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Lecture

Evolutionary Statutory Interpretation: Mr. Justice Scalia Meets Darwin*

Jeffrey G. Miller**

This paper examines the seeming contrast between the legal doctrines that the interpretation of statutes can evolve over time and that the interpretation of statutes must be grounded only in their texts, which never change unless amended by Congress. That examination is illuminated by complexity and meme theories. The examination is concluded by applying both doctrines and theories to the question of whether the term “navigable water” in a water pollution control statute includes underground water.

The idea that the interpretation of statutes may evolve is a recognition that events unfold over the decades in ways unforeseen and unforeseeable by the statutes’ drafters. Judges must adjust their interpretations of statutes to account for new circumstances if the statutes are to remain vital and not embed us in outmoded strictures. This exercise does not amount to law making by judges, in the sense that they are only seeking to determine how legislative intent applies to new circumstances, or what the legislature would have intended under new circumstances. Indeed, the interpretation of statutes evolves over the decades, even if judges attempt to interpret them as intended by their enacting legislatures, simply because the mindsets of succeeding generations are different. William Eskridge, per-

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haps today's leading scholar on statutory interpretation, has suggested this in what he calls the theory of dynamic statutory interpretation.¹ The idea that the interpretation of statutes can evolve, of course, explains the presence of Darwin in my subtitle. Although Eskridge sees statutory interpretation as dynamic, he does not use the metaphor of evolution and he does not employ complexity or meme theories in his discourse. They are compatible with and enrich his observations, however.

All this is anathema to the new textualists, of whom Justice Scalia is the most prominent proponent.² They believe there is

1. See WILLIAM N. ESKRIDGE, JR., *DYNAMIC STATUTORY INTERPRETATION* (1994). The thesis of the book is that statutory interpretation is dynamic.

The interpretation of a statutory provision by an interpreter is not necessarily the one which the original legislature would have endorsed, and as the distance between enactment and interpretation increases, a pure originalist inquiry becomes impossible and/or irrelevant . . . [S]cholarship confirms the thesis as a description of what courts and agencies do and has provided tentative support for the thesis as a proposition for what ought to be done with statutes.

Id. at 5-6. Eskridge posits that two factors make dynamism in statutory interpretation inevitable. First, of course, legislators cannot anticipate all the future events to which a statute will be applied. Second, the mindset of those interpreting and applying a statute is different from those enacting it.

2. Justice Scalia's textualism is rooted in both constitutional and practical observations. The Constitution, of course, vests authority to enact legislation in Congress, not in congressional committees or individual Members of Congress. Congress enacts statutory text, while Members and committees only comment on it in hearings, floor debates and committee reports. Looking to the latter to derive the meaning of a statute vests Members and committees with authority to give meaning to the statute, in essence transferring the authority the Constitution vested in Congress to its Members and committees. See, e.g., *Bank One Chicago N.A. v. Midwest Bank & Trust Co.*, 516 U.S. 264, 279-80 (1996) (Scalia, J., concurring in part and concurring in the judgment); *United States v. Estate of Romani*, 523 U.S. 517, 535-37 (1998) (Scalia, J., concurring); *Thompson v. Thompson*, 484 U.S. 174, 191-92 (1988) (Scalia, J., concurring).

Attempts to divine legislative intent behind a statute, except as it is embodied in the statutory text, is doomed to failure. Individual Members of Congress may have multiple motives for voting for a statute, one of many possible motives, or no motive at all. To reduce any Member to a single intent for voting for a measure vests her with a single purpose that often simply does not exist. If it is impossible to determine one Member's intent, the notion that the several hundred Members whose positive votes are necessary to enact a measure have a single intent is "a fiction of Jack-and-the-Beanstalk proportions." See *Bank One Chicago N.A.*, 516 U.S. at 279 (Scalia, J., concurring in part and concurring in the judgment); see also *Edwards v. Aguillard*, 482 U.S. 578, 636-37 (1986) (Scalia, J., dissenting).

Justice Scalia rejects all aspects of legislative history in favor of the statutory text: floor debates, *United States v. Taylor*, 487 U.S. 326, 344-45 (1988) (Scalia, J., concurring); committee reports, *Blanchard v. Bergerson*, 489 U.S. 87, 97-99 (1989)

no such thing as legislative intent. Legislatures enact statutes, which stand on their own and speak for themselves. Interpreting statutes begins and ends with the text of the statutes. If the legislature does not change the words of a statute, neither time nor judges can change its meaning. For judges to change the meaning of statutory text is an invasion of the constitutional prerogative of the legislature. Justice Scalia's prominence as a new textualist explains his presence in my subtitle.

These two ideas seem entirely at odds.³ The first suggests that judges are agents of statutory change, the second suggests they cannot be. The first is not adverse to change, indeed, it

(Scalia, J., concurring in part and concurring in the judgment); *O'Gilvie v. United States*, 519 U.S. 79, 98 (1996) (Scalia, J., dissenting); and rejected legislation, *Estate of Romani*, 523 U.S. at 535 (Scalia, J., concurring).

3. Darwin and Justice Scalia have met before, and not altogether comfortably. In *Edwards v. Aguillard*, 482 U.S. 578 (1987), the Court heard a challenge to a Louisiana statute requiring equal time for coverage of "creation science" if evolution was taught in the public schools. The Court held, seven to two, that the statute violated the First Amendment because it promoted a particular religious belief and had no secular purpose. Justice Scalia dissented on both grounds. Interestingly, for the purposes of this paper, he went behind the text of the statute and dissected its legislative history in detail to determine that the purpose of the statute was secular: the protection of academic freedom. Indeed, he chided the majority for not examining the legislative history.

