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Law's Misguided Love Affair with Science

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Abstract

The allure of science has always captivated members of the legal profession. Its siren’s song has followed us throughout much of American legal history. We look to science to rescue us from the experience of uncertainty and the discomfort of difficult legal decisions, and we are constantly disappointed.

The notion of what constitutes science and what it would take to make law more scientific varies across time. What does not vary is our constant return to the well. We are constantly seduced into believing that some new science will provide answers to law’s dilemmas, and we are constantly disappointed.

This essay describes episodes in law’s misguided love affair with science across the last two hundred years. Illuminating the tantalizing traps that we fall into repeatedly may help us avoid these paths in the future.
Law’s Misguided Love Affair with Science
Robin Feldman

“[Our aim] is to encourage the application of scientific methods to the study of the legal system. As biology is to living organisms, astronomy to the stars, or economics to the price system, so should legal studies be to the legal system”

The allure of science has always captivated members of the legal profession. Its siren’s song has followed us throughout much of American legal history. Science offers a tune of perfection, of elegance, of solid dependability and the promise of endowing law and legal actors with the respect and deference from society that we crave. Most importantly, we look to science to rescue us from the experience of uncertainty and the discomfort of difficult legal decisions.

The notion of what constitutes science and what it would take to make law more scientific varies across time. What does not vary is our constant return to the well. We are constantly seduced into believing that some new science will provide answers to law’s dilemmas, and we are constantly disappointed.

1 Professor of Law, Director, Law & Bioscience Project, U.C. Hastings College of the Law. I am grateful to Vik Amar, Margreth Barrett, Richard Epstein, David Faigman, Robert Gordon, David Jung, Sonia Katyal, Donald Kennedy, Greg Kline, Evan Lee, Mark Lemley, David Levine, Roger Park, Reuel Schiller, Bill Simon, Chris Slobogin and Lois Weithorn. I also wish to thank participants in the Annual Intellectual Property Scholars’ Conference, the Chicago Intellectual Property Colloquium, and the Stanford Program in Law, Science, and Technology for their comments.

In modern law, one can see many examples in which courts and scholars reach for science when faced with uncomfortable legal dilemmas.3 We internalize science by

borrowing science rules for legal rules or we externalize our problems by giving scientists and other experts the power to make legal decisions. Our deference to these pillars of neutral rationality is supposed to bring clarity, certainty, and a resolution that all can respect. The strategy continually fails, however, leaving as much chaos, confusion, and disagreement as before.

Although the strategy fails, it is exquisitely revealing. It reflects a persistent image that law is weak and ineffective, a pale shadow in its own domain of what the sciences can project in theirs.

What is most striking about this process is that we rediscover it, generation after generation, in field after field of law. Law’s fascination with science reaches back hundreds of years into American legal history. At times it takes the form of trying to make law into a science or to make lawyers into scientists. At times it takes the form of simply deferring to scientific fields. Throughout this history, however, the pattern of behavior reflects our doubts about whether law is capable of resolving difficult issues and our eternal hope that science can do it better.

The notion of what constitutes science and what it would mean to make law more scientific varies across time and among scholars. What does not vary is our constant return to the well. We continually expect science to rescue us from the discomfort and uncertainties of law, and we are constantly disappointed.

This essay describes episodes in law’s misguided love affair with science across the last two hundred years. Illuminating the tantalizing traps that we fall into repeatedly may help us avoid these paths in the future.

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Looking back at the first half of the nineteenth century, many American legal scholars advocated approaching law as a science.\(^5\) To some, the notion meant conceptualizing law as an organized system, rather than a loose collection of precedents. To others, it meant approaching law as an outgrowth of moral science. To still others, it meant law as analogous to natural science. The latter group, in particular, argued that the study of law should follow the methods and reasoning of scientific investigation applied in the natural sciences at the time. Observations of law, like the observations of nature, should trace the origins and developmental paths of legal doctrine to identify the enduring and stable principles.

