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A. Reason's History: Disciplinarity and the Academy: *The "End" of' Science, Philosophy, and Legal Theory*

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The "End" of: Science, Philosophy, and Legal Theory

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I. INTRODUCTION

Pierre Schlag's fascinating critique of reason raises fundamental issues regarding the status of reason within the legal academy, and, in turn, the status of legal theory as an enterprise.[1] Since its inception, there has been an infatuation with reason in American law. This enchantment, importantly, was not peculiar to legal theorists. Indeed, the call to reason is an instrumentalist strategy on the part of legal theorists. It lends the legitimacy of "objectivity" to the inherently political enterprise of law. Historically, these claims had an air of credibility given the prestige of science or as Schlag argues, "one could understand the plight of reason in American law, not so much as an oddity or a peculiarity, but rather as emblematic or symptomatic of some much broader cultural tendencies."[2] What makes our particular historical moment unique is that, unlike previous eras, the very idea of science is being interrogated, and by implication, notions of objectivity and reason are coming under heavy assault in a variety of intellectual fields.

Arguably, it is the general assault on reason that makes Schlag's critique of legal reasoning particularly intelligible and salient. Schlag has, in my mind, successfully dealt a significant skeptical blow to the project of doing a certain form of legal theory—legal theory based on a conception of universal truth. In this regard, reason is part of "*the unthought*" of American legal theory, and does serve the function of "*central command.*"[3]

This essay will reflect upon the prospects for legal theory in an era in which the very notion of reason has been called into question. Given the particular instability of reason in today's intellectual climate, can

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1. PIERRE SCHLAG, THE ENCHANTMENT OF REASON (1998).

2. *Id.* at 14.

3. Schlag argues that reason is "*the unthought*" of American legal theory because "[i]t is an orientation that is already in place, even before reason is called upon to do its work." *Id.* at 23. As such, reason acts as the "*central command,*" governing legal discourse. *Id.* at 26-29.

legal theorists continue with their "excessive constructions,"[4] or have we reached the "end" of legal theory as we know it? I think the answer is that we have reached the end of legal theory if only for the reason that it seems highly implausible to continue on with a quintessentially modernist project in our postmodern times.[5] In this regard, I agree with the descriptive thrust of Schlag's thesis—law's enchantment of reason. However, I disagree with what I take to be his prescriptive anecdote—pessimistic relativism. I will not pretend to suggest a way out of the relativist quagmire, but would like to point out alternatives that others (particularly in the fields of science and philosophy) have suggested may be of use as we contemplate the future direction of legal theory.

II. THE "END" OF SCIENCE

Science is the grand narrative that has dominated Western thought since Rene Descartes and Francis Bacon penned their opuses in the seventeenth century.[6] The seventeenth-century infatuation with science culminated with Newton's theory of physical laws, ushering in the "Scientific Revolution." The mechanistic vision of the universe laid out by Newton became the model of reason.[7] It seemed as though Newton had uncovered the tools to unlock the secrets of the universe. Seventeenth-century scientists had been struggling to devise a theory of universal gravitation that would replace ancient conceptions. At issue was the need to explain the motions of heavenly bodies. Galileo had already described earthly gravitational phenomenon, and now Newton had taken the scientific enterprise to the next level. He constructed a set of laws explaining the mechanics of motion in the heavens as well as on earth. The entire universe could be analogized to a machine, and its workings uncovered through the power of reason. While this rendition of Newtonian physics, as a description of how the universe hangs together, no doubt sounds familiar enough, his description of why the world acts as it does often gets lost in the rendition. However, the presumptions supporting Newton's laws of physics are important in understanding the larger meaning of the Newtonian worldview and to situating his thought

4. *Id.* at 145.

5. I know that the moment the terms modernism and postmodernism are introduced into any argument there is immediately room for definitional ambiguity. I do not propose to offer a definition for either of these terms but would point to the historical account of science and philosophy in this essay as offering a chronology of modernism and postmodernism in science, philosophy, and legal theory.

6. RENE DESCARTES, DISCOURSE ON THE METHOD (George Heffernan ed. & trans., 1994) (1637); FRANCIS BACON, NOVUM ORGANUM (Thomas Fowler ed., 1965) (1620).

7. ISSAC NEWTON, MATHEMATICAL PRINCIPLES OF NATURAL PHILOSOPHY (1687), *available at* http://members.tripod.com/~gravitee.

in the Western intellectual tradition.[8]

What accounted for gravitational phenomena? Newton, in an act of what he described as speculative philosophy (as opposed to the experimental philosophy that accounted for the laws of gravity), ascribed gravitational force to a stationary ethereal substance pervading the universe. This substance had the effect of repelling bodies in such a way as to account for gravitational pull. God, or to borrow the phrase coined by Newton, "The Deity," acted as the puppetmaster orchestrating this phenomenon.[9] The Deity was omnipresent and fixed—the one constant in time and space. As such, Newton postulated, time and space could be measured as absolute entities and were also fixed. Stephen Mason sums up the importance of this vision of the universe:

> Such a view that time, space, and motion were absolute quantities persisted right down to the twentieth century, for in all subsequent theories involving an etherial medium . . . there was one set of systems and observers in the universe who could measure in principle absolute velocities, namely those that were at rest in the cosmic order.[10]

This vision of absolute truth being knowable in the natural world, combined with Descartes's metaphysical conception of absolute knowledge, framed modernity and the quest for certainty (enchantment of reason) that has been a hallmark of Western intellectual thought.