Justice Scalia concluded that the starting point for the advocates of the legislation was that "[t]here are two and only two scientific explanations for the beginning of life - evolution and creation science." *Id.* at 622. Stephen Gould, the most prominent publicist of modern evolutionary theory, laments that "Justice Scalia does not understand the subject matter of evolutionary biology." STEPHEN JAY GOULD, *BULLY FOR BRONTOSAURUS: REFLECTIONS IN NATURAL HISTORY*, *Justice Scalia's Misunderstanding* 448, 457 (1991). Evolution doesn't explain the beginning of life, as postulated by Scalia. "Darwin never tried to grasp the meaning of life . . . but he did develop a powerful theory to explain its manner of change through time." *Id.* at 455. "Evolution . . . is not the study of origins at all . . . Evolution studies the pathways and mechanisms of organic change following the origin of life." *Id.* Even worse, Gould finds Justice Scalia does not understand that science is a method of proving or disproving ideas, rather than of developing thoughts, no matter how grand or pleasing, that are not susceptible to proof or disproof. Indeed, creationism is not science at all, since it is not susceptible to proof or disproof.

It is also clear that Gould has little or no understanding of the process by which the Court determines whether a statute violates the First Amendment or of the evidentiary differences between an appeal of a case decided on summary judgment, as this was, and a case decided after a trial on the merits. Nor can he disentangle Justice Scalia's use of the thoughts of the proponents of the legislation from Justice Scalia's own thoughts.

Without developing these issues further, it is clear that Justice Scalia and modern Darwinians are on different wave lengths.

embraces change. The second resists using judges to effectuate change, and the philosophy behind it is generally change adverse. The first is expansionist; it looks for higher purposes and overarching themes. The second is reductionist; it looks at the meaning of words and grammatical usage. Yet each of these ideas has something to recommend it.⁴ That being the case, our natural inclination as lawyers is to attempt to reconcile them, to show that at some level they are consistent.⁵ The ideas are so opposed, however, that it is difficult to reconcile them using normal methods of legal analysis. The conflict may be most acute when the statutes being interpreted are complex and detailed, *e.g.*, the pollution control or income tax statutes, as opposed to constitutional and summary, *e.g.*, the antitrust statutes. After all, where there is more text to be interpreted, textualism can be more informative.⁶

4. Critics of the new textualism agree that the use of legislative history can be and has been misused as a tool of statutory interpretation. They point out, however, that it can be a valuable tool when correctly used. See Stephen Breyer, *On the Uses of Legislative History in Interpreting Statutes*, 65 S. CAL. L. REV. 845 (1992). Eskridge too, in criticizing textualism, affirms its strengths. See ESKRIDGE, *supra* note 1, at 226-34; see also William N. Eskridge, Jr., *The New Textualism*, 37 UCLA L. REV. 621 (1990).

5. A possible reconciliation is that Eskridge's theory is an observation about how and why statutory interpretation in fact changes over time, while Justice Scalia's theory is a methodology which judges use to interpret statutes. While observations and methodologies are different, that difference does not reconcile the two; if Scalia's methodology were used faithfully, there would be little or no evolution in statutory interpretation. My colleague Ron Jensen argues Eskridge does not just observe that statutory interpretation is dynamic, but also advances a dynamic method of interpretation. Eskridge does go beyond observing that statutory interpretation *is* dynamic, to advocating that it *should be* dynamic. But this falls considerably short of suggesting a coherent method for judges and others to use to interpret statutes.

6. Indeed, when it comes to the Constitution itself, Eskridge and others contend that courts should interpret it in a dynamic way. See ESKRIDGE, *supra* note 1, at 234-38. Justice Scalia, on the other hand, contends that courts should interpret it to carry out the intent of its framers. See *Morrison v. Olson*, 487 U.S. 654, 697-99 (1988) (Scalia, J., dissenting). This continues the conflict between theories of evolving interpretation and static interpretation, one adjusting meaning to modern context, the other freezing it in a late eighteenth century context. But Justice Scalia's constitutional interpretation is not text bound, he is willing to look to the FEDERALIST PAPERS and history, as well as text, to interpret the Constitution. See *id.* It is not clear why he is willing to look beyond the text of the Constitution but not beyond the text of a statute. Perhaps it is because there is not the same separation of powers issue involved. But it is not clear why in his mind the Constitution speaks for itself less than a statute does.

However, if we hypothesize that statutory law and interpretation is a complex adaptive system⁷ or an interactive series of such systems, it is easy to see that both interpretive ideas play necessary roles in the system and may be reconciled on a systems level. Complex adaptive systems are a component of complexity theory. Complexity theory is a mathematical theory that seeks to find order in seemingly unordered systems. It is akin to chaos theory, which seeks to find order in chaos. Complexity theory finds patterns in complex adaptive systems. Complex adaptive systems are non-linear dynamic systems resulting from the collective behavior of basic units interacting with each other and to random events over time. Their interaction with random events gives the system the capacity to evolve. Because the events are random, we can predict they will cause the system to change, but we cannot predict what the changes

7. Professor Babcock succinctly explains complex adaptive systems and their place in complexity theory.

Complexity theory, which includes chaos and catastrophe theory, is an overarching field of mathematical analysis of the behavior of nonlinear dynamical systems. It offers a new way of thinking about the collective behavior of many basic interacting units (e.g., molecules, atoms, cells) that have the potential to evolve (or change) over time. While the definition of complexity is context-dependent, for complexity to emerge there must be both time (described by complexity theorists as an irreversible medium) and nonlinearity (a condition that produces complex and frequently unexpected results). Complexity theory shows why dynamic forces inevitably lead to unpredictable behavior in nonlinear systems, and that the most successful systems are those that maintain a balance between stasis and change and accomplish that result by maintaining a chaotic, random component in their midst. Complexity theorists are interested in explaining how order can emerge from this mass of evolving individual units and how unity can be found in diversity.

Hope M. Babcock, *Democracy's Discontent in a Complex World: Can Avalanches, Sandpiles and Finches Optimize Michael Sandel's Civic Republican Community?* 85 GEO. L.J. 2085, 2086 (1997).