As Bishop explained, laws that govern men in society, “operate steadily, constantly, and uniformly; as does the law which draws the rivulet steadily and constantly down-stream . . . [a]nd as a particular motion of the stream is not the law of the stream, but only evidence of the law.”\(^6\) In other words, like the natural science taxonomists of the time, legal scholars should engage in an exhaustive and exact study of laws and cases to discover the universal and natural governing principles of human affairs.\(^7\) These natural governing principles were supposed to be universally acceptable and

\(^{5}\) See id. at 422 (explaining the differing views described below.). Yearnings to make law into a science did not originate in American legal history. Other traces can be found in early Roman law and in later European Law. See Peter Stein, Roman Law in European History 79, 99 (1999). The focus of this piece, however, is on the repeated appearance of this theme in American legal history.

\(^{6}\) Joel P. Bishop, The First Book of the Law 47 (1868); see also David Dudley Field, Speeches, Arguments, and Miscellaneous Papers of David Dudley Field 526-27 Magnitude and Importance of Legal Science (A.P. Sprague, ed.) (1884) (analogizing the proper study of law to descending from a mountaintop in order to understand the landscape in its vast, varied, and finite details) [available at www.heinonline.org].

\(^{7}\) See Schweber, supra note x, at 450-51; see also Daniel Mays, Whether Law is a Science: An Introductory Lecture Delivered to the Law Class of Transylvania University, on the 8th of November, 1832, 369 (1832) (arguing that “[C]ases are useful; but their greatest use is, that they serve to illustrate principles. If they are read and not resolved into elementary principles, the profit of the reading is not worth the time it occupies”) [available at www.heinonline.org].
understandable to all through “common sense,” given that everyone was presumed to share the experience of perception and that everyone’s perceptions were presumed to be consistent. This movement represented reconceptualizing law as analogous to the natural science movement of the time.

This approach, however, failed to bring clarity or universal agreement concerning legal principles. Among its many problems, scholars following the natural science approach argued strongly in favor of slavery during the Civil War. When those views were discredited in the post Civil War era, the theoretical approaches were discredited as well.

Law’s love affair with the natural sciences flourished again in the 1870s and found an institutional home with the arrival of Christopher Columbus Langdell as the dean of Harvard Law School. Langdell wanted to transform legal education from the teaching of a craft into a scholarly endeavor worthy of a place of honor among the great universities of the nation. To bring legal education into this fold, Langdell suggested that using scientific methods, scholars could identify fundamental principles and axioms which lawyers could apply to reach the proper solution to any legal problem. Cases

8 See Schweber, supra note x, at 442-45 (describing the influence of Scottish Common Sense theory on Baconism and the influence of Baconism on nineteenth century American legal thought).
9 See id., at 455-56.
10 See Grey, Langdell's Orthodoxy, supra note x at 1.
12 See Bix, Positively Positivism, supra note x, at 892; Grey, Langdell's Orthodoxy, supra note x at 5. Publications at the time included THE SCIENCE OF LAW (1874) (containing a foldout chart of The Scheme of a Body of Laws for the Modern State); S AMOS, THE SCIENCE OF LAW 119 (1874) (noting that law is composed of elements as permanent add universal as the elements of human nature itself); and E. CAMPELL, THE SCIENCE OF LAW, ACCORDING TO THE AMERICAN THEORY OF GOVERNMENT 6 (arguing that “the principles of justice are a definite body of immutable principles, and hence constitute a true science”). See Veilleux, supra note x, at nn 44-48 and accompanying text (describing these and other scholarly publications of the late 1800s).
would be the data set for the scientific inquiry, and from this data set, one could derive the fundamental principles of private law.\(^\text{13}\)

This legal science was not a deductive science, like mathematics, in which a series of true statements can be used to derive another statement that is necessarily true.\(^\text{14}\) Rather, it was more an inductive field science, like botany, in which one uses a series of examples from the available specimens to derive general principles.\(^\text{15}\)

The notion of law as a clear and structured science also offered relief from the bewildering array of issues emerging in the late 1800s. With industrialization, the range and complexity of the economic transactions regulated by case law expanded dramatically.\(^\text{16}\) This change put tremendous pressure on a legal system that frequently relied on a judge’s understanding of long-standing customs.\(^\text{17}\) One could not rely on custom in the face of rapid changes in the nature and complexity of societal interactions. Law, conceptualized as a structured science, offered great appeal in times of turmoil and increasing complexity.\(^\text{18}\)

The legal system, however, stubbornly refused to conform to any notion of a rational science. Its treasured data bank of cases failed to reveal a clear structure of higher order principles branching into ancillary rules, despite valiant efforts at analysis.\(^\text{19}\)

\(^{13}\) See Veilleux, supra note x, at 1975.