In the early twentieth century, Albert Einstein put a facially relativist spin on Newtonian physics. Under the principle of relativity, physical laws are constant no matter where one is positioned in the universe.[11] All positions and observers are equal. The idea of a Deity regulating and observing the world from some fixed position is no longer necessary. Einstein replaced the concept of amorphous ether holding the world together with the idea of relativity:

> The measurements made by any given pair of observers would be completely symmetrical, in particular they would both ascribe the same relative velocity to the other. Thus there were no privileged observers, and no absolute space nor absolute time. The length of a rod would depend upon the relative velocity of the observer that measured it, so too would the time kept by a given clock. Furthermore no two observers in relative motion would observe two events as simultaneous unless the events occurred in the same place.[12]

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8. The following rendition of Newtonian physics comes largely from STEPHEN MASON, A HISTORY OF THE SCIENCES (1962) (originally published in 1956 under the title, MAIN CURRENTS OF SCIENTIFIC THOUGHT).

9. NEWTON, *supra* note 7.

10. MASON, *supra* note 8, at 207.

11. ALBERT EINSTEIN, THE MEANING OF RELATIVITY (5th ed. 1984) (1921).

12. MASON, *supra* note 8, at 544-45. Einstein's theory of relativity is divided into two parts,

While different observers would rightly view phenomenon from their own perspective, Einstein had devised a set of transformation equations to reconcile the differences. With the use of transformation equations, physicists had actually expanded their realm of knowledge. Einstein's theory of relativity did not throw physics into a relativistic quagmire. Outside of physics, however, in the broader social milieu, Einstein's theory was viewed as having radical implications for a relativistic worldview. Einstein rightly viewed these inferences from his work as misguided. Yet, even mistaken perceptions can have profound effects on our conception of the world. Einstein had unwittingly set in motion the seeds of twentieth century skepticism. Although non-scientists were incorrect in their view regarding relativity theory, the next major discovery in physics, quantum mechanics, would in fact reveal the relativistic nature of the physical world.

During the period in which Einstein was formulating his theory of relativity, physicists began peering deeper into the structure of matter, focusing on quanta. Early in his career, Einstein had identified the quanta as the individual unit of energy contained in light, thereby dispelling the previous theory that light energy was a continuous process. Einstein's work in this area built on Max Planck's research, Planck had earlier been doing research on the properties of quanta—arguing that the quanta is the fundamental measurement of radiated energy. This led to the development of quantum mechanics, the mathematical representation of atoms. However, unlike the certainty that complimented the Newtonian mathematical representation of universal order and Einstein's transformation equations, there was a probabilistic element to quantum mechanics.

Electrons, the elementary particles that are the fundamental constituents of matter spinning around the nucleus of the atom, could not be located with certainty at any given point. Werner Heisenberg made this "uncertainty principle" famous.[13] At a fundamental level it was impossible to have precise measurements, and the notion of strict causality had been thrown into doubt. The implications of the theory were so profound that Einstein refused to accept it, declaring, in the now famous quote, that God "does not play dice with the world."[14] Einstein would end his career in science searching for a "unified field theory" that would serve as the type of totalizing theory of the physical world that Newton had been thought to have constructed. It was a failed effort.

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his general theory and his special theory. He put forth his special theory first and then followed it with the general theory with its broader application.

13. American Institute of Physics website, *at* http://www.aip.org/history/heisenberg/p01.htlm.

14. Wolfram Research website, *at* http://scienceworld.wolfram.com/biography/einstein.html.

The developments in physics are emblematic of twentieth century science. Science has become a bit less sure of itself. The insecurity does not come from an inability to accomplish Herculean technological tasks—such as the construction of "smart" bombs or the invention of hand-held computers—but from a failure to provide the ultimate truth about the universe. This has led to the inevitable declaration, "The End of Science." Of course, in recent times there has been a virtual cottage industry in "End of" predictions: "The End of History," "The End of Progress," "The End of Science," and so on. With regard to science, and I think other fields of endeavor as well, it is more appropriate to think of the current phase of history as marking the intense questioning of a particular type of scientific quest, not the praxis of science. The quest began with the scientific revolution and has consumed Western intellectual thought on a number of levels—including legal theory.

A thorough accounting of the "End of Science" literature is beyond the scope of this essay. Nonetheless, John Horgan's relatively accessible text provides a good overview of the topic and lays out the gist of what I take from the debate.[15] The text is particularly useful because it does not set out to answer the question whether science has come to an end, but to provide a range of perspectives on the issue. I hope that it lends support to my assertion that there is a great deal of questioning regarding the status of science—even amongst highly respected scientists.

Horgan approaches the subject from the perspective of a journalist interested in whether "science" has reached its limits and discovered that the holy grail of science, "*The Answer*," is out of its reach. *The Answer* would be the theory that provides the solution to the mysteries of existence—the theory Einstein sought. It would be the ultimate theory of scientific "Truth." Horgan's basic thesis is that science has rubbed up against certain stubborn limits to its quest for *The Answer*. The most prominent of these barriers is science's own success. In an ironic twist, the end of science could simply mean that we know enough of the basic story about the way the world works such that there is not much for scientists to do. Of course, this would be a state of nirvana if our resting point had provided *The Answer*.

Horgan attempts to sustain his thesis by synthesizing the responses he receives in his travels through questioning a host of prominent scientists and intellectuals about the subject. It is up for debate whether Horgan succeeds in confirming his central thesis: the end of science. However, one does come away after reading the chronicle with a sense

15. JOHN HORGAN, THE END OF SCIENCE: FACING THE LIMITS OF KNOWLEDGE IN THE TWILIGHT OF THE SCIENTIFIC AGE (1996).

that there is a great deal more skepticism, and indeed mysticism, in the sciences than one might suspect. Nowhere is this more evident than in what is normally considered the "hardest" of sciences: physics. Here, we can pick up with the story of physics' post-quantum mechanics.