The hypothesis that the legal system is a complex adaptive system and the use of chaos, complexity and complex adaptive system theories to illuminate legal issues are incorporated into a number of recent articles. See, e.g., Thomas Earl Geu, *Chaos, Complexity and Coevolution, The Web of Law, Management Theory, and Law Related Services at the Millennium*, 65 TENN. L. REV. 925 (1998) (Parts I and II) [hereinafter "Geu Parts I and II"]; Thomas Earl Geu, *Chaos, Complexity and Coevolution, The Web of Law, Management Theory, and Law Related Services at the Millennium*, 66 TENN. L. REV. 137 (1998) (Part III) [hereinafter "Geu Part III"]; J.B. Ruhl, *The Fitness of Law: Using Complexity Theory to Describe the Evolution of Law and Society and Its Practical Meaning for Democracy*, 49 VAND. L. REV. 1407 (1996).

will be, for there are simply too many variables for mathematic formulas to cope with. Successful complex adaptive systems maintain a balance between stasis and chaos. At their most successful, they occupy a space on the edge of chaos, evolving to adapt to changing circumstances but not changing in such an unrestrained way that patterns in the systems are destroyed.⁸ Simple non-linear systems lack the random elements which force systems to develop the capacity to change and are overwhelmed when confronted with changed circumstances, because they cannot adapt. Complex systems have the capacity to adapt, however, and do so constantly in reaction to the random elements in the system. The explanatory power of complexity theory is that lack of predictability is inherent in complex adaptive systems. Lack of predictability is an inevitable result of the very adaptation to random events that makes the systems successful. To expect predictable results from such systems is linear thinking and predictions based on linear thinking in such systems is suspect.⁹

Evolutionary biologists and ecologists quickly grasped the strength of complexity theory to explain why their sciences identified so many patterns but were unable to predict how species will change in reaction to changes in their complex environments.¹⁰ Others have grasped the strength of the theory to explain the dynamics of complex social systems: pluralist democratic society¹¹ and even common law. Indeed, common law appears to be a classic complex adaptive system.¹² It has many interactive components: judges, plaintiffs' lawyers, defendants' lawyers, plaintiffs, defendants, legal doctrines, and the facts of individual cases to name only the most obvious. The facts of individual cases are purely random, while the abilities and inclinations of the human actors have a great deal of randomness about them. The nature of the facts of individual cases and the

8. See Ruhl, *supra* note 7, at 1410.

9. See Geu Parts I and II, *supra* note 7, at 929 (among other things, Geu tells us, this explains why doomsday prophecies are invariably wrong. They are based on linear projections of changes in one variable in a complex system with many variables. *Id.* at 948. Of course the other variables, which the prophets do not predict to change, do change).

10. See Geu Part III, *supra* note 7, at 140-43.

11. See Babcock, *supra* note 7, at 2086.

12. See Geu Part III, *supra* note 7, at 191.

inclinations of the human actors are influenced to change by forces outside the system. The strength of the system is that it adapts to changing circumstances brought about from random facts in individual cases, adopting changes in doctrine appropriate to the changed circumstances. The common law, of course, is part of a larger complex adaptive system, *i.e.*, the entire legal system. That, in turn, is part of larger complex adaptive social and economic systems. Because statutory interpretation has the same components as the common law, except that statutes are substituted for legal doctrines, it constitutes the same sort of complex adaptive system as common law.

Evolutionary statutory interpretation enables the statutory application system to adapt to change, keeping it vital and healthy.¹³ Rapid, infinite and unbounded change, of course, would lead to the breakdown of the system, in short, to chaos. The resistance of the new textualism to change acts as a drag on change and keeps the whole system from falling into chaos. Complexity theory suggests such systems perform at their optimum levels when poised on the edge of chaos. Complexity theory further suggests that both adaptability by change and resistance to change are characteristics of complex adaptive systems, and both are necessary to such systems. Complexity theory provides a context in which to reconcile evolutionary statutory interpretation and the new textualism. Both are necessary to maintain the complex system of statutory law balanced on the edge of chaos, falling neither into rigidity nor into chaos.

My inquiry centers on the simple phrase “navigable water” as it is used in the Clean Water Act (“CWA”).¹⁴ The question is whether the phrase includes ground water or is confined to surface water. That is a basic and important question in water pollution jurisprudence because it is a jurisdictional question. The statute prohibits discharges of pollutants from point sources to

13. See Geu Parts I and II, *supra* note 7; see also Geu Part III, *supra* note 7 (the system by which legislatures enact statutes and the system by which courts interpret and apply statutes could be regarded as separate complex adaptive systems evolving in an interrelated way or as parts of a single system. Geu I, II, and III explore the co-evolution of two other parallel complex adaptive systems, law and business organizations).

14. 33 U.S.C. §§ 1251-1387 (1994).

navigable water unless they are authorized by permits.¹⁵ It does not prohibit or otherwise regulate such discharges to water that is not navigable.¹⁶

The contention that navigable water includes ground water was first articulated and supported in a law review article by now Professor Mary Christina Wood in 1988.¹⁷ The contention came as a surprise to me. I had been intimately involved in the administration and interpretation of the CWA since its enactment in 1972¹⁸ and had never considered or heard a suggestion that it applied to anything but surface water.¹⁹ Accordingly, I dismissed Wood's article as naïve.

I began to notice a trickle of judicial decisions suggesting that ground water could be navigable under the Act if the

15. 33 U.S.C. § 1311(a) establishes that, except as authorized by a permit, "the discharge of any pollutant by any person" is illegal. 33 U.S.C. § 1362(12), in turn, defines "discharge of a pollutant" to be the addition of a pollutant to navigable water from a point source.

16. Two permit programs are established to regulate discharges of pollutants to navigable waters from point sources, 33 U.S.C. §§ 1342 and 1344. The states are expected to establish programs to regulate the discharge of pollutants to navigable waters from non-point sources, 33 U.S.C. § 1288. The statute contains no programs aimed at controlling pollution added to non-navigable water.

17. See Mary Christina Wood, *Regulating Discharges Into Groundwater: The Crucial Link in Pollution Control Under the Clean Water Act*, 12 HARV. ENVTL. L. REV. 569, 589 (1988).

