some added shape to judicial review of agency implementation of NEPA and of the interpretation of various statutory mandates in light of NEPA’s environmental impact statement requirements. Yet courts have not approached the more general question of whether and how the language provides guidance on judicial statutory interpretation.

Despite interpretations of NEPA as a statute with procedural, rather than substantive mandates, the statute provides clear direction to judges in support of an environmental canon of construction. Pursuant to the policy given in NEPA, whenever possible, statutes must be read in a manner that best promotes environmental sustainability and does not compromise the interests of future generations. There is no qualifier as to whom Section 102(1) of the statute applies; therefore, NEPA’s directive—that regulations, laws, and public laws of the United States be interpreted according to the environmental policies listed—should guide judges in their work.

NEPA requires this interpretation to be done “to the fullest extent possible[.]”¹³⁷ a phrase consistent with the notion that ambiguous statutes should be read in a manner that tends to favor ecological integrity and human health. As Mintz points out, there is a well-developed line of jurisprudence on the phrase “to the fullest extent possible” that qualifies all of Section 102—both the interpretation and administration mandate as well as the environmental impact assessment requirement.¹³⁸ This interpretative principle, limited to the “possible,” does not ask courts to alter the plain meaning of statutes, but rather compels the consideration of environmental policies in weighing competing possible interpretations.¹³⁹ Again, the environmental canon of construction I have proposed does not mandate a substantive measure of environmental quality, but rather requires legal and linguistic clarity if a statute or regulation is to be applied in a way that potentially harms environmental interests and the interests of future generations.

No court has directly applied NEPA’s Section 102(1) to its own process for statutory interpretation in a particular case. However, NEPA’s interpretive mandate is a clear congressional expression for an environmental canon of construction. NEPA provides significant evidence of the presence of public environmental values consonant with the other values that substantive canons of construction reinforce. The value of environmental sustainability for present and future generations supports a substantive preference in statutory cases toward an interpretation that best protects environmental interests.

The justification for doing so is rooted in principles that are familiar throughout the U.S. legal system. As shown further in the next section, such a shift in judicial

135. *See id.* at 558.

136. *See id.*

137. 42 U.S.C. § 4332 (2012).

138. *See Mintz, supra* note 117, at 1041–44.

139. *See id.*

reasoning to accommodate environmental concerns has precedent in other U.S. legal doctrines and in examples of pro-environment statutory construction principles in other countries.

IV. SHIFTS IN LEGAL DOCTRINE TO ENGAGE WITH ENVIRONMENTAL CONCERNS: PRECEDENTS IN THE UNITED STATES AND ELSEWHERE

An environmental canon of construction calls for the interpretation of ambiguous statutes in a manner that is most likely to afford the greatest protection of ecological integrity and human health. Justified by the text of NEPA and on the grounds that the judiciary ought to safeguard vulnerable interests, this canon would apply to any law with the potential to negatively impact the environment, even where the statute at issue does not itself describe a clear environmental purpose.¹⁴⁰

This ecological theory of statutory interpretation marks a shift in legal doctrine. Yet this sort of transformation in legal reasoning is not unprecedented; examples in U.S. law and in comparative law contexts demonstrate how legal paradigms have changed to engage with environmental challenges. The line of judicial decisions on standing and access to judicial review for parties representing environmental interests portrays an analogous process, where environmental consciousness altered legal doctrine in ways that might have previously seemed unlikely. As comparative examples, the principle *in dubio pro natura*—when in doubt, decide in favor of nature—has reshaped statutory interpretation, and the recognition of an *ecological function of property* has redefined traditional thinking about property rights. These experiences provide a pattern to show how an environmental canon of construction can be incorporated into U.S. law.

A. Changing Doctrines of Standing

Before the modern era of environmental law that began in the mid-twentieth-century, judicial application of environmental norms was done largely as a matter of private law.¹⁴¹ Nuisance law provided judicial redress against substantial and unreasonable interference with the use and enjoyment of property, but the ability to bring a claim was limited to those neighbors with recognized property interests.¹⁴²

140. This point is critical, especially given that the major environmental statutes in the United States stand unchanged in nearly three decades since the Clean Air Act was last amended in 1990. See Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399 (1990). While the main pillars have stood in place, scientific understanding of environmental issues has evolved significantly, and environmental issues are ever more commonly regulated by laws “outside the canon” of environmental law, and as a part of larger, non-environmental programs spread across different government agencies. See Todd S. Aagaard, *Environmental Law Outside the Canon*, 89 IND. L.J. 1239 (2014).

141. See, e.g., Karen Morrow, *The Courts, Nuisance and Environmental Pollution—A Matter of Will?*, in 2 DECISION MAKING IN ENVIRONMENTAL LAW, ELGAR ENCYCLOPEDIA OF ENVIRONMENTAL LAW 52, 56 (LeRoy C. Paddock et al., eds. 2016).

142. See RESTATEMENT (SECOND) OF TORTS § 822 (AM. LAW INST. 1979) (“One is subject to liability for a private nuisance if, but only if, his conduct is a legal cause of an invasion of another’s interest in the private use and enjoyment of land, and the invasion is either (a) intentional and unreasonable, or (b) unintentional and otherwise actionable under the rules controlling liability for negligent or reckless conduct, or for abnormally dangerous conditions or activities.”).

Public nuisance changed this dynamic, providing a vehicle for addressing harms to rights “common to the general public.”¹⁴³ In an increasingly complex and industrialized world, this widened the scope of judicial process, affording an opportunity to deal with environmental harms such as air pollution that affects the public in ways not protected by the enforcement of traditional property rights.¹⁴⁴ In *Georgia v. Tennessee Copper Co.*, the state of Georgia brought a suit in equity against a private entity—in Tennessee—seeking to stop air pollution that was causing damage across state lines in Georgia.¹⁴⁵ The Supreme Court noted the novelty of the case, observing that the “elements that would be relied upon in a suit between fellow-citizens as a ground for equitable relief” were lacking; for example, the state did not own title to much of the affected land.¹⁴⁶ Justice Holmes, writing for the Court, sustained Georgia’s ability to bring the case, in defense of the environmental interests of its residents, “in its capacity of quasi-sovereign.”¹⁴⁷

With the spread of environmental calamities and the enactment of significant new environmental statutes came accompanying questions of standing and justiciability. Who would have access to the courts to enforce environmental standards and regulations, and who may seek to compel administrative action required by law? The Administrative Procedure Act (APA) in the 1940s had, by this time, already opened up judicial review of administrative actions to a wider range of cases.¹⁴⁸

In *Sierra Club v. Morton*, the Sierra Club sought the ability to bring a challenge against federal agencies regarding permits for a ski resort and recreation area planned by Walt Disney Enterprises in the Mineral King Valley of California.¹⁴⁹ The Supreme Court noted in that case that economic interests had been recognized as grounds for standing in the context of administrative agency actions.¹⁵⁰ The Court dismissed the Sierra Club’s case for lack of standing, holding that the organization had failed to demonstrate injury to any of its individual members—a mere interest in a problem was not enough for an organization to make its way into the courthouse.¹⁵¹ However, the Court also stated that it did not question that aesthetic and environmental concerns—if demonstrated by any of the organization’s individual members—could be “sufficient to lay the basis for standing.”¹⁵²

The *Sierra Club v. Morton* Court opened the door widely to consideration of environmental interests as a legitimate stake in the outcome of a case, reasoning that “the fact that particular environmental interests are shared by the many rather than the few does not make them less deserving of legal protection through the

143. § 821B.

144. See, e.g., *Morrow*, *supra* note 141, at 52, 53.

145. See *Georgia v. Tenn. Copper Co.*, 206 U.S. 230 (1907).

146. *Id.* at 237.