Physicists have made tremendous strides in theorizing about the deep structure of matter. In the 1980s their efforts led to a possible answer to the puzzle—superstring theory. According to superstring theory, the ultimate foundation for matter is not a point, which had been hypothesized under quantum mechanics, but minute loops of energy. These ten dimensional loops of energy dance about in space, creating the stuff of the universe. Aside from the fact that superstring theory requires that we cope with a phenomenon that has six more dimensions than our own four (the three of space, plus time), it is a phenomenon that is extremely small and distant. Horgan describes it as follows: "the strings are as small in comparison to a proton as a proton is in comparison to the solar system . . . . They are more distant from us, in a sense, than are the quasars that lurk at the farthest edge of the visible universe."[16] Physicists believed that they might have some hope in overcoming these seemingly insurmountable challenges with the construction of the superconducting supercollider, an "instrument" fifty-four miles in circumference that was to be built in Texas. Unfortunately, Congress pulled funding for the supercollider. In any event, Horgan points out that in order for such a device to even begin to peer at superstrings, it would have to measure some 1,000 light years around (1,000 times the size of the solar system). It does not seem as if physicists will be looking at superstrings anytime soon. So what are theoretical physicists up to nowadays?

One of the chief opponents of relativism in science, particularly physics, is Sheldon Glashow. Glashow, a Nobel laureate in physics, once dreamed of constructing a unified theory, but became disillusioned with the drift of physics towards superstring theory.[17] Why? As is evident from the description above, it cannot be proven empirically. Unlike Newtonian physics and Einstein's theory of relativity, we do not have the capacity to verify or refute the conjecture. Therefore, it does not qualify as physics—at least as Glashow defines it. It is more akin to a leap of "faith."

Glashow's skepticism regarding superstring theory can be juxtaposed to a leading innovator in the field, Ed Witten. Witten emphasizes that while superstring theory may not be empirically testable, it has the

16. *Id.* at 62.

17. *Id.* at 63.

qualities of "incredible consistency, remarkable elegance, and beauty."[18] Horgan describes this sort of argument as "naive ironic science."[19] It is practiced by scientists who believe that they can derive scientific truths from intuition. In short, it is science practiced as faith. Horgan notes that David Lindley, who wrote *The End of Physics*, argues that given the speculative nature of superstring theory, physics is in "danger of becoming a branch of aesthetics."[20]

At a minimum, physicists, even those who hold out hope for superstring theory, have reconsidered the quest for certainty. Steven Weinberg, author of *Dreams of a Final Theory*, has noted, "[a] lot of philosophy of science going back to the Greeks has been poisoned by the quest for certainty, which seems to me a false search."[21]

So far, I have presented the "orthodox" interpretation of quantum mechanics as implying a probabilistic universe. This was the position articulated by Niels Bohr and commonly referred to as the Copenhagen interpretation.[22] The noted physicist, David Bohm, has offered a deterministic interpretation of quantum mechanics in an effort to undercut its relativist implications.[23] He essentially gave a physical explanation, the pilot wave phenomenon, for Heisenberg's uncertainty principle. Ironically, Bohm also has championed a fundamental reconsideration of how we think about science. Bohm argues that the mechanistic view, our Newtonian and Cartesian legacy, still dominates scientific thinking.[24] However, given that the basic assumption behind this view, the appearance of reality, is false, we are in effect tilting at windmills.

Science is an inexhaustible enterprise in which, once we determine what seems to be an appearance of reality, we move to a different level of perception and appearance—reality changes. The leap from a Newtonian perspective to theories of relativity leading to a quantum view is a perfect example of this phenomenon. Bohm believes that we would be well served if we thought in terms of merging art and science: "[T]he division of art and science is temporary. It didn't exist in the past, and there is no reason why it should go on in the future."[25] The

18. *Id.* at 69.

19. David Hoffman, *Book Review: The End of Science: Facing the Limits of Knowledge in the Twilight of the Scientific Age*, 45 NOTICES OF THE AMS 260, 261 (1998), *available at* http://www.ams.org/notices/199802/bookrev-hoffman.pdf.

20. HORGAN, *supra* note 15, at 70.

21. *Id.* at 74.

22. John G. Cramer, *The Transactional Interpretation of Quantum Mechanics*, 58 REV. MOD. PHYSICS 647 (1986).

23. *Id.*

24. HORGAN, *supra* note 15, at 87.

25. Anthony Craig, *The Analogue Universe* (2000), *available at* http://thegoldenmean.homestead.com/analogue.html.

idea is that just as art has as its essence an attempt to deal with perception, so does science.[26]

Declaring the "end" of science does not necessarily mean that one needs to adopt some fanciful postmodern notion that there are no scientific truths. Newton's theory of gravity, in its limited application, is correct. As Sheldon Glashow has aptly put it, Newton's laws are "fine for predicting the trajectories of ICBMs or the times of eclipses."[27] Quantum theory works—just look at the nuclear nightmare it has brought upon us. Nevertheless, it deals a heavy blow to the preeminence of science and the quest for certainty (*The Answer*). The Nobel Prize winning physicist, Richard Feynman, has bemoaned that the fundamental rules governing the physical world have been revealed to us, yet science will no longer be able to stave off the incursions of philosophers.[28] However, as Horgan has noted, the end of science has come from within.[29] This is the central lesson one draws from his encounters. Without reconciling ourselves to some form of relativism, how do we cope with Heisenberg's uncertainty principle or the fact that there is a plausible alternative explanation in Bohm's theory? It is all a matter of perspective.