18. While I was in the Environmental Protection Agency from 1971 to 1981, the CWA permit program was administered by the enforcement office. As Enforcement Branch Chief and later as Enforcement Division Director of EPA's Region I, I assisted in and then supervised the issuance and enforcement of CWA permits in New England from 1972 through 1975. As Deputy Assistant Administrator for Water Enforcement in Washington, D.C., from 1975 through 1979, I administered the permit issuance and enforcement program nationally. As acting Assistant Administrator for Enforcement from 1979 to 1981, I supervised that as well as other enforcement programs. Since leaving EPA I have continued a close relationship with the CWA as a practitioner, scholar and teacher. Although my book on citizen suits examined citizen suits under all federal environmental law statutes, most citizen suits were under the CWA and the book naturally focused on that statute to a great extent. JEFFREY G. MILLER, *CITIZENS SUITS: PRIVATE ENFORCEMENT OF FEDERAL POLLUTION CONTROL LAWS* (1987). As my present and former students know, I teach our Environmental Skills and Practice course as a detailed examination of the interpretation and implementation of the CWA, using as a text the unpublished manuscript Miller, Long & Powers, *INTRODUCTION TO ENVIRONMENTAL LAW: CASES AND MATERIALS ON WATER POLLUTION CONTROL* (1999) (unpublished manuscript, on file with the author).

19. See *infra* text accompanying notes 39-40 (there was one exception in my experience, the injection of pollutants into wells at a facility which also required a CWA permit to discharge into surface waters).

ground water flowed soon thereafter into navigable surface water.²⁰ These decisions had three things in common. They were all brought by environmental groups rather than by the government. The most recent decisions cited and relied on the article I had dismissed as naïve. Finally, they all ignored the fact that most ground water eventually returns to surface water as part of the hydrologic cycle.²¹ Once that is recognized, there is no principled way to prevent their premise that some ground water is navigable from making almost all ground water navigable. At this point I conferred with Dean Richard Ottinger on the subject. Dean Ottinger had been a Member of Congress and active in environmental legislation when the CWA was enacted in 1972. Indeed, he was one of its sponsors. He confirmed my original assumption: it was not Congress' intent to regulate the pollution of ground water, nor was it Congress' intent that navigable water include ground water. Indeed, he told me his former colleagues in the enacting Congress would say exactly the same thing if they were asked.

When I wrote the problem for a recent Pace National Environmental Moot Court Competition, I included as one of its four issues the question of whether navigable water included ground water.²² I thought the issue was fairly one sided, but enough recent case law suggested that ground water could be navigable under some circumstances to make the issue interesting. Shelley Eccleston, Class of '99, wrote the bench brief for the Competition. I was surprised that she assumed from the outset that ground water was navigable. She reasoned that the purpose of the CWA was to control water pollution and even the pollution of surface water could not be controlled without controlling the pollution of all tributary water, including tributary ground water. I was even more surprised that Shelley's bench brief,

20. See, e.g., *Quivira Mining Co. v. EPA*, 765 F.2d 126 (10th Cir. 1985); *Mutual Life Ins. Co. v. Mobile*, 1998 WL 160820 (N.D.N.Y. 1998); *Williams Pipeline Co. v. Bayer Corp.*, 964 F.Supp. 1300 (S.D. Iowa 1997); *Friends of Santa Fe County v. LAC Minerals, Inc.*, 892 F.Supp. 1333 (D.N.M. 1995); *Sierra Club v. Colorado Refining Co.*, 838 F.Supp. 1428 (D.Col. 1993); *McClellan Ecological Seepage Situation v. Weinberger*, 707 F.Supp. 1182 (E.D.Cal. 1988), *vacated on other grounds*, *McClellan Ecological Seepage Situation v. Perry*, 47 F.3d 325 (9th Cir. 1995).

21. See FLETCHER G. DRISCOLL, *GROUNDWATER AND WELLS* 54 (1999).

22. See 16 PACE ENVTL. L. REV. 353 (the best briefs and the bench brief are published in this edition).

and many of the briefs in the Competition, found the statute littered with indications that “navigable water” both 1) does not include ground water and 2) does include ground water.

The best indication that it does not include ground water is the wording of the phrase “navigable water.” You don’t have to be a sailor to recognize that navigable means usable for transportation by watercraft, which excludes underground water by definition. Moreover, the term “navigable water” has long been a legal term of art in three distinct contexts. The first use of the term is to determine the ownership of land beneath surface water. If water is navigable, the bed beneath it is owned by the state; if water is not navigable, the bed is owned by the adjacent landowners.²³ The second use of the term is determining whether the public has rights of fishing and transport on a particular waterway. If water is navigable, the public rights exist; if water is not navigable, the public rights do not exist.²⁴ Both of these uses of the term, of course, connote surface water. The third use of the term is to define the scope of the federal government’s jurisdiction under the Commerce Clause of the Constitution. Initially, navigability for Commerce Clause jurisdiction was navigability in fact; navigability was limited to waters usable by commercial vessels.²⁵ The interpretation of navigability for Commerce Clause jurisdiction evolved, however, to include waters presently used or usable for navigation, waters that had been used or usable for navigation, and waters that could be made usable for navigation with reasonable improvements.²⁶ Now that recreational use of water is becoming economically significant, the concept is growing by bits and starts to include waters usable to canoe or kayak.²⁷ But all of these tests connote surface water, not ground water.²⁸

23. See A. DAN TARLOCK, *LAW OF WATER RIGHTS AND RESOURCES*, §§ 8.02 - .03 (1988 & Supp. 1993).

24. See *id.* § 8.05.

25. *The Daniel Ball*, 77 U.S. (10 Wall.) 557, 563 (1870).

26. *United States v. Appalachian Elec. Power Co.*, 311 U.S. 377, 407 (1940).

27. *United States v. Underwood*, 344 F.Supp. 486, 496 (M.D.Fla. 1972).

28. See TARLOCK, *supra* note 23, § 9 (provides a further discussion of the evolution of navigability for Commerce Clause jurisdiction).