147. *Id.*

148. See 5 U.S.C. § 702 (2012).

149. *Sierra Club v. Morton*, 405 U.S. 727, 728–30 (1972). On this and other key environmental standing cases, see Bradford C. Mank, *Standing and Related Doctrines*, in 2 *DECISION MAKING IN ENVIRONMENTAL LAW*, ELGAR ENCYCLOPEDIA OF ENVIRONMENTAL LAW 386 (LeRoy C. Paddock et al., eds. 2016).

150. *Sierra Club*, 405 U.S. at 733–34 (citing *Ass’n of Data Processing Serv. Orgs. v. Camp*, 397 U.S. 150 (1970)).

151. See *id.* at 739.

152. *Id.* at 734.

judicial process.”¹⁵³ Justice Douglas’s famous dissent argued for a more complete revolution, with legal rights of standing held by natural ecosystems themselves.¹⁵⁴ Nonetheless, the majority’s opinion sowed the seeds for a legal shift in doctrine toward standing rooted in non-economic harms, based on greater consciousness of the role of “environmental well-being [as an] important ingredient[] of the quality of life in our society.”¹⁵⁵

Although the Court later circumscribed standing in environmental cases,¹⁵⁶ the principle of liberal standing for claims related to environmental, aesthetic, and public health concerns remained, at least in the views of a majority of Justices.¹⁵⁷ In *Massachusetts v. EPA*, the Supreme Court also allowed a wider assertion of standing for the state of Massachusetts as a sovereign entity with regard to potential harms from climate change.¹⁵⁸ In *Massachusetts*, the Court was faced with the scenario of the most complex environmental problem—climate change—and applied the doctrine at its disposal, if not to compel specific substantive government action, at least to prevent inaction.¹⁵⁹

The doctrine of standing, as an example, suggests how judicial reasoning about what constitutes a proper, justiciable case, and how judges approach questions involving environmental matters can change over time. The principle of interpretation called for in NEPA is not a radical departure from this phenomenon. Increasingly, we are becoming aware of how much we are a part of, and not separate from, the environment around us. As our society gains greater understanding of how our economic, social, and cultural foundations are tied to the environment and to ecological functions, the role for environmental considerations in judging the implication of statutes becomes easier to see. These principles point to the underlying values that support a substantive environmental canon of construction.

B. Lessons from Comparative Law

In many parts of the world, environmental issues are at the forefront of legal reforms.¹⁶⁰ National constitutions, regional agreements, and international negotiations point to the importance of environmental law. The international community, in particular, has taken several important steps in the past few years to reshape traditional legal doctrines to accommodate environmental interests.¹⁶¹ The UN’s Sustainable Development Goals, adopted in 2015 as the successors to the Millennium Development Goals,¹⁶² have raised the profile of environmental concerns in

153. *Id.*

154. *Id.* at 741–55 (Douglas, J., dissenting).

155. *Id.* at 734.

156. *See Summers v. Earth Island Inst.*, 555 U.S. 488 (2009); *Lujan v. Defs. of Wildlife*, 504 U.S. 555 (1992).

157. *See Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167 (2000).

158. *Massachusetts v. EPA*, 549 U.S. 497, 518–20 (2007). The Court quoted from Justice Holmes’ opinion in *Georgia v. Tennessee Copper* to support this holding. *See id.* at 518–19 (quoting *Georgia v. Tenn. Copper Co.*, 206 U.S. 230, 237 (1907)).

159. *See Massachusetts*, 549 U.S. at 534–35.

160. *See, e.g.*, G.A. Res. 70/1 (Oct. 21, 2015).

161. *See, e.g., id.*

162. *Id.* at 1.

international thinking about development and the rule of law. In 2016, the IUCN World Declaration on Environmental Rule of Law affirmed that “[s]trengthening the rule of law is critical to protecting environmental, social, and cultural values and to achieving ecologically sustainable development[.]”¹⁶³ The Declaration lays out principles for integrating environmental values into the legal system, calling for recognition of both environmental rights and obligations.¹⁶⁴

Although legal traditions in each country differ,¹⁶⁵ various nations’ courts have put these principles in practice. As illustrated below, the application of the *in dubio pro natura* principle and the doctrine of the ecological function of property rights are examples of significant shifts in legal doctrines. These changes are instructive as patterns for how U.S. courts can implement an environmental canon of construction.

U.S. environmental law developed quickly in the late 1960s and 1970s and has served as a model for similar programs in other countries.¹⁶⁶ Since that time, most countries have taken a more fundamental approach to incorporating environmental issues into their legal systems by constitutionalizing environmental norms.¹⁶⁷ A “right to a decent environment” has, on many occasions since 1970, been introduced in Congress as a constitutional amendment, but never successfully proposed to the states for ratification.¹⁶⁸ However, over the past thirty years, nearly every country that has rewritten its constitution has adopted some form of specified right to a healthy environment or to environmental protection. The constitutions of ninety-two countries worldwide—and several U.S. states—provide for such a right.¹⁶⁹

With this backdrop of constitutional environmental rights, courts in several countries have developed and applied a pro-nature interpretation of statutes under the principle *in dubio pro natura* (when in doubt, in favor of nature).¹⁷⁰ *In dubio pro*

163. IUCN WORLD DECLARATION ON THE ENVIRONMENTAL RULE OF LAW, INT’L UNION FOR CONSERVATION NATURE 2 (2016), https://www.iucn.org/sites/dev/files/content/documents/world_declaration_on_the_environmental_rule_of_law_final_2017-3-17.pdf.

164. See *id.* at 3 (on the “Obligation to Protect Nature” and the “Right to Nature and Rights of Nature”).

165. Common law and civil law traditions differ as to the role of the judge in interpreting the law, for example. But as codified law has spread in the United States since the country’s inception, common law judges in the United States have taken on a much greater degree of the civil law judge’s function.

166. See *Where EPA Works Around the World*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/international-cooperation/where-epa-works-around-world/> (last visited Jan. 25, 2017) (describing cooperative programs between the United States and other countries on developing institutions for environmental protection).

167. See, e.g., Z. Ntozintle Jobodwana, *Integrating International Environmental Principles and Norms into the South African Legal System and Policies*, US-China L. Rev. 701, 702–03 (2011).

168. E.g., H.R.J. Res. 1321, 90th Cong. (1968).

169. See generally *Toronto Initiative for Economic and Social Rights*, TEISR.ORG, <http://www.tiesr.org/data.html> (last visited Jan. 25, 2018). The database includes constitutions and amendments up to April 2014. For more on the role of constitutional environmental rights, see generally DAVID R. BOYD, *THE ENVIRONMENTAL RIGHTS REVOLUTION: A GLOBAL STUDY OF CONSTITUTIONS, HUMAN RIGHTS, AND THE ENVIRONMENT* (2012).

170. See Nicholas S. Bryner, *In Dubio Pro Natura: A Principle for Strengthening Environmental Rule of Law*, 78 REVISTA DE DIREITO AMBIENTAL 245 (2015) (Braz.); Nicholas A. Robinson, *Fundamental Principles of Law for the Anthropocene?*, 44/1-2 ENVTL. POL’Y & L. 13, 16 (2014); ASSOCIAÇÃO BRASILEIRA DE MAGISTRADOS

natura is an expansive concept that guides decisionmaking and provides a resolution for legal uncertainty in matters affecting the environment.¹⁷¹

One concrete judicial application of *in dubio pro natura* has been in statutory interpretation. Article 395 of Ecuador's Constitution of 2008, for example, includes the following charge: "In case of uncertainty regarding the reach of legal provisions on environmental matters, such provisions shall be applied in the sense most favorable to the protection of nature."¹⁷² In a legal system that regards the constitution as the highest point in the hierarchy of sources of law, such an explicit call for judges to interpret environmental laws carries enormous weight. In Brazil,¹⁷³ Costa Rica,¹⁷⁴ Indonesia,¹⁷⁵ and Pakistan,¹⁷⁶ courts have employed the principle to construe statutes in favor of interpretations that promote ecological integrity.