III. THE "END" OF PHILOSOPHY

Philosophers have traditionally, as part of their Kantian heritage, viewed one of their principal roles as arbiters of what constitutes knowledge. In keeping with this function, they have kept a very watchful eye on developments in the sciences. Indeed, much of the history of philosophy in the West tracks developments in science. The relationship (even if sometimes hostile) between Newtonian physics and Cartesian philosophy is a quintessential example of this phenomenon. Given this symbiotic relationship, it is not surprising that as the sciences have become less dogmatic (Newtonian), philosophy has begun to show cracks in its edifice.

Logical empiricism, a movement that may loosely be dated back to the early twentieth century, is the most recent and powerful scientific conception of philosophy. The logical empiricists wished to eliminate what they viewed to be Kantian metaphysics. The idea was not to replace philosophy with another form of metaphysical musing, but to substitute in its place the scientific method—the perfect merging of sci-

26. HORGAN, *supra* note 15, at 88.

27. Sheldon Lee Glashow, *The Death of Science!?*, *in* THE END OF SCIENCE? ATTACK AND DEFENSE NOBEL CONFERENCE XXV 23, 29 (Richard Elvee ed., 1992).

28. HORGAN, *supra* note 15, at 90-91.

29. *See generally* HORGAN, *supra* note 15.

ence and philosophy. (Of course, Kant had also taken this to be his task.) Ironically, the seeds of logical empiricism's demise were sewn by one of its principal founders—Rudolph Carnap.

Carnap had announced the mission of logical empiricism to be the placement of philosophy on a scientific footing.[30] However, no sooner had this manifesto of logical empiricism been published that it met with immediate criticism within the movement, forcing Carnap to reconceptualize his views. Carnap eventually accepted that there was no viable correspondence theory of truth and that the notion of truth had more to do with language than reality.[31]

While the logical empiricist program of "technical" philosophy, under the rubric of logical positivism, progressed unabated in the United States post-World War II, grand claims to the project of unifying science and philosophy fell into disfavor. The linchpin of this turn was the recognition that claims to Truth could no longer be sustained. Two of the most influential figures in American philosophy, W.V. Quine and Alfred Sellars, are in good part responsible for demonstrating the point. In perhaps the most influential argument in post-World War II American philosophy, Quine argued in *Two Dogmas of Empiricism* that two of the key dogmas of logical empiricism could not be sustained: 1) the demarcation between logical and synthetic truths; and 2) that scientific statements could be reduced to immediate experience.[32] Without these false dogmas in place, philosophers could no longer lay claim to embarking on an endeavor that would lead to the Truth. While the technical work of the logical empiricists (such as looking at the structure of language and logic of statements) would go on unabated, much as the work of science has continued forward, the hope of a grand theory of knowledge, the philosophical equivalent to *The Answer*, had to be abandoned.

The most popular harbinger of this retrenchment in philosophy is Richard Rorty who, in *Philosophy and the Mirror of Nature* (hereinafter "*Mirror of Nature*") critiques the Kantian philosophical tradition.[33] He describes this as the tradition obsessed with constructing a totalizing theory of knowledge so as to bring all of human inquiry under reason's enchantment. At no time was this quest more evident than in the efforts of logical positivists to construct a philosophy that would "unify" the sciences. Rorty chronicles the collapse of this effort, with a particular

30. RUDOLF CARNAP, THE LOGICAL STRUCTURE OF THE WORLD (1967) (originally published in German under the title, DER LOGISCHE AUFBAU DER WELT (1928)).

31. For a discussion of these developments, see CHRISTIAN DELACAMPAGNE, A HISTORY OF PHILOSOPHY IN THE TWENTIETH CENTURY (1999) (originally published as HITOIRE DE LA PHILOSOPHIE AU XX' SIECLE in 1995).

32. Willard von Orman Quine, *Two Dogmas of Empiricism*, 60 PHIL. REV. 20 (1951).

33. RICHARD RORTY, PHILOSOPHY AND THE MIRROR OF NATURE (1979).

focus on Quine and Sellars, and what he takes to be the "end" of the Philosophical project.

Rorty is faced with the same dilemma that plagues any proponent of an "end of" thesis: Where do we go from there? We can take his effort as an example of a philosophical approach to the question. Of course, Rorty's is just one of many approaches that have been suggested, but given his popular status, it is a useful starting point. One problem with trying to construct a synopsis of Rorty's position is that he has published widely, and his position has not necessarily been consistent. For purposes of brevity, I will focus my attention on *Mirror of Nature*, one of his most important and influential works on the topic.

In *Mirror of Nature*, Rorty suggests that the future of philosophy is in "hermeneutics." Yet, he is not putting hermeneutics forward as a successor project for epistemology, but as "an expression of hope that the cultural space left by the demise of epistemology will not be filled—that our culture should become one in which the demand for constraint and confrontation is no longer felt."[34] In offering hermeneutics as a prescription for philosophy, Rorty runs up against the same bogeyman as Schlag: "To suggest that there is *no* such common ground [(universal conception of knowledge)] seems to endanger rationality."[35]

Of course, as Schlag recognizes, the enchantment with reason has as its antecedent the presumption of a common (commensurable) language.[36] Rorty's hermeneutics would eviscerate this assumption and leave us in the position of recognizing a multiplicity of languages that we do not attempt to translate but with which we dialogue. Rorty's critique of commensurability borrows heavily from Thomas Kuhn's *Structure of Scientific Revolutions*, itself a major testament to the shift towards relativism[37]—although Kuhn has explicitly rejected certain relativists' "misreadings" of his position.[38]

Rorty views the concept of rationality as being culturally contingent. However, he is not as willing to submerge the concept of reason as Schlag appears to be. He is still fond of what he refers to as our Enlightenment inheritance. The hermeneutics he proposes, under the rubric of "edification," is described as a commitment to finding "new, better, more interesting, more fruitful ways of speaking."[39] These ways of speaking may come from a variety of perspectives, including "poetic"

34. *Id.* at 315.