Enter meme theory.²⁹ Meme theory was developed by evolutionary biologist Richard Dawkins.³⁰ Dawkins posits that some ideas are contagious and have lives of their own. To him they are the cultural equivalent of genes. They leap into our minds, occupy them, propagate by leaping from our minds into the minds of others, and sometimes evolve during these leaps. We have all had the experience of an idea entering our heads and so taking possession of them that it won't let go, even when we try our hardest to get rid of it. A catchy tune, for instance, a piece of gossip, or worse, a racial or cultural stereotype. We have all seen how these ideas may change a little as we pass them from one to another. Since I can hardly carry a tune, anyone who hears it from me, hears it differently than I did when it infected my mind. And we all know how a juicy piece of gossip invariably evolves as it passes from one to another. These idea memes may be dependent on human minds for their very existence, but that does not prevent them from having lives of their own. After all, we harbor physical parasites that will cease to exist when we die and strains of parasites that will become extinct completely when there are no more humans. Yet who would deny that the parasites have lives of their own, separate and apart from ours? Memes then, are a sort of mental parasite or virus, inhabiting our brains but having their own existence as well.³¹ The analogy of memes to viruses may explain why the greatest use of the concept in legal literature is in articles on intellectual property issues related to the worldwide web.³² "Navigable water" is a meme that thrives in an environment of legal minds. The "navigable water" meme had occupied my brain in the 1970s, when I first considered the term as a juris-

29. I was introduced to the theories of complex adaptive systems and of memes and their use in analyzing legal issues at a conference of the Society for Evolutionary Analysis in Law, hosted at Pace University School of Law on October 16-17, 1998 by my colleague John Humbach.

30. See RICHARD DAWKINS, *THE SELFISH GENE* (1976).

31. See Babcock, *supra* note 7, at 2089 (Babcock calls a meme a "cultural virus that has the capacity to self-replicate in an informational diaspora.").

32. See, e.g., Kenton K. Yee, *Location.Location.Location: Internet Addresses as Evolving Property*, 6 S. CAL. INTERDISC. L.J. 201, 224-25 (1997); James Boyle, *Foucault in Cyberspace: Surveillance, Sovereignty, and Hardwired Censors*, 66 U. CIN. L. REV. 177, 183 (1997); Edward A. Cavazos, *The Idea Incubator: Why the Internet Poses Unique Problems for the First Amendment*, 8 SETON HALL CONST. L.J. 667, 671-72 (1998).

dictional requirement for Environmental Protection Agency ("EPA") permit issuance. It did not evolve in my mind. But it clearly did evolve in the meantime as it leapt between the minds of others, including Professor Wood's.

Memes evolve, as do legal concepts. Evolution is an adaptive process in which a species either changes slowly to more efficiently fit its environmental niche or changes quickly to fill newly available environmental niches.³³ In either case evolution takes place in reaction to external forces. Congress is one external force in the evolution of the navigable water meme. Congress defined the term for the purposes of the CWA as "the waters of the United States."³⁴ Both traditional statutory interpretation and the doctrine of the new textualists tell us the interpretation of the phrase begins with these words. Yet they are ambiguous. They could mean every drop of water in the country. They could mean water in which the federal government has some ownership interest. They could mean water over which the federal government has some jurisdiction. Under any of these alternatives the definition may signal that Congress meant to abandon, or perhaps expand the traditional concept of legal navigability. Or it could signal that Congress meant to retain the surface water vestige of the traditional concept because it used the phrase "navigable water" to begin with.

To resolve this ambiguity, the next step, both traditionally and according to the new textualists, is to examine the remainder of the statute to determine the meaning of the phrase from its statutory context. Here we run into more ambiguity. The phrases "navigable water," "surface water," and "ground water" are used repeatedly throughout the statute. The use of the three terms could indicate that Congress used them either synonymously or differently. Close observation discloses that "navigable water" is never used in the same sentence as "surface water," while "ground water" is repeatedly used in the same sentence as either "navigable water"³⁵ or "surface water."³⁶ This suggests that Congress used "navigable water"

33. See, e.g., Geu Parts I and II, *supra* note 7, at 931; Geu Part III, *supra* note 7, at 138-42.

34. 33 U.S.C. § 1362(7).

35. 33 U.S.C. §§ 1252(a), 1254(a)(5), 1256(e)(1), and 1314(f)(F).

36. 33 U.S.C. §§ 1282(b)(2), 1288(b)(2)(K), and 1362(6).

and “surface water” as interchangeable terms, but used “ground water” as a different term from both of the others. Moreover, the stated purpose of the statute is to attain fishable and swimmable waters, activities that are associated with surface water, not ground water.

However, the statute contains contradictory evidence. Remember that the statute prohibits the discharge of pollutants to navigable water from point sources without permits.³⁷ Its definition of “point source” includes wells.³⁸ Wells lead to ground water, not surface water. Since the only significance of the term “point source” is to define what discharges require permits, the inclusion of wells would be meaningless unless discharges of pollutants through wells to ground water require permits. Moreover, for EPA to approve a state permit program, the state must have legal authority to “control the disposal of pollutants into wells.”³⁹ This could only mean that Congress contemplated that at least states, if not EPA, would control some discharges to groundwater.⁴⁰ The definition of “pollutant” also excludes various discharges through wells.⁴¹ This has the same implication, for the same reason. As for our assumption that water transport, fishing and swimming are surface water activities, what about the underground lake in Mammoth Cave National Park, on which all three activities can take place?

37. See *supra* text accompanying note 15.

38. 33 U.S.C. § 1362(14).

39. 33 U.S.C. § 1342(b)(1)(D).