\(^{14}\) See, Bix, supra note x, at 892 (noting that Langdell’s analyses were not deductive).


\(^{16}\) See Lessig, supra note x, at 1403.

\(^{17}\) See id.

\(^{18}\) See Christopher C. Langdell, A Selection of Cases on the Law of Contracts viii-ix (1871) quoted in Stephen M. Feldman, The New Metaphysics: The Interpretive Turn in Jurisprudence, 76 Iowa L. Rev. 661, 661 n.5 (1991) (arguing that “[l]aw, considered as a science, consists of certain principles or doctrines. . . . If these doctrines could be so classified and arranged that each should be found in its proper place, and nowhere else, they would cease to be formidable from their number.”).

\(^{19}\) As Austin noted in his lectures on jurisprudence, “ideal completeness and correctness . . . is not attainable . . . though the system had been built and ordered with matchless solicitude and skill.” See 2 Austin, Lectures on Jurisprudence 997-98 (5th ed. 1885).
In particular, critics pointed out that cases frequently contradicted each other and any apparent guiding principles.\textsuperscript{20} Later attempts to organize the law into restatements and treatises produced great and complex compendiums lacking the simple clarity suggested in the notion of law as a science.\textsuperscript{21}

As law failed to live up to the notion of an inductive natural science, other schools of thought emerged in opposition. For example, the Progressives, including scholars like Holmes, Pound and Cardozo, suggested that legislators were the main instruments of law rather than judges and argued that law could be understood as policies rather than rules. Many Progressives felt that although an exact, internal legal science was a chimera, law could be reconstructed as a policy science around social science. Law would not be a deductive science but a science of informed experiment in which appropriate legal actors could use social science to guide them to various policies that could be tested and refined across time.

In this context, Progressives urged that legislators and experts at administrative agencies should apply social science as a guide to the proper policies. Judges, too, could apply social science to fill in the gaps left by legislators in their quest for the right policies, although their role should be limited. Thus, law itself might not be a physical science, but legal actors could operate like social scientists, engaging in a type of informed experiment to find their way to an enlightened path for society.

\textsuperscript{20} See Felix S. Cohen, \textit{Transcendental Nonsense and the Functional Approach}, 35 COLUM. LAW. REV. 809 (1935) (noting that the practice of legal reasoning often ignores facts and practical consequences and rather is based on the manipulation of legal concepts in certain approved ways); \textit{see also} KELMAN, supra note x, at 46 (noting that one of the most entertaining sports that critics of Langdellian legal science engaged in was to tweak their treatise-writing, rule-collecting Formalist forbearers for announcing that they had discovered legal rules that were, on inspection, utterly vacuous and question begging).

\textsuperscript{21} See Grey, \textit{American Legal Thought}, supra note x, at 500 (describing the collaboration between Langdellians in writing the first Restatements, and noting the Legal Realist critiques of these Restatements as well as the treatises of the era); Arnold, Institute Priests and Yale Observers--A Reply to Dean Goodrich, 84 U. PA. L. REV.. 811, 820 (1936) (criticizing restatements).
The Legal Realists followed quickly on the heels of the Progressives. They argued that The Progressives’ cherished policy science was no more clear or predictable than the rules and axioms of a natural science approach. Legal Realists believed that laws and precedents were indeterminate, capable of a myriad of interpretations. Words, according to the Legal Realists, are inherently open-ended. Moreover, conflicting rules frequently cover the factual circumstance, and no autonomous mechanical rules can clearly govern the conflict.

Legal Realists thought that judges inevitably responded to their own perspectives and prejudices. The process of law, according to the Legal Realists, involved intuitive dispute resolution in light of unconsciously absorbed custom.