35. *Id.* at 317.

36. SCHLAG, *supra* note 1, at 45-46.

37. THOMAS KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS (1962).

38. THOMAS KUHN, THE ESSENTIAL TENSION: SELECTED STUDIES IN SCIENTIFIC TRADITION AND CHANGE (1977).

39. RORTY, *supra* note 33, at 360.

activity. In this sense, Rorty is asking for the type of openness Schlag desires. Schlag regrets that our enchantment with reason has come at the cost of "sacrificing the other sources of belief, sources such as experience, custom, convention, intuition, disclosure, perception, awareness, understanding, and so on."[40] However, Rorty also holds onto the concept of "objectivity," defined as "conformity to the norms of justification (for assertions and for actions) we find about us."[41] My hunch is that Schlag would not feel comfortable with this formulation because, although Rorty warns against assertions that the norms of justification have any transhistorical or transcultural foundational grounding, he does seem to risk falling into the trap of reason. Schlag warns that faint calls for recognition of non-reason centered values of belief are often "recast in the image of reason or they are relegated to a secondary supporting status where they serve to confirm what reason has already wrought"[42]—thence, my description of Schlag as a "pessimistic relativist."

While Rorty's vision of hermeneutics may seem far afield from the science debates described above, there are some parallels between his vision and what scientists have been forced to do as scientists in the post-Newtonian era. Rorty's edifying philosophy has affinities with what Horgan describes as ironic science. Just as the science debates have not cut off, without consideration, what might be thought of as "abnormal" inquiry, Rorty would not have our general quest for knowledge be limited to the "normal"—that which conforms to the norms around us.[43] But, let us keep the conversation going.

The anti-foundational turn in philosophy has made itself manifest in the debates over the end of science. While we previously discussed what scientists do given the state of science, physics in particular, it is useful to discuss how philosophers have weighed in on what it means to do science. Ian Hacking, in his presentation to the twenty-fifth Nobel Conference, entitled "The End of Science? Attack and Defense," offered an intriguing answer to the question: where do we go from here?

Hacking, in his essay "Disunified Science," begins by making it clear that he is not a skeptic when it comes to science and is dismissive of what he refers to as the "rage against reason."[44] However, he does share the skeptical desire to "prune" the ideology of science.[45] For

40. SCHLAG, *supra* note 1, at 58.

41. RORTY, *supra* note 33, at 361.

42. SCHLAG, *supra* note 1, at 142.

43. RORTY, *supra* note 33, at 303.

44. Ian Hacking, *Disunified Science*, *in* THE END OF SCIENCE? ATTACK AND DEFENSE NOBEL CONFERENCE XXV 33, 34 (Richard Elvee ed., 1992).

45. *Id.*

Hacking, the ideology of science revolves around assertions that there is "one ultimate reality, one ultimate truth, one road to the truth (the scientific method), one sound mode of reasoning, [and] one national way of speaking."[46] Hacking believes that this ideology has come under legitimate critique as far back as initial criticisms of Bacon and Galileo. Nevertheless, he refuses to accept that science is not an objective enterprise or that we have reached the end of science. He takes as a prescient fact that science is almost universally accepted as a good thing. To harken back to Rorty, science is a part of our Enlightenment inheritance that we might want to keep around. The problem is to dethrone it from the all-encompassing position it has assumed since Bacon and Descartes.

Hacking argues that the real issue is not with science but with the hold that the concept of "unity" has on the Western mind. We are obsessed with the notion that there is *The* (singular) *Answer*. Hacking proposes that we substitute this concept of "singleness" with one of "harmonious integration."[47] This alternative vision of harmonious integration, which is analogous to Rorty's concept of conversation, has concrete implications. For example, Hacking describes the University of California at Berkeley biology department that is divided into six divisions as opposed to being placed under a single umbrella. This need to have a disunified science is manifest because there is no common language of science—apparently not even within biology. Hacking extends his thesis even further to argue that there is no common method in science. Quoting A.C. Crombie on the different styles of scientific reasoning in the European tradition, Hacking lists six: 1) mathematical/ axiomatic; 2) experimental; 3) hypothetical modeling; 4) ordering by comparison and taxonomy; 5) statistical analysis of populations; and 6) historical derivation of genetic development.[48]

Given the plurality of voices in science, there must be some way of bridging the divide between incommensurable enterprises that have the family resemblance of being a science. Hacking introduces the concept of "unifiers" ("tools, practices, and bodies of knowledge that span science") for bridging.[49] One example of a unifier is mathematics, a "language" that spans a variety of scientific disciplines. Hacking also cites computation and even scientific instruments as scientific unifiers. He is admittedly tentative in his discussion of unifiers, but does present an

46. *Id.* at 37.

47. *Id.* at 39.

48. *Id.* at 46 (relying on A.C. Crombie, *Philosophical Presuppositions and Shifting Interpretations of Galileo*, *in* THEORY CHANGE, ANCIENT AXIOMATICS, AND GALILEO'S METHODOLOGY (1981)).

49. *Id.* at 47.

interesting conception of how incommensurable theories might hang together in some sort of stable relationship:

> Stability results from a sort of self-authentication resulting from the mutual adjustment of theory, apparatus, data and much more. We get stability across radical change partly because a great many lesser scientific revolutions do not result in discarding a body of knowledge but in supplementing it with new kinds of instruments, creating a new category of data for which radically new theory is demanded . . . . Here we see a new use for Kuhn's idea of incommensurability.[50]

Hacking gives an interesting example of the type of analysis suggested under his theory. One can look at a table as a solid mass of wood or as a collection of atoms with huge spaces between the particles. How can this be? There is only one table. Yes, but there are different perspectives from which to analyze that table. Our job is to connect incommensurable visions.