40. If states were required to have this authority, EPA arguably had it as well, for § 1342(a)(3) states that EPA’s permit program and EPA issued permits “shall be subject to the same terms, conditions, and requirements as apply to a state program and permits issued thereunder.” In the early 1970s EPA briefly claimed authority to issue a permit to a facility discharging through an injection well, but only when the facility also discharged to surface water. This claim of “ancillary jurisdiction” was initially upheld in *United States Steel Corp. v. Train*, 556 F.2d 822, 852-53 (7th Cir. 1977), but was rejected six weeks later in *Exxon Corp. v. Train*, 554 F.2d 1310, 1317-31 (5th Cir. 1977). The court in *Exxon* exhaustively surveyed the relevant legislative history. See *id.* at 1325-31. The permit applicants in both cases challenged EPA’s issuance of CWA permits to facilities for both surface water discharges and deep well injection discharges, when the applicants applied only for surface water discharge permits. EPA appears to have silently acquiesced in *Exxon*, for it ceased to claim even this limited jurisdiction for discharges to groundwater. See also *United States v. GAF Corp.*, 389 F.Supp. 1379, 1383 (S.D.Tex. 1975); *Inland Steel Co. v. EPA*, 901 F.2d 1419, 1422-23 (7th Cir. 1990) (questioning *United States Steel* in dicta).

41. 33 U.S.C. § 1362(6).

The new textualism appears to be unable to resolve the basic interpretive question posed and examined here, unless the court simply uses one side of the analysis in a results-oriented decision. This inability arises in large part from the fact that the statute involved is over a hundred pages long, establishes several programs, has been amended repeatedly, and is complex. The CWA's text and structure are simply ambiguous from any perspective that the new textualism can bring to bear. It is doubtful that any statute as long and complex can be written without ambiguities in its wording and structure.

What now? In traditional legislative interpretation, we would go to the legislative history to determine the intent of the legislature. We know from talking to Dean Ottinger, and from my own experience, that the enacting Congress had no intention of requiring permits for discharges to ground water. That would require a federal permit for every septic tank and inject EPA into virtually every local land use decision in the country, a consequence clearly not intended.⁴² Indeed, both houses of Congress rejected amendments that would have included ground water in the definition of navigable water.⁴³ The debates generated statements detailing reasons why Congress had no intent to regulate discharges to ground water.⁴⁴ However, rejection of the amendments is not a clear indication of legislative intent on the ground water issue, because the

42. 33 U.S.C. § 1288(e), calling for regional planning for the location and capacity of federally funded municipal sewage treatment plants and non-point source control, comes as close to land use planning as anything in the CWA. Yet it is quite clear that such planning as is done is to be done by local agencies. EPA's only involvement is funding and studies.

43. Senator Cooper, for instance, introduced S. 1041, which would have extended water quality protection to groundwater. The Senate Public Works Committee Subcommittee on Air and Water considered that proposal, among many others, in the 1971 hearings leading to the drafting of the 1972 CWA S. Rep. No. 92-414 (1971), *reprinted in* 1972 U.S.C.C.A.N. 3668, 3770. Rep. Aspin introduced a similar amendment in the House of Representatives, where it was rejected. *See* 118 CONG. REC. H10,666, 10,669 (daily ed. March 28, 1972) *See also* *United States v. GAF Corp.*, 389 F.Supp. 1379, 1383 (S.D.Tex. 1975).

44. "Because jurisdiction regarding groundwaters is so complex and varied from State to State, the Committee did not adopt this recommendation." S. Rep. No. 92-414 (1971), *reprinted in* 1972 U.S.C.C.A.N. 3668, 3739.

amendments contained other provisions that generated opposition.⁴⁵

Perhaps the best indication of Congress' intent regarding its definition of "navigable waters" is the statement of Rep. Dingall, chair of the Commerce Committee, the authorizing committee in the House, and one of the chief architects of the statute. He stated that the intent behind the definition was to extend the statute to the full measure of federal jurisdiction under the Commerce Clause of the Constitution.⁴⁶ Indeed, the Report of the Conference Committee on the final bill in both houses contains similar language.⁴⁷ Because Commerce Clause jurisdiction can extend to ground water,⁴⁸ this could be an indication of congressional intent to do so. On the other hand, since Congress continued to use the term "navigable water," long and logically associated with surface water, perhaps it indicated an intent only to extend jurisdiction to the full measure of constitutional authority over surface water. The latter interpretation of congressional intent is confirmed by the fact that two years later Congress enacted the Safe Drinking Water Act, prohibiting, among other things, the discharge of materials into wells without a Safe Drinking Water Act permit.⁴⁹ The intent behind this requirement was to prevent the pollution of aquifers that were presently or potentially sources of drinking water. The Safe Drinking Water Act permitting scheme, of course, would be unnecessary and redundant, if the Clean Water Act already required permits for such discharges.

In the end, legislative history is ambiguous. Individual pieces of it can be used to support either argument. That does not mean that Dean Ottinger's account of congressional intent is wrong. It means that his account simply is not the only possi-

45. See, e.g., *United States Steel Corp.*, 556 F.2d at 853 n.66 (deleting exemption for oil and gas production-related well injection).

46. "Thus, this new definition clearly encompasses all water bodies, including main streams and their tributaries, for water quality purposes." *United States v. Holland*, 373 F.Supp. 665, 672 (M.D. Fla. 1974).

47. "The conferees fully intend that the term 'navigable waters' be given the broadest possible constitutional interpretation . . ." Conf. Rep. No. 92-1236, Joint Explanatory Statement of the Committee of Conference (1972), reprinted in 1972 U.S.C.A.N. 3776, 3822. The statement may be given special weight because the Conference Committee gave the definition its final wording.

48. See *Sporhase v. Nebraska*, 458 U.S. 941, 953-54 (1982).

49. 42 U.S.C. §§ 300h-300h-3 (1994).

ble reading of the documented statutory history. That is not surprising. His observations reflect the mindsets and assumptions of Members of the enacting Congress. Mindsets and assumptions are not likely to be stated explicitly in statutory history. The more basic an assumption, the less likely it is to be definitively stated. Since everyone knows it, it need not be stated.