As an additional illustration of shifts in legal doctrines, countries in Latin America, especially Brazil, have demonstrated how environmental values can shape traditional notions of property law. In many legal systems in the region, property law has long been tempered by the doctrine of the social function of property.¹⁷⁷ Property, though individually owned, must fulfill its social function; the public retains an interest in how property is utilized, in order to ensure productivity and counterbalance tendencies toward concentration of land ownership. In Brazil, courts have examined the constitutional provisions on environmental rights and on property to synthesize an ecological function of property.¹⁷⁸ In short, the recognition of environmental values redefined legal thinking about the limitations of property rights—recognizing a public interest in the ecosystem services and ecological attributes of private land, with a corresponding obligation for landowners to refrain from activities that would damage those interests.¹⁷⁹

Four of the countries mentioned above have a constitutionally guaranteed right to enjoy a healthy environment.¹⁸⁰ In the other, Pakistan, courts have concluded that constitutional rights to life and human dignity include a right to a healthy environment.¹⁸¹ Indeed, because the majority of the world's constitutions

[BRAZILIAN ASSOCIATION OF JUDGES], ANAIS DO I ENCONTRO INTERNACIONAL DE DIREITO AMBIENTAL: IN DUBIO PRO NATURA (2013) (Braz.).

171. *See id.*

172. CONSTITUCIÓN DE LA REPÚBLICA DEL ECUADOR, Art. 395, ¶ 4 (author translation).

173. *E.g.*, S.T.J., REsp 1.145.083/MG, 2010/0111349-9, Relator: Min. Herman Benjamin, 04.09.2012.

174. Corte Suprema de Justicia de Costa Rica, Sala Constitucional, Sentencia 5893, 27.10.1995.

175. Nirarta Samadhi, *Preserving Papua's Forests*, WRI INDON. (Sept. 30, 2017), <http://www.wri-indonesia.org/en/blog/preserving-papuas-forests>.

176. *Maple Leaf Cement Factory v. Env'tl. Prot. Agency*, Case No. W.P. No. 115949/2017 (Lahore High Court, Pakistan, Dec. 21, 2017).

177. *See* Nicholas S. Bryner, *Public Interests and Private Land: The Ecological Function of Property in Brazil*, 34 VA. ENVTL. L.J. 122, 126 (2016).

178. *See id.* at 125.

179. *See id.*

180. CONSTITUIÇÃO FEDERAL [C.F.] {CONSTITUTION} art. 225 (Braz.); CONSTITUTION OF COSTA RICA revised 2011, art. 50; CONSTITUTION OF THE REPUBLIC OF ECUADOR OCT. 20, 2008, art. 14; 1945 CONSTITUTION OF THE REPUBLIC OF INDONESIA, amended 2002, art. 28H.

181. *See, e.g.*, Taimur Khan, *Environmental Protection Under Law in Pakistan*, FUTURE OF ENVIRONMENTAL LAW (Aug. 23, 2015), <https://nextgenenvironmentallaw.wordpress.com/2015/08/23/environment-protection-under-law-in-pakistan/>.

have been written in the past thirty years,¹⁸² the interpretation of constitutional provisions is likely to be much more significant in such countries in driving reforms, changes, and new practices in legal systems. The new constitutions are both broader in terms of the subject matter that they address and more specific in resolving particular issues. The constitutional environmental right in the countries cited above makes it easy to trace a line to a substantive canon of statutory interpretation that favors enjoyment of the right (as well as a canon that avoids interpretations inconsistent with that constitutional provision).

These comparative perspectives shed useful light on how the *in dubio pro natura* principle can be applied—especially in its particular application to methods of statutory interpretation. However, these examples do not necessarily mean that a constitutionally recognized environmental right is required in order to reach a pro-nature statutory construction in the context of U.S. law.¹⁸³ Short of such an express right, the common law and constitutional values underpinning the protection of vulnerable interests, as well as the mandate in NEPA, justify the use of a pro-environment principle to resolve statutory ambiguities.

V. APPLYING AN ENVIRONMENTAL CANON OF CONSTRUCTION

Thus far, this article has sought to lay out the justification for an environmental canon of construction—a rule that judges should interpret statutes, when possible, in favor of a construction that tends toward ecological integrity, human health, and long-term environmental sustainability. Many theories compete to explain (descriptively) and justify (normatively) the range of substantive canons, but one unifying factor across many of these canons is the tendency toward safeguarding vulnerable interests. To the extent that this public value—concern for the underrepresented or the powerless—animates substantive canons, the crisis of environmental degradation and overexploitation compels us to consider whether environmental interests are also deserving of this protection. Environmental crises threaten both intragenerational and intergenerational justice. Process-based theory on environmental policymaking, market and government failures in environmental regulation, and concern for the interests of future generations all give rise to the need for an environmental canon.

Against this theoretical backdrop, NEPA's mandate calls on courts to interpret the law in accordance with the policy of human coexistence with nature "in productive harmony" and the fulfillment of "the social, economic, and other requirements of present and future generations of Americans."¹⁸⁴ To meet this ideal, what should an environmental canon of construction look like in practice? This section considers three examples from recent cases to test the contours of the idea. The examples are chosen to draw out some of the complications in applying the canon. Statutory

182. *Toronto Initiative for Economic and Social Rights*, *supra* note 169 (database includes analysis of 83 constitutions originally adopted in 1984 or earlier, and 112 since then).

183. In other words, a constitutional amendment adding environmental rights in the U.S. Constitution (on par with the provisions in other constitutions worldwide) would entail a reshaping of property rights and regulatory powers, but the pro-nature principle is not reliant on this, focusing only on the modest change of how to address the ambiguous statutory interpretation cases by adding an additional substantive canon of construction that operates in conjunction with other such canons.

184. 42 U.S.C. § 4331(a) (2012).

interpretation is usually straightforward, but in the small sample of appellate cases, it is never so simple. Principles that weigh in favor of one resolution run up against competing values. Having an environmental canon of construction puts important interests in a place where they may be appropriately considered; even when it does not alter the outcome, it enhances the legitimacy of those concerns and, hopefully, leads to a better balance.

A. Lacey Act

The Lacey Act is an old wildlife law, dating originally to 1900.¹⁸⁵ Named after its principal sponsor, Congressman John Lacey, the Act first came into being as a federal backstop for state wildlife regulation.¹⁸⁶ In its original form, the Lacey Act prohibited interstate trafficking in wildlife that had been taken in violation of state laws, and also disallowed the importation of foreign wild animals or birds without a permit.¹⁸⁷ The Act has since been revised and expanded several times: it now addresses foreign commerce in wildlife and birds taken in violation of the laws of the country of origin, and, since it was most recently amended in 2008, now prohibits the importation or trafficking in plants and plant products in violation of source country or state law.¹⁸⁸

A related provision in the Lacey Act provided a process for federal officials (originally the Department of Agriculture, but now the U.S. Fish and Wildlife Service within the Department of the Interior) to prohibit the importation of wildlife species deemed to be “injurious.”¹⁸⁹ In 1960, Congress expanded this section, now in Title 18, to proscribe:

[t]he importation into the United States, any territory of the United States, the District of Columbia, the Commonwealth of Puerto Rico, or any possession of the United States, or any shipment between the continental United States, the District of Columbia, Hawaii, the Commonwealth of Puerto Rico, or any possession of the United States . . . such [animal] species . . . which the Secretary of the Interior may prescribe by regulation to be

185. See Lacey Act, ch. 553, 31 Stat. 187 (1900) (codified as amended at 16 U.S.C. §§ 3371–3378 (2012)).

186. Victor J. Rocco, *Wildlife Conservation Under the Lacey Act: International Cooperation or Legal Imperialism?*, 80-MAY N.Y. ST. B.J. 10, 12 (2008).