Hacking concludes by linking his view of a disunited science with general cultural movements. He recognizes that in our postmodern times there is an increasing disunity in a variety of intellectual fields. Yet somehow there is a myth, dating back to the seventeenth century, that the sciences are unified. This myth has too often been held up by those who resist the pull of disunity as proving the correctness of their position. This is a mistake. The position on the other side, however, that given the disunity of science we can declare its end, is also mistaken. Again, as discussed earlier, what it marks is the end of a certain conception of science. What are the implications for legal theory?

IV. THE "END" OF LEGAL THEORY

Law and economics represents the most recent systemic attempt to fashion a legal theory that would provide the scientific foundation for law. As such, it epitomizes the enchantment of reason that Schlag challenges. Richard Posner, the chief proponent and philosophical Pied Piper of law and economics, fashioned a brilliant legal academic career based on the simple proposition that economic justifications lay behind the inner workings of the common law. A healthy part of his claim was that law and economics was simply a more powerful (conforming to the dictates of reason/science) tool than the previously dominant theory, legal realism, or any contemporary competitor. Putting in perspective the triumph of law and economics over legal realism, Posner once remarked: "One displaces a scholarly approach not by showing that it has limitations but only by producing a better [(more scientific)]

50. *Id.* at 49.

approach."[51]

Over the course of his academic career, this confidence began to be increasingly eroded by the heavy assault leveled by critics of law and economics. In particular, it was demonstrated that law and economics could not hold up to the dictates of science. Its theories were not empirically testable and its normative assumptions were just that, normative assumptions. I suppose at that point one might have declared the "End of Law and Economics." Yet, just as the case with physics, it would seem to be a bit premature because from all indications, the project of law and economics is even more vibrant than at its inception. Today it is almost a necessity for any top-flight law school to have at least some faculty conversant in law and economics, and in good part it is difficult to teach even the most basic of law school subjects without some rudimentary knowledge of the field. However, there is no longer the viable claim to epistemological superiority that marked Posner's earlier pronouncements.

Indeed, as a sign of the times (following the contour of philosophy discussed previously), Posner has made a lurch to pragmatism—the school of thought most associated with Rorty. (Of course, this coincided with his assent to the judicial bench, but I do not propose that the two have any relationship.) Somewhere along the way, after being bludgeoned for not conforming to the dictates of science, Posner concluded that there was no longer any need to take cover under science (defined as a discipline holding out the ultimate Truth) because science no longer held its exalted status in society.

This argument was first put forward in Posner's *Problems of Jurisprudence*.[52] Posner takes as his hero Jeremy Bentham, whom he credits as seeking to place law on a scientific footing in arguing for a utilitarian basis. According to Posner, however, the justification was not metaphysical, but pragmatic. It is the same sort of pragmatism that Posner attributes to his other intellectual hero—Oliver Wendell Holmes. And so the story continues through Benjamin Cardozo (conspicuously passing over later "legal realists") and eventually ending with Posner as the contemporary representative of pragmatist jurisprudence. As such, Posner argues for an "activity theory of law," supporting the notion of "objectivity as a cultural and political rather than epistemic attribute of legal decisions."[53] Do we hear echoes of Rorty? Yes.

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51. Richard Posner, *The Costs of Accidents—A Legal and Economic Analysis*, 37 U. CHI. L. REV. 636, 637 (1970).

52. RICHARD POSNER, THE PROBLEMS OF JURISPRUDENCE (1990) [hereinafter POSNER, JURISPRUDENCE].

53. *Id.* at 26.

Posner places his philosophical pragmatism in the lineage of Charles Sanders Peirce, William James, John Dewey, Charles Herbert Mead, Thomas Kuhn and Rorty (on the American front), and Ludwig Wittgenstein and Jurgen Habermas (on the European front). He is careful to "reject Rorty's Romantic, antiscientific brand of pragmatism," however, and has "very little sympathy for most of Habermas's views"—just so that you would not think he had slipped too far over into the relativist camp.[54] In this sense, Posner really is a throwback to a certain strand of early twentieth century pragmatism—particularly in his call for a scientific pragmatism. Reason will not be eclipsed.

Posner realizes that, given our postmodern times, there can no longer be any *a priori* claim to Truth. However, he still uses his conception of reason to act as arbitrator for American legal theory's contemporary dialogue. This comes through loud and clear in *Overcoming Law*, Posner's effort to situate the current state of legal scholarship.[55] Posner reasserts his pragmatic skepticism regarding claims to Truth, proposing that "[m]ost of our certitudes are simply the beliefs current in whatever community we happen to belong to." He joins the pragmatists in "[d]oubting that we will ever know that we have arrived at the ultimate truth(s)" and thus "values freedom of inquiry, a diversity of views, and experimentation."[56] Posner puts forth a critique of the mind as mirror of nature, doubting "that there is such a nice correspondence between our minds and the structure of the universe that we are capable of making complete and conclusive descriptions of the way things are."[57] Posner's critique of philosophical and legal reasoning are eerily similar to Rorty's and Schlag's: "The pragmatist [(Posner)] is especially dubious that the methods of the analytic philosopher, and its twin, legal reasoning, can be used to establish moral duties or legal rights."[58] In this regard, Posner faults the analytic philosopher and legal reasoner with "exaggerating the domain of logic."[59]

Because "all perspectives are . . . partial," Posner is obligated to recognize the contemporary perspectivism in American legal theory.[60] In covering the terrain of legal theory, Posner manages to have something to say about such divergent fields as law and economics, feminist theory, law and literature, critical race theory, and "left-wing" legal history. While a detailed discussion of Posner's views on this multiplicity

54. *Id.* at 27 n.42.
55. RICHARD POSNER, OVERCOMING LAW (1995) [hereinafter POSNER, OVERCOMING].
56. *Id.* at 5-6.
57. *Id.* at 9.
58. *Id.*
59. *Id.*
60. *Id.* at 10.

of subjects is beyond the scope of this brief essay, it is revealing that he sees the need to at least address the proliferation of ideas that make up American legal theory.