The new textualists tell us we should not be searching for legislative intent at all, because it does not exist. As Justice Scalia reminds us, the statements of individual congressmen tell us nothing about what Congress itself intended, only about what the individual congressmen intended. And their statements are not even definitive indications of their actual intent.⁵⁰ Nor do committee reports tell us any more than what the committee intended.⁵¹ Indeed, since they are usually written by committee staff, they probably do not even do that.⁵² Ac-

50. See *Edwards v. Aguillard*, 482 U.S. 578, 636-37 (1986).

51. See *O'Gilvie v. United States*, 519 U.S. 79, 98 (1996).

52. Indeed, I know from experience that reports may not even be written by Committee staff. When I was EPA's Deputy Assistant Administrator for Water Enforcement and in charge of administering the CWA's permitting and enforcement programs, *Republic Steel Corp. v. Train et al.*, 557 F.2d 91 (6th Cir. 1977) (*Republic Steel I*), implicitly held that courts exercising their injunctive authority had power to extend the CWA's congressionally established compliance dates. Concerned with the implications of this holding, I drafted language rejecting the decision and gave the language to staff of the Senate Environment and Public Works Committee, which was then considering an amendment giving EPA the power to extend a particular congressionally established compliance date under specified circumstances in what became 33 U.S.C. § 1319(a)(5)(B). The language was incorporated into the Committee Report on that amendment.

Under existing law there are no circumstances that justify a time for compliance extending beyond July 1, 1977. The Administrator can only issue an enforcement order requiring compliance within 30 days or initiate civil or criminal action. Thus, the decision of the U.S. Court of Appeals for the Sixth Circuit in *Republic Steel Corp. v. Train et al.* and *Williams*, ___ F.2d ___ (6th Cir. 1977) was an incorrect interpretation of existing law.

S. Rep. No. 95-370 at 60 (1977), reprinted in 1977 U.S.C.C.A.N. 4326, 4385.

The Supreme Court remanded *Republic Steel I* with instructions to consider the statutory change. *Costle v. Republic Steel Corp.*, 434 U.S. 1030 (1978). In reversing its earlier decision on remand, the Sixth Circuit quoted the Report language. *Republic Steel Corp. v. Costle*, 581 F.2d 1228, 1231 (6th Cir. 1978).

Justice Scalia disavows such use of comments on judicial decisions by Committee Reports in *Blanchard v. Bergerson*, 489 U.S. 87, 98-99 (1989).

As anyone familiar with modern-day drafting of congressional committee reports is well aware, the references to the cases were inserted, at best by a committee staff member on his or her own initiative, and at worst by a com-

cording to Justice Scalia's doctrine, the subsequent enactment of the Safe Drinking Water Act is irrelevant to our inquiry as well. What Congress does in a subsequent incarnation tells us nothing about its intent when it enacted a statute in an earlier incarnation.⁵³ The only evidence of what Congress meant when it enacted a statute is what it enacted. The analysis of congressional intent must therefore begin and end with the statute itself. Reliance on statements by committees or individual members has the additional infirmity of transferring to others the grant of legislative authority the Constitution made to Congress.⁵⁴

Where does this leave us? We have a jurisdictional term in a statute that is ambiguous on its face. Its ambiguity is confirmed by the structure of the statute. If we disregard the strictures of the new textualists and consult the legislative history, it too is ambiguous. If we consult what we know from our undocumented experience to be the intent of Congress, we can answer the question. But neither of the two suggested approaches to statutory interpretation will base statutory interpretation on undocumentable sources, and quite rightly so.

There is another level of evidence to which we may revert, either under the traditional analysis or under that of the new textualists. That is the interpretation of EPA. Under the *Chevron* test⁵⁵ enunciated by another new textualist, Chief Justice Rehnquist, when the interpretation of a statute is ambiguous, we may look to the interpretation of the agency to which Congress has entrusted the administration of the statute. Jus-

mittee staff member at the suggestion of a lawyer-lobbyist; and the purpose of those references was not primarily to inform the Members of Congress what the bill meant . . . but rather to influence judicial construction. What a heady feeling it must be for a young staffer, to know that his or her citation of obscure district court cases can transform them into the law of the land, thereafter dutifully to be observed by the Supreme Court itself.

53. "[T]he will of a later Congress that a law enacted by an earlier Congress should bear a particular meaning is of no effect whatever." *Estate of Romani*, 523 U.S. 517, 536 (1998).

54. See *Bank One Chicago N.A.*, 516 U.S. 264, 279-80; *Thompson v. Thompson*, 484 U.S. 174, 191-92; *Estate of Romani*, 523 U.S. at 536.

55. See *Chevron U.S.A., Inc. v. Natural Resources Defense Council*, 467 U.S. 837, 843 (1984).

tice Scalia embraces the doctrine.⁵⁶ It is a very pragmatic doctrine. The agency deals with the statute on a day-to-day basis, the courts deal with it only on occasion. The agency deals with every facet of the statute, the courts deal with only one facet at a time and never deal with it as an entirety. If any institution is able to discern a consistent policy and pattern and reconcile ambiguous or conflicting aspects of a complex statute, it is the agency administering the statute. Although this rationale is not articulated in *Chevron* or its progeny, it is a compelling rationale for the doctrine.

On another level, however, deference to agency interpretation of a statute is a curious doctrine, particularly in the context of the new textualism. If the statute is supposed to speak for itself, why is EPA more reliable as a textual reader than a court? Why doesn't it create as much or more of a separation of powers issue to seek definition of a legislative act from the executive branch as opposed to the judicial branch? Moreover, the agency's interpretation of a statute may change over time to respond to new circumstances. If the text is constant, why should courts defer to an agency's changing interpretations of it?