187. See Lacey Act, §§ 2–3, 31 Stat. at 188.

188. See 16 U.S.C. § 3372(a)(2) (2012) (making it unlawful “to import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce—(A) any fish or wildlife taken, possessed, transported, or sold in violation of any law or regulation of any State or in violation of any foreign law; (B) any plant—(i) taken, possessed, transported, or sold in violation of any law or regulation of any State, or any foreign law, that protects plants . . .”).

189. The language in the original Lacey Act prohibited “[t]he importation of the mongoose, the so-called ‘flying foxes’ or fruit bats, the English sparrow, the starling, or such other birds or animals as the Secretary of Agriculture may from time to time declare injurious to the interest of agriculture or horticulture . . .” Lacey Act, § 2, 31 Stat. at 188. Responsibility for overseeing this provision was transferred from the Department of Agriculture to the Department of the Interior in 1939. Reorganization Plan No. 2 of 1939, § 4(f), 53 Stat. 1431, 1433–34.

injurious to human beings, to the interests of agriculture, horticulture, forestry, or to wildlife or the wildlife resources of the United States[.]¹⁹⁰

In April 2017, a panel of the D.C. Circuit Court of Appeals decided a case that the U.S. Association of Reptile Keepers had brought against the Department of the Interior, in which the court parsed the interpretation of this statutory provision.¹⁹¹ In 2015, the Fish and Wildlife Service had listed several species of snakes as “injurious,” to which the import and shipment provisions of the Lacey Act would apply.¹⁹² The government had, for some time, taken the position that the Lacey Act allowed it to prohibit all interstate shipments of injurious species.¹⁹³ The Reptile Keepers brought suit, arguing that the language of the statute—“between the continental United States, the District of Columbia, Hawaii, the Commonwealth of Puerto Rico, or any possession of the United States”¹⁹⁴—meant that state-to-state transportation *within the continental United States* was not prohibited, and rather, that the statute applied only to shipments between *the continental states as a whole* and the other jurisdictions listed.¹⁹⁵

The D.C. Circuit panel that heard the case ruled in favor of the Reptile Keepers, holding that the statute could not be used to prohibit interstate transportation within the continental United States.¹⁹⁶ Remarkably, the court found the statute to be clear and unambiguous, despite the argument that the provision could be read multiple ways.¹⁹⁷ The court cited style manuals to support a conclusion that “between,” as used in the statute, meant only relationships “across” the identified items in the list, and that it said “nothing about relationships *within* any one of the listed items.”¹⁹⁸ Following this justification were a number of examples of phrases where “between” is naturally understood in this sense.¹⁹⁹

The court’s finding that the statute was “clear”²⁰⁰ served the purpose of simplifying its reasoning, allowing the court to skirt the applicability of other doctrines and rules of interpretation. However, a more skeptical reading of the case shows that the court was willing to strain quite hard in order to come up with this result; multiple times, the court brushed aside apparent ambiguities and problems in order to defend its conclusion that the statute had only one clear and straightforward interpretation.

190. 18 U.S.C. § 42(a)(1) (2012). Most of this specific language was added by the Act of Sept. 2, 1960, Pub. L. 86-702, 74 Stat. 753, 753–54.

191. See *U.S. Ass’n of Reptile Keepers, Inc. v. Zinke*, 852 F.3d 1131 (D.C. Cir. 2017).

192. See *id.* at 1134 (citing *Injurious Wildlife Species; Listing Three Anaconda Species and One Python Species as Injurious Reptiles*, 80 Fed. Reg. 12,702 (Mar. 10, 2015) (codified at 50 C.F.R. pt. 16)).

193. See *U.S. Ass’n of Reptile Keepers*, 852 F.3d at 1133.

194. 18 U.S.C. § 42(a)(1).

195. See *U.S. Ass’n of Reptile Keepers*, 852 F.3d at 1132–34.

196. *Id.* at 1142.

197. *Id.* at 1138. Because the court “[saw] no ambiguity” in the statute, it did not determine whether *Chevron* deference would apply in this circumstance to an agency interpretation of a criminal statute. *Id.*

198. *Id.* at 1135.

199. *Id.* at 1135–36.

200. *Id.* at 1138.

The court rejected the federal government's contention that this reading of the statute would lead to absurd inconsistencies.²⁰¹ For example, under the court's decision, the ban applies to shipments of injurious species from Virginia to Washington, D.C. (because the District of Columbia is listed separately), but not from Virginia to Maryland.²⁰² The court reasoned that this was plausible under the theory that Congress intended to leave it up to states to choose whether and how to protect their respective state borders from injurious species already found within the United States—and while those states could do so, Congress sought to protect D.C. specifically, given that this language was adopted in 1960, prior to the passage of the Home Rule Act in 1973.²⁰³ Yet the scope of state authority to do this effectively was not clear at the time: the D.C. Circuit cited *Maine v. Taylor* for this proposition, which the Supreme Court did not decide until 1986, decades after the amendments to the Lacey Act at issue—and in that case, the Court overturned a First Circuit decision that would have struck down a state invasive species statute as a violation of the dormant Commerce Clause.²⁰⁴

Further, even if the D.C. Circuit's reasoning gave a possible explanation for the separate listing of the District of Columbia in the statute, it did not explain the rest of the awkward wording, nor did it fully explain the inclusion of Hawaii. As to Hawaii, the explanation was that the statute protected the "continental United States" from invasive species present in the island state;²⁰⁵ however, if Congress was leaving it up to the states to protect against harm from species already present in the country, the prohibition would not need to extend to shipments to Hawaii. In addition, the court's cramped reading of "between" only to cover transportation "across" the items listed in the provision would not prohibit shipments between any two possessions of the United States not specifically listed (such as Guam and the Northern Mariana Islands, for example).

The application of the proposed environmental canon of construction may not necessarily have altered the outcome in the *Reptile Keepers* case. However, it would have provided an alternative lens through which the court could view the question of what the statute means. In general, substantive canons are thought not to overcome clear language in the law (although the degree of "clarity" required may depend on the strength of the presumptions associated with the canon).²⁰⁶ It is possible that considering the environmental canon would prompt further examination of whether the language in the Lacey Act was actually clear, or whether the government's position was actually a plausible reading of ambiguous phrasing.²⁰⁷

With the canon as an influence on the interpretive process, the door would then be open for the judges in the case to weigh equitably the concerns expressed

201. See *U.S. Ass'n of Reptile Keepers*, 852 F.3d at 1141.

202. See *id.* at 1139–40.

203. See *id.* at 1140.

204. *Id.* (citing *Maine v. Taylor*, 477 U.S. 131, 151–52 (1986), *rev'g* *United States v. Taylor*, 752 F.2d 757 (1st Cir. 1985)).

205. See *U.S. Ass'n of Reptile Keepers*, 852 F.3d at 1139.

206. Amy Coney Barrett, *Substantive Cannons and Faithful Agency*, 90 B.U. L. Rev. 109, 164 (2010).

207. On the contrary, judges, aware of the applicability of such a canon, may have instead merely seen it as another obstacle to avoid in finding the statutory meaning unambiguous—much as the panel did with regard to *Chevron* deference. See *U.S. Ass'n of Reptile Keepers*, 852 F.3d at 1138.

by competing principles of law in the case. On the one hand, the environmental canon points toward an interpretation of the statute that best protects the environmental interest at stake—the safeguarding of ecological and human health from trade in invasive or otherwise harmful species. The canon ought to be stronger in this instance, where it lines up with the purpose underlying the broader statute, the Lacey Act: shoring up state wildlife laws and regulating “the introduction of American or foreign birds or animals in localities where they have not heretofore existed.”²⁰⁸ On the other hand is the rule of lenity, which would caution toward narrow construction of the prohibited acts.²⁰⁹ Engaging with these competing principles would lead to a more robust decision—regardless of the ultimate outcome—that would take into account a wider set of the concerns in fulfilling the intent of Congress while respecting the charge to avoid irreparable harm both to individual liberties as well as the environment.