We can take as an example of his project Posner's discussion of critical race theory. Posner takes as his point of departure Patricia Williams's *The Alchemy of Race and Rights*.[61] It would be hard to imagine a field of legal theory farther removed from Posner's brand of law and economics. Posner describes the book as taking a "black feminist perspective" in an effort to critique "law's pretense to objectivity and impersonality."[62] He identifies Williams's storytelling method as a novel form, but notes that she is not alone in American legal theory in her use of literary methods. The subtitle, "Diary of a Law Professor," reveals Williams's purpose as providing a chronicle of the law and society through her gaze. At points, Posner is highly complimentary of Williams, citing her "powerful gift for narration" and comparing her favorably to Tom Wolfe.[63] Nevertheless, Posner is also very critical.

The criticism has as its foundation certain assumptions about the nature of legal reasoning. Posner is particularly taken aback at what he sees as Williams's failure to deal with facts. This first arises in Williams's description of a young, white store clerk in New York City who refuses her entry under the guise of the store being closed. In her narrative, Williams assumes that the store was open, since it was one o'clock in the afternoon on a weekend before Christmas. Posner queries, was the store in fact closed? He is critical of the appearance that "she [(Williams)]—a lawyer—did not attempt to verify the point."[64]

Posner notes that by her own account Williams is using the storytelling genre in "reconceptualizing from 'objective truth' to rhetorical event" in order to provide a "more nuanced sense of legal and social responsibility."[65] However, since Williams is doing legal theory, Posner will hold her to the "objective truth" (despite her protestations) and admonishes her to find out "what *really* was going on in that white teenager's mind when he told her the store was closed."[66] What of Posner's pragmatism? He responds, "[p]ragmatists may be dubious about truth with a capital T, but they respect those lowercase truths that we call facts."[67]

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61. PATRICIA WILLIAMS, THE ALCHEMY OF RACE AND RIGHTS: DIARY OF A LAW PROFESSOR (1991).

62. POSNER, OVERCOMING, *supra* note 55, at 368.

63. *Id.* at 369, 371.

64. *Id.* at 373.

65. *Id.*

66. *Id.*

67. *Id.* at 377.

Posner takes up several examples where he believes that Williams has failed to meet the standard of factual truth. Again, I suppose, unlike Tom Wolfe, Williams is a "lawyer and an academic" and she must play by the "rules of the scholarly game."[68] Here, Posner has assumed the position of high priest of legal reasoning. Schlag astutely identifies the tension between reason acting as *"central command,"* and *"big tent"* that bedevils Posner.[69] All too often the tension is resolved, as Posner does, by forcing those under the tent to heed to the central command of reason. In this regard, Schlag is justified in his pessimism. However, to Posner's credit, he recognizes that his criticisms of Williams may "turn out to be one-sided, misleading, and tendentious."[70] He understands his opinion as being "only one voice in an ongoing *conversation* and can leave it to others to rectify any omissions or imbalance in [his] contribution."[71]

Posner is actually more convincing when he directly addresses the substantive implications of doing narrative legal scholarship, as opposed to his game of factual "gotcha." He argues that, "[a] more basic point is that the internal perspective—the putting oneself in the other person's shoes—that is achieved by the exercise of empathetic imagination lacks normative significance."[72]

Here, Posner really is attempting to engage Williams on her own terms. This does not necessarily mean that there will be agreement. He believes that viewing the world from the perspective of the other can cloud judgment and is not necessarily edifying. Posner also faults Williams for a lack of clarity. The argument is not that Williams has made factual misrepresentations, but a claim that Posner genuinely cannot understand what Williams means to say when she makes certain statements. In a "big tent" regime where we take the ideas of others seriously and are attempting to bridge the gaps of incommensurability, this is the type of constructive criticism that is necessary for genuine dialogue. Posner ends by recognizing that "the very one-sidedness of [Williams's] presentation, however questionable by the *conventional standards* of scholarship . . . has value in providing insight into the psychology and rhetoric of many blacks"[73]—all human endeavors, including literary, do have the potential for contributing to our perception of the world.[74]

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68. *Id.* at 380-81.
69. SCHLAG, *supra* note 1, at 26-29.
70. POSNER, OVERCOMING, *supra* note 55, at 381.
71. *Id.*
72. *Id.*
73. *Id.* at 384.
74. *See generally* Craig, *supra* note 25.

In this light, I am sure to the surprise of many, Posner seems to genuinely be struggling with the problem of incommensurability in legal theory. Nonetheless, in "overcoming law," Posner does not fully overcome its enchantment with reason. He still clings to the "methods of science," even though he does not have any metaphysical "faith in the power of science . . . as the deliverer of final truths."[75]

Posner does not take the steps to fully dislodge the enchantment of reason for which Schlag argues. However, the steps he does take mark a telling moment in the intellectual history of American legal theory, given Posner's standing amongst legal theorists, his previous (and continued) association with the law and economics movement, and his current position as a United States Circuit Court Judge. It may be a moment of hope.