Law’s interrelation with science endured for the Realists, however, but in a slightly different form. For the Realists, judges and legal scholars could use social

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22 See Stephen M. Feldman, The Transformation of an Academic Discipline: Law Professors in the Past and Future (or Toy Story Too), 54 J. LEGAL EDUC. 471, 482-83 (2004) (noting the development of Progressive legal theories such as those of Roscoe Pound around the turn of the twentieth century, and the emergence of Legal Realism in the 1920s and 1930s).
23 See Jerome Frank, Words and Music: Some Remarks on Statutory Interpretation, 47 COLUM. L. REV. 1259, 1263 (1947) (noting that people's annoyance with the way judges sometimes interpret apparently simple statutory language is based on the false assumption that each verbal symbol refers to one and only one specific subject, and a denial of the wide range of ambiguities a word may have that can only be resolved through consideration of context and background); Felix Frankfurter, Some Reflections on the Reading of Statutes, 47 COLUM. L. REV. 527, 528 (1947) (noting that words are symbols of meaning, but unlike mathematical symbols, the phrasing of a document, especially a complicated enactment, seldom attains more than approximate precision); see also KELMAN, supra note x, at 12-13(describing the Realists).
24 See KELMAN, supra note x, at 45; Roscoe Pound, Mechanical Jurisprudence, 8 Colum. L. Rev. 605, 606-614 (1908) (warning against the cyclical petrifaction of the common law where longstanding legal doctrines are unexamined and mechanically applied, and ultimately fail to respond to the human conditions and complexities of present day life).
25 See, e.g., Karl N. Llewellyn, "Law and the Modern Mind": A Symposium, 31 COLUM. L. REV 82, 83 (1931) (reviewing JEROME FRANK, LAW AND THE MODERN MIND (1930)) (contrasting the myth that the great bulk of a judge's work is "mere routine application of accepted rules" with the reality that no different from witnesses, a judge's perception of "the facts" varies according to temperament and circumstance, and a judge's selection, stress, and arrangement of "the facts" can make the most peculiar case look routine).
26 See Grey, Langdell's Orthodoxy, supra note x, at 503.
science to better understand themselves. Studying themselves would help scholars reveal the indeterminate and individualized nature of judging and would help judges better understand and follow their unconscious instincts. Legal actors were still analogous to social scientists but the subject of study was themselves.

The Legal Realists’ faith in social science was also reflected in their devotion to the continued rise of the regulatory state. Both Realists and Progressives viewed administrative government as the scientific solution to the economic and social crises of the 1920s and 30s. Judges were viewed as lacking the means, the expertise, and perhaps the will to bring about the changes necessary to keep pace with the tremendous upheavals of the time.

Administrative agencies during this period were given extraordinary discretion, in deference to their expertise. This deference was justified on grounds both that agency experts were superior in capacity and that their expertise made them more trustworthy. For example, in describing the need for limited judicial oversight, the Supreme Court commented that an agency “deals with a subject that is highly specialized and so complex

27 See Karl N. Llewellyn, Some Realism about Realism: Responding to Dean Pound, 44 HARVARD LAW REVIEW 1222 (1931) (serving as a classic example of social scientific self-examination through the employment of statistical, textual analysis upon the then-emerging writings of perceived new legal realists in order to discover if indeed a common school of legal realists exists); JEROME FRANK, LAW & THE MODERN MIND, 172 (1963) 178-80 (using psychology to explain that the wish for things certain and secure is an infantile, regressive tendency and to advocate that judges recognize that all rules and standards are fictions, to appreciate law’s dynamic qualities, and to struggle against the drag of childish nostalgia for the over-secure and serene); see also Grey, Modern American Legal Thought, supra note x, at 510 (describing the Legal Realists).

28 See Grey, Modern American Legal Thought, supra note x, at 501; see also LAURA KALMAN, THE STRANGE CAREER OF LEGAL LIBERALISM, 16 (1996) (noting that legal realists debunked the law as an effort to improve it by treating it as a tool of social policy).


30 See KALMAN, supra note x, at 18.

as to be the despair of judges” and is “better staffed for its task than is the judiciary”. In another case, the Court expressed its faith in agency experts by noting that “the training that is required, the comprehensive knowledge which is possessed, guards against accidental abuse of its powers or, if the abuse occurs, to correct it.” Thus, expertise would make those at agencies the neutral and dependable arbiters of difficult legal dilemmas.

Faith in the administrative state was reinforced by the Legal Process School that began to emerge in the late 1930s in response to Legal Realism. If our perspectives are hopelessly clouded and words are inherently open-ended, how are we to function as a legal system? Most importantly, if the Legal Realists were right that rules are subject to infinite interpretations and that perspectives can never be objective, how can law hope to be anything more than the subjective whims of individual judges? What rational domain is left for law?