B. *Utility Air Regulatory Group v. EPA*: “Any Air Pollutant”

In 2014, the Supreme Court decided a statutory interpretation case, *Utility Air Regulatory Group v. EPA*, involving provisions of the Clean Air Act—provisions that, in the context of regulating greenhouse gases (GHGs), appeared incompatible.²¹⁰ Following the Supreme Court’s 2007 decision in *Massachusetts v. EPA*,²¹¹ which held that the Clean Air Act’s definition of “air pollutant” could encompass climate-forcing GHGs,²¹² the EPA made a finding that such gases endangered human health and welfare, and subsequently undertook to regulate GHG emissions from motor vehicles.²¹³ The Obama Administration’s EPA concluded that its decision to regulate GHGs from mobile sources “triggered” an obligation to regulate GHGs from stationary sources under two different portions of the Clean Air Act: the Prevention of Significant Deterioration (PSD) program in Title I, and Title V permitting.²¹⁴ Regulation would mean that “major” sources would be required to deploy the best available control technology (BACT) as determined by EPA.²¹⁵

The difficulty was that the BACT requirement applies to “major emitting facilities,” defined in the statute as those that “emit, or have the potential to emit,”

208. *Id.* at 1133 (quoting Lacey Act, § 1, 31 Stat. 187, 188 (1900) (codified as amended at 16 U.S.C. § 701 (2012))).

209. *See supra* Section I.A.

210. 134 S. Ct. 2427 (2014).

211. 549 U.S. 497 (2007).

212. The *Massachusetts* decision is one of the most prominent examples of the Court taking the broad language in a statute literally, so as to include concepts—climate-forcing pollution—not well understood at the time the original statute was drafted, but that fit within the plain reading of the statutory definitions. Jason Czarnezki has argued for such broad constructions in the face of “shifting science,” due to congressional awareness and due to cost considerations associated with failures to regulate. *See generally* Jason Czarnezki, *Shifting Science, Considered Costs, and Static Statutes: The Interpretation of Expansive Environmental Legislation*, 24 VA. ENVTL. L.J. 395 (2006).

213. Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,537 (Dec. 15, 2009) (known as the “Endangerment Finding”).

214. *Util. Air Regulatory Grp.*, 134 S. Ct. at 2436–37; Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. 17,004 (Apr. 2, 2010) (“Triggering Rule”).

215. 42 U.S.C. § 7475(a)(4) (2012).

either 100 or 250 tons per year of most air pollutants.²¹⁶ For conventional pollutants, that limit posed no problem; it served the Act's purpose of targeting a smaller number of large sources of pollution for regulation. However, in the case of GHGs, 250 tons of carbon dioxide—the most common of the pollutants found to endanger human health and welfare via climate change—is an insignificant amount and negligible in impact for a nationwide regulatory program.²¹⁷ The EPA argued that regulation of all major sources under this definition would be inappropriate and impracticable for application because, at that level, the Act's regulatory net would catch thousands upon thousands of sources—including “large office and residential buildings, hotels, large retail establishments” and other categories far removed from the EPA's technical and practical ability to regulate.²¹⁸ As a result, EPA included in its rulemaking a plan to “tailor” the regulation to first apply to large emitters of carbon dioxide, beginning first with sources that already required permits for conventional pollutants, and then to sources with the potential to emit at least 75,000 or 100,000 tons of CO₂ per year.²¹⁹

The Court in *UARG* analyzed whether the EPA had appropriately interpreted the Clean Air Act to trigger stationary source regulation. The majority reasoned that, although the Act-wide definition of “air pollutant” included GHGs,²²⁰ its broad catch-all language could not apply in every “operative provision” of the Clean Air Act, in which “EPA has routinely given [the term] a narrower, context-appropriate meaning.”²²¹ The crux of the statutory interpretation question in the case, then, was how to reconcile the command to regulate “any air pollutant” from stationary sources—or even any *already regulated* air pollutant (as EPA had interpreted it)—with the apparent absurdity of classifying nearly everything as a “major source.”

The Court purported to apply the standard in *Chevron* to “empower[] the agency to resolve the ambiguity” in the statute, so long as it “has acted reasonably and thus has ‘stayed within the bounds of its statutory authority.’”²²² The majority, however, ultimately refused to defer to the EPA's resolution of the inconsistency in applying the Clean Air Act's time-worn provisions to a new circumstance (to a new pollutant with qualitatively different impacts and with significance on a different scale of quantities than pollutants that had hitherto been regulated). The Court

216. § 7479(1). A more stringent minimum of 100 tons per year to be considered a major source applies in Title V and to certain categories of stationary sources under Title I. §§ 7479, 7602(j).

217. For the sake of perspective, U.S. GHG emissions in 2015 totaled 6.587 billion metric tons of carbon dioxide-equivalent—roughly twenty metric tons per person—showing the insignificance of an emission of 100 or 250 tons. See *Inventory of U.S. Greenhouse Gas Emissions and Sinks*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> (last visited Jan. 20, 2018).

218. *Util. Air Regulatory Grp.*, 134 S. Ct. at 2,436 (quoting *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 Fed. Reg. 44,354, 44,498–99 (July 30, 2008)).

219. *Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*, 75 Fed. Reg. 31,514 (June 3, 2010); *Util. Air Regulatory Grp.*, 134 S. Ct. at 2437.

220. The broad definition is as follows: “The term ‘air pollutant’ means any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive (including source material, special nuclear material, and byproduct material) substance or matter which is emitted into or otherwise enters the ambient air.” 42 U.S.C. § 7602(g) (2012). It can also include precursor substances that lead to the formation of air pollutants. *Id.*

221. *Util. Air Regulatory Grp.*, 134 S. Ct. at 2439.

222. *Id.* (quoting *City of Arlington v. FCC*, 569 U.S. 290, 297 (2013)).

elaborated that in determining the meaning of the same phrase as it appears in different places in the statute, judges “must do [their] best, bearing in mind the ‘fundamental canon of construction that the words of a statute must be read in their context and with a view to their place in the overall statutory scheme.’”²²³

Applying an environmental canon of construction in this case is perhaps tricky, but would help provide guidance to judges in prioritizing the different values that could not all simultaneously be met in any reading of the statute. The call to interpret the statute in a way most favorable to the protection of environmental interests and human health would concur with the EPA’s conclusion that its regulation of GHGs under Title II triggered application of pollution controls for stationary sources under Title I. However, the canon would run up against the competing canon to avoid absurd results—covering all “major sources” of CO₂ would have dramatically altered the scope of the type of entities the EPA regulates.²²⁴

Reading together the majority and the dissent’s perspective of the case, the EPA had two options for reconciling the different provisions of the Clean Air Act with the peculiarities of greenhouse gases—giving meaning to the statute’s clear provisions while avoiding administrative absurdity and impracticality. It is between those two options that the environmental canon of construction would again operate.