Given Posner's pragmatist turn, it is useful to examine how he defends his continued championing of law and economics as the preferred view of the world. His basic defense is a pragmatic sense that liberal capitalism, the ideological underpinning of Posner's brand of law and economics, works: there is "mounting evidence that capitalism is more efficient than socialism."[76] This defense of law and economics provides a picture-book example of what Schlag refers to as the "false modesty" of legal neopragmatists.[77]

Schlag identifies neopragmatist legal theorists who he argues represent a range of perspectives such as Margaret Jane Radin (politically progressive), Dan Farber (doctrinal instrumentalist), Joe Singer (Sartrean existentialist), and Posner. He accuses all of these legal pragmatists, as well as others who fall into the category, of paying lip service to a form of perspectivism that signals disenchantment with reason only to pull back once they reach the precipice. For Schlag, what makes this failure of conviction all the more disconcerting is that the end result of legal pragmatism is a hodge-podge of policy prescriptions, ultimately (as illustrated by Posner) in the service of the theorist's initial leanings.

While I agree with Schlag that linking pragmatist theory with any particular substantive point of view is highly suspect, I am perplexed at his frustration with the proliferation of perspectives that are generated in this postmodern setting. If anything, the range of positions, when viewed from the outside (of legal theory) looking in, only highlights the very disunity of legal theory Schlag augers. Perhaps there really is a "big tent."

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75. POSNER, OVERCOMING, *supra* note 55, at 395.

76. POSNER, JURISPRUDENCE, *supra* note 52, at 384.

77. SCHLAG, *supra* note 1, at 81.

Hacking's model of disunity may be the most apt for postmodern legal theory. The point was made earlier that leading American law schools now find it a necessity to have scholars on the faculty who specialize in law and economics. Similarly, there does seem to be a tendency to at least pay lip service to representation from other fields of legal theory. Nevertheless, while I have not done an empirical survey of the topic, I do not suspect that there is the same level of representation in other areas of legal theory—critical legal studies, law and religion, or critical race theory, for example. The representation model certainly may not be fully manifest in praxis. In this regard, Schlag's claim of ideological unity within the legal academy rings true: "The elite American law schools are composed almost entirely (90 percent?) of center-left democrats . . . almost all of whom are committed to a brand of scholarship that involves issuing normative prescriptions to courts, legislatures, each other or some unknown addressee."[78]

The annual meeting of the American Association of Law Schools (AALS) provides an interesting peek at what can be referred to as "representational disunity." Each year the officers of AALS come up with a theme for the conference. For example, the theme this year was "Legal Education Engages the World." The theme serves as a provisional unifier for the conference. Yet, if you asked most of the participants about the theme, they would look at you with puzzlement. The real energy of the meeting is in the sections. Group members and professors who have some shared interest constitute the sections. Frequently the interest is substantive. For example, there are sections on law and religion, maritime law, indigenous nations and peoples, and legal history. There are also sections centered on theoretical interests such as socio-economics, social science, law and economics, and jurisprudence.

As the meetings of the various sections convene during overlapping time periods, the exception being for the one plenary session, there is a feeling of everyone scurrying to their corners to caucus about their own little slice of the law or legal theory. While the sections centered on theory may not be particularly malleable with regard to varying perspectives, one does notice various theoretical perspectives being showcased from year to year in the substantive sections. Perhaps the shared interest in a substantive topic, tax law for example, works as a unifier. Therefore, one year the tax section may take a critical race theory perspective on tax policy, and another an empirical analysis. It is also frequently the case that panelists in any given session approach a topic from divergent perspectives. Indeed, it seems to be an unwritten rule that there be a mixed representation of the field. It makes the panel more interesting.

78. *Id.* at 36.

Does it reflect the type of diversity ("leftists, rightists, skeptics, unbelievers, legal nihilists, and so on"[79]) that Schlag envisions? Not yet. But it could be reflective of what the praxis of legal theory may look like once we get over our enchantment of reason—no overarching theory dominating discourse or laying claim to Truth by dent of superior reason. This will only come to pass if we heed Rorty's admonition to maintain a sense of openness and willingness to keep the conversation going.

V. CONCLUSION

Bush v. Gore exposed the law, even for the uninitiated, as being highly charged politically—an endeavor whose undertaking, while cloaked in the garb of reason, had the makings of anything but objective discourse. On the other hand, the events of September 11, 2001, and the brand of religious fundamentalism they reflect highlight the risks we run if we take relativist claims too seriously. This is a danger that even Richard Rorty would recognize: "[T]he ideals of the Enlightenment not only are our most precious cultural heritage, but are in danger of disappearance as totalitarian states swallow up more and more of humanity."[80]

The point of this historiography has been to illustrate the problematic nature of privileging any form of knowledge, let alone legal theory, as holding out anything akin to absolute "T"ruth. This is not to say that we can no longer reach justified beliefs regarding what form the social practice of law should take. I would not even object to descriptions of such belief as objective. Given our historical moment, however, the implications of what it means to satisfy the criteria of objectivity or reason are radically altered. It merely marks a point at which we are justified in taking action based on our belief. Even in the course of taking action, we must still remain open to further dialogue regarding the course of our future direction—reason, as "central command," must be defrocked. This openness is not a form of *noblesse oblige*, but a realization that objectivity is measured by our existing system of norms. Of course, these norms will continue to include the traditional notions of reason (we will remain "enchanted"), but will also be open to forms of expression (and "reason") not previously allowed. Disunity (a "big tent") should be the rule, not the exception. The idea is not to paralyze us or have us fall into the quicksand of relativism, but to perhaps make us *all* (including Schlag) a bit less sure of ourselves. Perhaps such insecurity would be our most effective unifier.

79. *Id.*

80. RORTY, *supra* note 33, at 333.