The Legal Process School offered one response to such unsettling visions of indeterminacy and unconstrained discretion. Legal Process argued that law could function best in the realm of choosing the institution or procedure appropriate for resolving a particular question. Law might not have a monopoly on finding principles that would yield the right answer, or on the wise and selfless neutrality that would lead to a universally acceptable result. Nevertheless, legal actors might be particularly skilled at

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32 See Dobson v. Commissioner, 320 U.S. at 245.
34 See, Bix, supra note x, at 896 (describing the Legal Process school as a response to Legal Realism); KALMAN, supra note x, at 19 (discussing the timing of the emergence of the Legal Process School).
35 See, id. at 896 (describing discomfort in the wake of the Legal Realist critique).
36 See KELMAN, supra note x, at 6.
identifying which institutions and processes could function most appropriately for addressing the question at hand.\textsuperscript{37}

Tucked into the Legal Process perspective was the notion that the legal system has limited competence for addressing some of the issues that come before it. In that terrain, legal actors should simply defer to the experts. This instinct to circumscribe the domain of law by deferring to experts is a theme that echoes in modern manifestations of law and science.

Critics of the Legal Process School would later suggest that arguments made about one institution can be made for any other institution.\textsuperscript{38} From this perspective, similar arguments of bias and lack of access can be leveled at any institution in relation to any particular legal question. Thus, the promise of improving law by evaluating and comparing institutions remained unfulfilled.

In general, Law’s euphoria over agency expertise, so strong in the 1920s and 30s, soured within a couple of decades. By the 1950s and 60s, Americans had gained experience abroad with the monstrous expressions of administrative power in fascist states as well as experience at home with wartime agencies that more often appeared to be “incompetent bullies” rather than rational, neutral arbiters.\textsuperscript{39} Agencies would remain, along with their powerful impact on the American landscape. Once admitted, the administrative expertise would not be expelled. Nevertheless, the image of an

\textsuperscript{37} See, Bix, \textit{supra} note x, at 897; Calabresi, \textit{supra} note x, at 2143-2144 (describing the Legal Process school using the issue of ownership of body parts); see also Schiller, \textit{Changing Definitions}, \textit{supra} note x, at 1402 (noting that process theorists such as Bickel, Wechsler, Wellington, Sachs and Hart, suggested each branch of government undertake tasks for which it is best suited).

\textsuperscript{38} See KELMAN, \textit{supra} note x, at 190-91 (describing Critical Legal Studies critiques of the Legal Process school and what he calls the deification of process).

\textsuperscript{39} See Schiller, \textit{Decline of the Expert Administration}, \textit{supra} note x, at 201.
administrative state in which experts would solve the legal system’s intractable problems faded. ⁴⁰

One cannot examine the interrelation of law and social science without paying homage to the Law and Economics movement. Law and Economics is perhaps the most influential school of thought that has specifically tried to merge law with a particular social science, in this case economics.

Law and Economics gained prominence in the 1970s. ⁴¹ The elegance and simplicity of Law and Economics offered great appeal to a legal academic community still reeling from the devastating critiques of the Legal Realists and the indeterminacy of Legal Realism. ⁴² Law and Economics can be seen as suggesting a solution to the turmoil that had plagued post-Realist legal academics, who had been taught that legal rules were essentially no more than policy decisions. ⁴³

According to Law and Economics, the proper role of legal actors is to apply the insights of economics, particularly neo-classical price theory, to legal questions in an effort to craft efficient legal rules that create the proper incentives for optimal behavior. ⁴⁴ This will promote satisfaction of the greatest possible level of overall societal wants. ⁴⁵

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⁴⁰ See generally, Decline of the Expert Administration, supra note x (describing the disenchantment with the administrative state and the imposition of due process requirements and court supervision).
⁴¹ See KELMAN, supra note x, at 114.
⁴² See KELMAN, supra note x, at 118 (noting that the so-called Chicago school of Law and Economics brought a message of simplicity to an academic and social world in search of simplicity); see also Mattei, supra note x, at 234-35 (noting that characteristics such as relative simplicity, political ambiguity, and universality helped fuel the spread of Law and Economics).
⁴³ See KELMAN, supra note x, at 125.
⁴⁴ See Hovenkamp, Antitrust Policy after Chicago, 84 Mich. L. Rev. 213, 224 (noting that an important difference between the neoclassical market efficiency model, used by Law and Economics scholars, and earlier economic models is that the neoclassical model claims a much greater ability to distinguish between efficient and inefficient policies); See Hovenkamp, Positivism, supra note x, at 822, Epstein, supra note x, at 1170; see also Katz, supra note x, at 2238 (noting that positive law and economics sees law merely as a set of constraints within which individual citizens maximize).
For example, Law and Economics scholarship in tort law has suggested that the goal of tort law and regulation should be to create the proper incentives that will force individuals to internalize the consequences that their decisions inflicted on others, thereby minimizing the divergence between private and social costs.46