First (as the EPA had in fact done), the agency could interpret the stationary source provisions to require regulation of any air pollutant—including GHGs—regulated elsewhere in the statute.²²⁵ Viewing this as consistent with the primary purpose of the statute, the EPA then bent other provisions, at least temporarily, so as to create a practicable regulatory program.²²⁶ Alternatively, the EPA could read (as the Court did) the details first on what constitutes major sources and conclude that, because the numerical thresholds would make GHG regulation unworkable, it must instead interpret the stationary source provision to apply only to a smaller subset of pollutants—i.e., that “any air pollutant” excludes those that cannot be regulated using the defined thresholds for major sources without creating absurd or impractical results.²²⁷

Justice Breyer, in dissent, cut to the heart of the issue. He wrote that the proper interpretation of the statute should “assume[] that Congress was not merely trying to arrange words on paper but was seeking to achieve a real-world *purpose*[].”²²⁸ In that light

“[t]he purpose of the [250 tons per year threshold] was not to prevent the regulation of dangerous air pollutants that cannot be sensibly regulated at that particular threshold. . . . Rather, the purpose was to limit the PSD program’s obligations to larger

223. *Util. Air Regulatory Grp.*, 134 S. Ct. at 2441 (quoting *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 133 (2000)).

224. *Util. Air Regulatory Grp.*, 134 S. Ct. at 2430.

225. *See id.*

226. *Id.*

227. 42 U.S.C. § 7479(1) (2012).

228. *Util. Air Regulatory Grp.*, 134 S. Ct. at 2453 (Breyer, J., dissenting).

sources while exempting the many small sources whose emissions are low enough that imposing burdensome regulatory requirements on them would be senseless.”²²⁹

This led Justice Breyer to conclude that “finding flexibility in ‘any source’ is far more sensible than the Court’s route of finding it in ‘any air pollutant.’”²³⁰ The environmental canon of construction would provide an additional pillar for the dissent to rely on, tilting the balance in favor of judicial resolution of the conflicting statutory provisions that facilitates environmental protection. The canon in this type of case serves as a counterweight to the assertion of a greater judicial role in cases with major economic interests at stake.²³¹

C. *Yates v. United States*

*Yates v. United States*²³² also exhibits the potential for complicated tension in applying the environmental canon of construction in criminal law. In the case, *Yates*, the captain of a commercial fishing boat, had caught a number of undersized red grouper in the Gulf of Mexico.²³³ In federal waters, the National Marine Fisheries Service, through regional fishery management councils, manages fishing seasons and quotas, and regulates the minimum size for catching certain fish in order to ensure healthy fish stocks.²³⁴ Inspectors who searched *Yates*’ boat at sea found undersized fish, separated them, and after issuing a citation, instructed *Yates* that the fish would be seized upon his return to port.²³⁵ However, *Yates* ordered his crew to throw the undersized fish overboard and replace them with slightly longer fish—a scheme that the inspectors later uncovered.²³⁶

Yates was convicted of violating a criminal statute that prohibits the destruction or disposal of property to prevent seizure,²³⁷ which was not in dispute on appeal. However, the government also charged him with violating a provision of the

229. *Id.*

230. *Id.* at 2452.

231. Presented with these two alternative methods for reconciling the statute’s imprecise fit to GHG regulation, the Court effectively asserted its own authority to determine which reading was correct, rather than deferring to the EPA. Rather than let the agency fill the gap, the Court filled it by adding in a limitation to statute—furthering a trend away from *Chevron*-style deference in environmental law cases and others with big-ticket economic implications. As Ann Carlson and Megan Herzog note, reading *UARG* with the Court’s other recent cases interpreting the Clean Air Act, especially *EME Homer*, “provide[s] somewhat contradictory guidance about the application of *Chevron* to EPA’s CAA interpretations.” Ann E. Carlson & Megan M. Herzog, *Text in Context: The Fate of Emergent Climate Regulation After UARG and EME Homer*, 39 HARV. ENVTL. L. REV. 23, 24 (2015).

232. 135 S. Ct. 1074 (2015).

233. *Id.* at 1078.

234. See Magunson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, Pub. L. No. 109-479, 120 Stat. 3575 (codified as amended at 16 U.S.C. §§ 1801–1891d (2012)).

235. See *United States v. Yates*, 733 F.3d 1059, 1061 (11th Cir. 2013), *rev’d*, 135 S. Ct. 1074 (2015).

236. *Id.* at 1061–62.

237. 18 U.S.C. § 2232(a) (2012).

Sarbanes-Oxley Act—a law enacted in response to fraud in financial markets—related to the destruction of objects to impede a federal investigation.²³⁸ That statute reads:

Whoever knowingly alters, destroys, mutilates, conceals, covers up, falsifies, or makes a false entry in any record, document, or tangible object with the intent to impede, obstruct, or influence the investigation or proper administration of any matter within the jurisdiction of any department or agency of the United States . . . shall be fined under this title, imprisoned not more than 20 years, or both.²³⁹

The Supreme Court addressed the statutory interpretation question of whether the concept of a “tangible object” in the statute could include the fish Yates tossed overboard.²⁴⁰ Although a natural reading of the phrase “tangible object” would clearly encompass a fish, a plurality of the Court employed canons of construction to limit its application.²⁴¹ In this context, the four-Justice plurality held “tangible object” is limited to “objects one can use to record or preserve information, not all objects in the physical world.”²⁴²

The plurality relied principally on two linguistic canons of construction, often known by their Latin names, *noscitur a sociis* and *ejusdem generis*.²⁴³ The first, *noscitur a sociis*, indicates that a word in a list is understood with reference to “the company it keeps.”²⁴⁴ In other words, the phrase “tangible object” should refer only to those involving “records” or “documents.”²⁴⁵ Per the *ejusdem generis* canon, “[w]here general words follow specific words in a statutory enumeration, the general words are [usually] construed to embrace only objects similar in nature to those objects enumerated by the preceding specific words.”²⁴⁶ According to this rule, the general phrase “tangible object” is limited to the category of tangible objects similar to records or documents; were it not so, the all-encompassing broad phrase would make the specific terms unnecessary.²⁴⁷

To a certain extent, the disagreement between the five Justices who voted to overturn the lower court’s decision and the four dissenters was about whether they saw the relevant statutory provision as ambiguous. For the dissent, the words of the statute were perhaps harsh, but clear: a fish is a tangible object.²⁴⁸ For the plurality, on the other hand, and for Justice Alito, who wrote a separate concurring

238. See *Yates*, 135 S. Ct. 1074, 1078–79.

239. 18 U.S.C. § 1519.

240. *Yates*, 135 S. Ct. at 1081.

241. *Id.* at 1081–82.

242. *Id.* at 1081.

243. *Id.* at 1085–86.

244. *Id.* at 1085 (citing *Gustafson v. Alloyd Co.*, 513 U.S. 561, 575 (1995); *United States v. Williams*, 553 U.S. 285, 294 (2008)).

245. *Yates*, 135 S. Ct. at 1085–86.

246. *Id.* at 1086 (quoting *Wash. State Dep’t of Soc. & Health Servs. v. Keffeler*, 537 U.S. 371, 384 (2003)).

247. *Yates*, 135 S. Ct. at 1086–87.

248. *Id.* at 1091 (Kagan, J., dissenting).

opinion, the canons opened up significant ambiguity as to how a faithful agent of Congress should read the statute.²⁴⁹

In what way would a court use a substantive canon of construction in this case? The plurality, at the end of the opinion, noted that “if our recourse to traditional tools of statutory constructions leaves any doubt about the meaning of ‘tangible object,’ . . . we would invoke the rule [of lenity].”²⁵⁰ Justice Ginsburg’s opinion nodded to the rule of lenity even though the statute on its face was not ambiguous—there was no linguistic or syntactic question about how to read the phrase at issue. Rather, the history of the provision made the Justices question whether the statute’s broad language was intended to reach conduct like the defendant’s, and the Court bent it toward a more lenient contextual interpretation.