Whatever the merits of the doctrine, it is of little use here, for EPA's interpretation has been equivocal at best. It initially claimed jurisdiction over discharges to ground water only under very limited circumstances, and retreated even from that.⁵⁷ If my experience is any guide, in the initial stages of implementing the statute it was probably as obvious to EPA as it was to Congress that navigable water did not include ground water. Moreover, EPA was hard pressed to complete the permitting of point sources adding pollutants to surface water, and lacked the time and resources to expand its activities to the innumerable point sources discharging to ground water.⁵⁸ Recently, how-

56. See *Immigration & Naturalization Serv. v. Cardoza-Fonseca*, 480 U.S. 421, 453-54 (1987) (Scalia, J. concurring.).

57. See *supra* notes 39-40.

58. The CWA contemplated that EPA would issue all permits by the end of 1974, 33 U.S.C. § 1342(k), and that permittees would comply with the first level of pollution control by July 1, 1977, 33 U.S.C. § 1311(b)(1)(A). Yet by January 1978, over 30% of the permits remained unissued and nearly 20% of major industrial dischargers, nearly 60% of the major municipal dischargers, and nearly 70% of the major federally operated dischargers had failed to meet the first pollution abatement requirement. Council on Environmental Quality, ENVIRONMENTAL QUALITY

ever, EPA has edged toward embracing the position already staked out by Professor Wood, environmentalists and a few courts, suggesting that ground water may be navigable if it enters navigable surface water in short order.⁵⁹ That too is understandable. By now EPA should have wrung every possible pound of pollution out of the point sources discharging to surface waters and should have time and resources to address other pollution sources. Nevertheless, EPA's recent suggestion to this effect is suspect on several levels. First, where do the terms "navigable water" or "waters of the United States" even hint that navigability depends on how quickly ground water enters navigable water? More importantly, why should the interpretation by today's EPA be entitled to deference by the courts in telling us what the twenty-five year old phrase means?⁶⁰ Finally, since most ground water eventually flows into surface water, this opens the door to eventual inclusion of most ground water as navigable.

What does all this mean? The question and its answer, of course, are on many levels. The first and easiest is, what does "navigable water" mean? The second is, which theory of statutory interpretation is right? Finally, do complex adaptive theory and meme theory help resolve either of these questions?

What is the proper interpretation of "navigable water?" I am convinced that when Congress enacted the Clean Water Act it did not intend to regulate discharges to ground water. But I have no doubt that the courts will eventually embrace a definition of "navigable waters" that includes at least some ground water. Finally, I suspect that EPA will help the courts along by an interpretation or even a regulatory definition of "navigable waters" that includes at least some ground water. It serves the

1978: THE NINTH ANNUAL REPORT OF THE COUNCIL ON ENVIRONMENTAL QUALITY, 107-08, 110, 115 (1978).

59. In a preamble to regulations establishing permit standards for point source storm water discharges under the CWA, EPA stated that the "rulemaking only addresses discharges to waters of the United States, consequently discharges to ground waters are not covered by this rulemaking (unless there is a hydrological connection between the ground water and a nearby surface water body). 55 Fed. Reg. 47,990, 47,997 (Nov. 16, 1990). The parenthetical suggests EPA interprets navigable water to include ground water when it is hydrologically connected to a nearby surface water body.

60. See *supra* note 40 (the EPA did flirt with the issue in the early 1970s, but in a different and much more limited way).

purpose of the statute to do so: EPA can get closer to the statutory goal of making navigable waters fishable and swimmable by preventing pollution of all their tributaries, be they surface or underground.

What light does this shed on the validity of textualism or evolutionary statutory interpretation? Textualism is clearly useful in analyzing whether “navigable water” includes ground water. But it does not resolve the issue. Evolutionary statutory interpretation does not help to analyze the issue. But it does describe what is happening to the interpretation of “navigable water” and why it is happening. There is no doubt that courts are interpreting the phrase differently than they once did and differently than the enacting Congress understood it. They are doing so because the statute is ambiguous, because their mind-sets are different than those of an earlier generation, and because the facts of individual cases suggest that an expansive interpretation best serves the purpose of the statute to protect water quality.

Justice Scalia would object that change is possible, but change is in the hands of Congress, not the courts. As a practical matter, however, Congress is simply unable to cope with the thousand and one fine tunings to a complex statute that are suggested by the random circumstances of the cases arising under it to keep the statutory system vital. Justice Scalia would respond again that a change in direction as fundamental as expanding jurisdiction of the CWA from surface water alone to include both surface and ground water should be accomplished by Congress, not the courts. But this misses the point of the interpretive analysis. We cannot tell definitively from the text of the CWA whether this is a fundamental change. While Scalia’s responses may be doctrinally correct, his textual analysis cannot conclude this is a fundamental change unless the method is applied in a result-oriented manner.

Do complex adaptive theory and meme theory help resolve either of these two issues? They do not help interpret the statute. However, they do suggest why evolutionary statutory interpretation describes reality. If legal phrases are memes, by definition they evolve. If statutory interpretation is a complex adaptive system, by definition it must evolve or collapse. But most powerfully, complexity theory reconciles the two theories

of statutory interpretation and explains the pace of evolving interpretation. For the interpretation of a term like “navigable water” and the CWA itself to remain on the edge of chaos, between the twin destructions of stasis and chaos, they must be balanced by the push of unchanging textualism and the pull of unbridled evolution, but move toward change at a pace measured by the needs of the random components of the system. This does not help judges one bit in interpreting the phrase in any factual setting. But it does free them to use textualism and other interpretive methods to effectuate change. And it does help us to understand why change in statutory interpretation occurs, even in a textualist environment.⁶¹

61. Indeed, there is a delicious irony here. Justice Scalia’s textualism appears to be a tool calculated to serve a wider agenda of less government and less regulation. His natural inclination would be to say that discharges to ground water are not regulated under the CWA, for to rule otherwise would increase regulation. Answering the issue by reference only to the text, as he suggests, however, could support either regulating or not regulating discharges to ground water, leaving EPA to tip the balance in interpreting the phrase under the *Chevron* doctrine. Its interpretation over time would naturally be to expand its jurisdiction and protect water quality, both of which would favor regulating discharges to ground water. Indeed, EPA appears to be leaning toward regulating discharges to ground water in an initially limited way. Answering the issue by turning to the intent of the enacting Congress, as reflected in the mindsets of Dean Ottinger and his colleagues, however, would support not regulating discharges to ground water. Justice Scalia’s rejection of legislative intent as a tool of statutory interpretation may have the perverse effect of reaching results anomalous to his broader purpose when interpreting complex statutes in many situations such as this.