In one respect, one can think of Law and Economics as a particular variant of the Legal Process School. Law and Economics scholars treat “the market” as analogous to a separate institution in itself. Legal actors must consider whether the institution of the market is more capable of resolving the problem at hand than courts or administrative agencies.

Application of Law and Economics concepts requires acceptance of certain assumptions.47 Such assumptions include that human wants can be reduced to and accurately measured in economic terms, that human beings are rational actors, and that price theory is accurate and can be applied with specificity to an individual occurrence of human or institutional behavior.48 Most controversial has been the descriptive claim by some Law and Economics scholars that the legal system inevitably moves towards an efficient result.49 Even some prominent Law and Economics scholars have questioned the validity of that description.50

Bentham's nineteenth-century utilitarian that a reasonable comparison of utility across society was possible and would achieve the greatest good for the greatest number of people).  
46 See Epstein, supra note x, at 1172.  
48 But see, Hovenkamp, supra note x, at 827 (suggesting that the profit-maximization hypothesis is probably not verifiable in any universal sense).  
49 See Epstein, supra note x, at 1169-70(describing Posner); Grey, Langdell's Orthodoxy, supra note x, at 51 (noting that Posner finds 'efficiency,' with all the connotation of approval that term carries in his theory, in the content as well as the methods of Langdellian private law).  
50 See Epstein, supra note x, at 1170 (arguing that the positive theory of an efficient common law utterly fails to explain why, with transaction costs in decline and information more readily available, judicial regulation should be expected to increase); see also see also John J. Donohue III, The Law and Economics
Over time, many of the assumptions of Law and Economics have come under attack. Some critics have argued that human beings are not rational actors possessing full and complete information. Others have argued that human wants cannot be accurately expressed in economic terms. Still others have expressed concern that those who engage in Law and Economics fail to test their hypotheses and conclusions with the degree of rigor that economists would demand. Finally, an increasing body of literature has argued that institutional interactions are far more complex than originally suggested by the founders of Law and Economics.


51 See Katz, supra note x, at 2241 (arguing that methodological reductionism is a model, not a metaphysical truth, and, like all models, aesthetic and pragmatic considerations influence the decision to use it).


53 See Hovenkamp, supra note x, at 836 (arguing that Limiting welfare to wealth maximization amounts to a hopelessly impoverished view of well-being.); Nussbaum, supra note x, at 1636 (citing Amartya Sen and describing the difficulty of measuring human welfare).

54 See Hovenkamp, supra note x, at 822-23 (criticizing inadequate hypothesis testing and noting that the danger of dissolving into a kind of “mathematically supported storytelling” is of particular concern in law & economics).

55 Ian Ayres, Playing Games with the Law, 42 STAN. L. REV. 1291 (1990) (explaining that game theory challenges Law and Economics' presumption that market competition is efficient because under certain assumptions markets can fail to promote social welfare); Michael S. Jacobs, The New Sophistication in Antitrust, 79 MINN. L. REV. 1 (1994) (noting that the post-Chicago school builds on the industrial organization approach by challenging that broad generalizations of price theory are inappropriate when small numbers of firms act strategically to exploit market imperfections to the disadvantage of their competitors; Steven C. Salop, Anticompetitive Overbuying by Power Buyers, 72 ANTITRUST L.J. 669 (2005) (noting that companies have been known to engage in predatory "overbuying" whereby inputs are purchased solely to deny it to rivals and then discarded); see also Epstein, supra note x, at 1174 (a prominent Law and Economics scholar concluding that the study of legal doctrine and theory has to be enriched with a greater appreciation of institutional arrangements).
Despite these criticisms, Law and Economics has had a profound impact on modern legal thought. As described above, modern courts and scholars must now try to manage that economic influence and to make economic insights useful within a judicial setting.\textsuperscript{56}

Finally, although less focused on science, one cannot understand Twentieth Century legal thought or the current state of legal thought without mention of the Critical Legal Studies (CLS) movement. Understanding the criticisms leveled by the CLS movement is important for understanding the dynamic of what drives us to look for answers in the form of science.