Notably absent from the three opinions is any discussion of the value served by the regulation of the underlying act—the prohibition on catching undersized fish. Although the federal criminal code provisions at stake in this case, and their source the Sarbanes-Oxley Act, are not “environmental” laws, the implementation and enforcement of these provisions can have a measurable impact on environmental interests.

In this example, the environmental canon of construction would point toward a broad reading of “tangible object.” Criminalization of efforts to obstruct investigations is likely intended both as a deterrent to such obstructions—a way to bolster the effectiveness and accuracy of the investigative process—and as a fallback mechanism for punishing crimes for which little tangible evidence exists. Enforcement of fisheries management rules that promote ocean sustainability becomes more difficult when someone who destroys evidence of misconduct is, so to speak, let off the hook.

For the four dissenting Justices, the environmental canon would not have an effect on the bottom-line outcome: they already saw the statute as clear, and limited the weight that would be given to contextual and extratextual clues. For the other five, the canon would become important, but would also run up against other considerations, and most notably, against the rule of lenity. The lenity rationales—the value of ensuring adequate notice about what conduct is prohibited, and of incentivizing legislative clarity—appear to clash in this case with the value of enabling effective enforcement for laws that promote long-term sustainability.

Reliance on the environmental canon of construction may have swung the outcome of *Yates*, but with other canons and rules on the opposite side of the ledger, that conclusion is less than certain. However, even if an appeal to the environmental canon did not prove outcome-determinative, it would still be an important tool for placing critical environmental interests in the legal discourse. If a judge considers the environmental canon of construction, but ultimately concludes that the rule of lenity, backed by linguistic canons, predominates, then that is the type of reasoned decision that we should hope and expect judges to make.

249. *Id.* at 1088 (plurality opinion).

250. *Id.*

VI. LOOKING FORWARD

The proposal for an environmental canon of construction is modest in that it does not mandate a change in the way judges approach most cases of statutory interpretation. Rather, it calls for an adjustment—a shift in the public values that form the basis for substantive canons of construction in light of environmental crises and general concern for the rights and needs of future generations.

Support for this adjustment finds root in existing U.S. law, in past practices, in comparative legal systems, and in the underlying legal philosophy that supports many other canons of construction—as a check on threats to significant, but vulnerable interests. It is also important, however, to consider alternative theories and note what an environmental canon of construction, as this Article has described it, cannot do.

A. Why the Environmental Canon of Construction?

This section addresses some potential alternative ideas in the area of statutory interpretation as it affects environmental law. An environmental canon of construction is justified by the reasons articulated above, but its use may require some exploration of the limits of the canon as well. Articulating the canon may lead to additional questions about how it works and why it is necessary or beneficial for understanding and applying the law.

First, an obvious question raised by the canon is how a judge will know which plausible interpretation of a statute is most favorable to the environment. Or, more generally, how does a judge know what is best for the environment, or how to make tradeoffs among options that may have varying advantages or disadvantages for competing environmental interests? For example, a decision that limits human exposure to air pollutants in one area might lead to indirect negative impacts on wildlife and ecosystems elsewhere.

While this may be a concern in some cases, in general it does not seem like a different judgment in kind than others that judges make; the judiciary is well-equipped to make tradeoffs, and could do so here. Credible scientific evidence of environmental impacts would be useful in the same ways that it is in other cases.²⁵¹ More importantly, the canon is applicable in cases where the *statute* is not clear; it seems unlikely, at least in the abstract, that both the statute would be ambiguous and that the environmental impacts (presumed to be significant) would also be equally ambiguous. To the extent that the environmental interests relevant to the case are unclear, that concern would suggest a more limited weight for the interpretative rule in its particular application to that case, rather than an argument against the existence of the rule in general.

Second, one may wonder what happens when environmental interests conflict with other public values or with other recognized concerns, such as individual

251. For a critique of the Supreme Court's use of science in environmental cases, see Robert W. Adler, *The Supreme Court and Ecosystems: Environmental Science in Environmental Law*, 27 Vt. L. Rev. 249 (2003). Adler concludes that many "highly fragmented decisions in the environmental field can be explained, at least in part, by the fact that different justices have relied on extrinsic sources of environmental science to greater or lesser degrees to provide context and understanding for their environmental decisions." *Id.* at 369.

property rights. We expect judges to balance competing rights and interests all the time. Indeed, the point of the environmental canon of construction is to ensure that there is, in fact, a balance. When a statute is ambiguous, this is not the only canon that a court would use, but it should at least be one method for resolving statutory interpretation questions. If a court concludes that other interpretative tools weigh more strongly in another direction, the environmental canon of construction rightly yields.

Third, how far does the canon reach? When applied to the core set of environmental and natural resources laws, the environmental canon of construction may be easily aligned with broader statutory context and purpose. To what extent is this canon still justified in interpreting other statutes? As Todd Aagaard has written, environmental law is increasingly “embedded” in larger, non-environmental programs, including tax law, transportation legislation, and food/agriculture policy.²⁵² These programs are, notably, implemented by agencies that do not specialize in environmental matters.²⁵³ Other laws have experienced “green drift,” incorporating, to varying degrees, some consideration of environmental principles and values, whether by legislative amendment or changes in implementation.²⁵⁴ In short, Congress has recognized that a wide variety of laws can impact the environment; courts should too. The scope of NEPA’s call for interpretation consistent with environmental principles is universal—by its terms, it applies to all “policies, regulations, and public laws of the United States.”²⁵⁵

Additional concerns about the applicability of the environmental canon of construction may speak more to the strength of the presumption it creates in statutory interpretation, rather than the justification for the principle. Further exploration as to how strong the presumption is, and how it works in practice in tandem with other judicial tools for reading statutes, would be welcome. The argument made here is that the theoretical and statutory foundation for an environmental canon of construction is significant and that it is supported by NEPA, by analogy to other substantive canons of construction, by principles applied in comparative law that suggest some commonality, and by other experiences with environmental law and judicial doctrines.²⁵⁶

252. See generally Aagaard, *supra* note 140.

253. *Id.* at 1272–74.

254. See generally Christopher McGrory Klyza & David Sousa, *Beyond Gridlock: Green Drift in American Environmental Policymaking*, 125 POL. SCI. Q. 443 (2010). Some examples are the Federal Land and Policy Management Act (FLPMA) and the National Forest Management Act (NFMA), both passed in 1976, which emphasized, to a greater degree, recognition of environmental concerns in older natural resources and land management statutes; as well as recent energy legislation, such as the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007.

255. 42 U.S.C. § 4332(1).

256. A related point is whether the recognition of environmental interests as deserving of a substantive canon of construction opens the floodgates to similar claims for other interests. In general, the principle is limited to safeguarding vulnerable interests from the potential for irreparable harm. Wherever that is met, an analogous substantive canon may be justified. But here, an environmental canon is justified not just by those principles but also by specific statutory text in NEPA and by comparative law examples described above. See *supra* Section IV.B.

B. What about *Chevron* deference?

One of the most significant challenges in U.S. environmental law is that the law is no longer new. Most of the key framework statutes were enacted in the 1970s, and only one has been substantially amended in the nearly three decades since the Clean Air Act Amendments of 1990.²⁵⁷ The mismatch between aging statutes and our modern, twenty-first century understanding of environmental issues makes effective governance a legally complicated matter.

Some scholars have argued that in the fields of environmental and energy law a more robust application of *Chevron* deference²⁵⁸ is needed, as expert agencies are best equipped to handle the task of updating regulatory schemes to meet new environmental challenges.²⁵⁹ Leaving these types of policy choices to agencies has its virtues—including, in theory, more predictable (and more uniform) judicial decisions. However, it also has its well-described disadvantages; *Chevron*-style flexibility means that agency decisions—and consequently, judicially sanctioned interpretations—may not be consistent over time, as political administrations and priorities change. A less sanguine view of agency decision-making, in line with public choice criticisms, cautions that agencies with flexibility will be prone to interpretations that go against public welfare. In an era of congressional paralysis,²⁶⁰ key policy issues are constantly open for reinterpretation, undermining continuity and reliability.

Judge Calabresi's call for a "common law of statutes" argues in favor of judicial gap-filling as a remedy for the "statutorification" of difficult-to-update law.²⁶¹ While *Chevron* remains good law, several of the Supreme Court's decisions in the past several years have taken a more assertive approach in defining and interpreting key statutory issues, chipping away at *Chevron* doctrine.²⁶² And notwithstanding the

257. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, 104 Stat. 2399. Congress amended the Toxic Substances Control Act (TSCA) in 2016; however, its regulatory reach is narrower than the better-known Clean Air Act, Clean Water Act, and federal hazardous waste laws, for example. See Frank R. Lautenberg Chemical Safety for the 21st Century Act, Pub. L. 114-182, 130 Stat. 448 (2016).

258. *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837 (1984). In *Chevron*, the Supreme Court laid out a test for judicial review of agencies' interpretation of statutes. *Id.* at 842–45. To put it succinctly, if a court finds that a statute is clear—generally, after using ordinary tools of statutory construction—the agency has no leeway. *Id.* However, if the statute is ambiguous, the court will defer to an agency's interpretation so long as it is "permissible" within the statute, on the theory that statutory ambiguity is an implicit delegation by Congress to expert agencies to make reasoned decisions about how to apply and implement the law. *Id.*

259. See, e.g., Jody Freeman & David B. Spence, *Old Statutes, New Problems*, 163 U. PA. L. REV. 1, 81 (2014) (arguing that agencies are in a "far better position than courts" to "adapt obsolete statutes responsibly to new circumstances"). Freeman and Spence contend that "because the agency is the legally designated custodian of the statute (so designated by the enacting Congress), the agency has the superior claim to interpret the statute's application to new problems during periods of congressional quiescence." *Id.* at 7.

260. Congressional activity, as measured by the number of public laws enacted in each two-year Congress, has declined significantly in recent decades. See *Public Laws*, CONGRESS.GOV, <https://www.congress.gov/public-laws/> (last visited Jan. 20, 2018). In the 1970s and 1980s, Congress regularly enacted over 600 pieces of legislation in a two-year period; this declined sharply in the mid-1990s and again after the 2010 election to a low of 283 public laws in the 112th Congress (2011–2012). *Id.*

261. GUIDO CALABRESI, *A COMMON LAW FOR THE AGE OF STATUTES* 1 (1982).

262. See, e.g., *King v. Burwell*, 135 S. Ct. 2480 (2015); *Michigan v. EPA*, 135 S. Ct. 2699 (2015). The question of whether the approach in *Chevron* is justified, of course, is and has been hotly debated for many

justification that deference constrains judicial discretion, judges can tweak the doctrine, at both steps, to meet their ideological predispositions.²⁶³

The point here is not to make a claim as to whether greater deference to agencies leads to better results. Rather, it is to suggest that an environmental canon of construction would take on even greater importance to the extent that judicial oversight of agency statutory interpretation increases. An environmental canon of construction would apply more broadly to statutory interpretation cases than *Chevron* doctrine, which is limited to review of agency interpretations. However, in *Chevron*-type cases, the proposed canon would operate in both steps of the process: first, as a consideration for judges in evaluating whether a statute is sufficiently ambiguous to afford any deference in interpretation; and second, to the extent that the statute is ambiguous, judges should then evaluate whether an agency has interpreted it in a manner that best protects environmental interests and human health.

In other words, to comply with NEPA Section 102(1), *Chevron* Step One analysis should consider whether multiple interpretations are acceptable or whether one reading should be preferred as consistent with declared environmental policies.²⁶⁴ If, after this Step One reference to the environmental canon of construction, together with other textual and contextual interpretative tools, the statute is still ambiguous, that lens is applied to determine whether an agency's construction is "permissible."

VII. CONCLUSION

Environmental law in the United States became established in a relatively short period of time. The wave of new statutes in the 1970s drastically altered the case-by-case, liability/compensation-oriented common law system of regulation of environmental harms. In an age of legislative inflexibility, both agencies and courts have continued to apply those statutes, and conflicts about the interpretation of those laws have taken on even greater significance. As Justice Stevens has suggested (in a speech criticizing the holding in *Michigan v. EPA*, another Clean Air Act case, in 2015), statutory interpretation in the United States is often more consequential than constitutional interpretation.²⁶⁵

years, but may continue to come up with the appointment of Justice Gorsuch to the Court. See, e.g., *Gutierrez-Brizuela v. Lynch*, 834 F.3d 1142, 1149–58 (10th Cir. 2016) (Gorsuch, J., concurring) (then-Judge Gorsuch's criticism of *Chevron*).

263. For example, at *Chevron* Step One, judges may disagree about whether a statute is ambiguous based on which tools of statutory construction are used, as well as what conclusions are made about the purpose of the statute; at Step Two, judges with differing views of the "proper role of the bureaucracy in the constitutional order" are likely to disagree about the boundaries of reasonable agency interpretations. See Freeman & Spence, *supra* note 259, at 78 (citing Thomas J. Miles & Cass R. Sunstein, *Do Judges Make Regulatory Policy? An Empirical Investigation of Chevron*, 73 U. CHI. L. REV. 823 (2006)).

264. See *supra* Part II.

265. Justice John Paul Stevens, Address at ABA Section of Litigation International Human Rights Award Luncheon 3 (July 31, 2015), (transcript available at http://www.supremecourt.gov/publicinfo/speeches/JPS_Speech_ABA_Section_of_Litigation_International_Human_Rights_Award_Luncheon_07-31-15.pdf) ("Such a free-wheeling statutory decision can do even more harm—both to the public health and to the Court itself—than misinterpretations of the Constitution.")

In this context, an ecological theory of statutory interpretation shows why and how canons of construction should be extended to protect vulnerable ecological and intergenerational interests. The environmental canon of construction derived from this theory is consistent with the statutory mandate in NEPA and with underlying common law and constitutional values. It offers the potential for substantive shifts in judicial reasoning, placing environmental interests on the same level as other public values considerations, and confers the process-oriented benefit of incentivizing clarity in environmental statutes. It also provides an answer to the issue of eroded agency deference in major administrative law cases related to the environment.

In the early days of the modern environmental movement, Aldo Leopold wrote of a land ethic: “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise.”²⁶⁶ Leopold saw the land ethic as an extension of ethical principles that guide our interactions with one another in society. Once we see ourselves as existing within a broader “biotic community,” and not separate from it, we will include as part of our ethical considerations the impact of our actions on the environment.²⁶⁷

Looking forward, it is not, as Justice Scalia suggested in *King v. Burwell*, that the judiciary favors particular laws;²⁶⁸ rather, it is that the judiciary should favor particular *interests*. As a consequence, in an age when the legislature’s dialogue with other branches of government has slowed, and when environmental crises—and potential impacts for future generations—are becoming more clearly understood, the law is best served when judges are guided toward interpreting statutes in a way that furthers those interests.

266. LEOPOLD, *supra* note 86, at 224–25.

267. *See id.*

268. *King v. Burwell*, 135 S. Ct. 2480, 2507 (2015) (Scalia, J., dissenting) (arguing that the Court’s decisions regarding the Patient Protection and Affordable Care Act “will publish forever the discouraging truth that the Supreme Court of the United States favors some laws over others, and is prepared to do whatever it takes to uphold and assist its favorites.”).