CLS emerged in the 1970s around the time as the emergence of Law and Economics. Unlike the Legal Realists, CLS scholars did not believe in the complete indeterminacy of language. Rather, CLS argued that even when language and legal rules are crystal clear, law is destined to be inherently contradictory. This contradiction occurs because society is not committed to either a strict rule or a flexible standards approach to the interpretation of law.\textsuperscript{57} Vacillation between the two inevitably produces instability on every significant issue, and no resolution is possible.\textsuperscript{58} Moreover, the inevitable conflicts cause law to privilege one strain over another for reasons other than objective analysis and logic.

CLS scholars rejected the notion that legal actors could ever objectively study the consequences of alternative legal rules without the distortive effects of the artificial

\textsuperscript{56} See text accompanying notes x-y, supra (offering perspectives on current debates in antitrust law).
\textsuperscript{57} See KELMAN, supra note x, at 45.
\textsuperscript{58} See id. at 15 (describing the clash between law’s affinity for rules and its attraction to legal standards).
categories that we create and impose on legal questions. Nevertheless, some CLS scholarship reads much like a psychological analysis of human beings, following the social science of the time. Unger, for example, waxes poetic on the notion that the self must seek recognition from others in order to acquire coherence. Moreover, many CLS scholars advocated exposure and awareness of the bias of legal actors, wherever possible. Thus, CLS encouraged legal actors to critically examine themselves as a focus of study, despite the inevitable imperfection of the enterprise.

In addition to the more formal movements, our history abounds with individual moments in which we turn to science to solve law’s intractable problems. We are constantly seduced into believing that some new science will provide answers to vexing legal questions, and we are constantly disappointed.

Consider the criminal law question of when a defendant should be found not guilty by reason of insanity. For over a century, the American test for criminal insanity

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59 See Kelman, supra note x, at 275; see also David M. Trubek, Where the Action is: Critical Legal Studies and Empiricism, 36 Stan. L. Rev. 575, 617-18 (1984) (describing the CLS view that empirical researchers who spend years analyzing the answers to complicated surveys about disputes are like madmen wandering in an asylum that they themselves have constructed).


61 See Kelman, supra note x, at 275 (noting that abandoning those distortions that we can identify a surely a move towards transformation); David M. Trubek, Where the Action is: Critical Legal Studies and Empiricism, 36 Stan. L. Rev. 575, 591 (1984) (observing that while Critical Legal Studies scholars seek to show relationships between the world views embedded in modern legal consciousness and domination in capitalist society, they also want to change that consciousness and those relationships. Thus, the analysis of legal consciousness is part of a transformative politics); David S. Caudill, Disclosing Tilt: A Partial Defense of Critical Legal Studies and a Comparative Introduction to the Philosophy of the Law-Idea, 72 Iowa L. Rev. 287 (1987) (noting that a significant CLS goal is to raise awareness of unexamined, assailable preferences); see also G. Edward White, The Inevitability of Critical Legal Studies, 36 Stan. L. Rev. 649 (1984) (Noting that CLS’ examination of values extends beyond the individual preferences of legal actors, but also attacks the collective value system of legal culture as a whole); Kelman, supra note x, at 275 (noting that abandoning those distortions that we can identify a surely a move towards transformation).
flowed from an 1843 British case focused on the question of whether the defendant showed a complete lack of cognitive ability at the time of the crime.62

Dissatisfaction with the test swelled in the late 1950s and early 60s, culminating in passage of Section 4.01 of the Model Penal Code.63 The new test was widely accepted, becoming adopted in almost every federal circuit and in many states as well.64 It was hailed as a triumph of science. The new test was perceived as embodying the latest advances in psychological knowledge and medical thought, ones that would provide authoritative, neutral grounds upon which we could all agree.65 Science would show us the way through the difficult question of whether one should be held criminally accountable for one’s actions.

The honeymoon was remarkably short-lived. By the early 1980s, courts and legislatures, reacting to highly publicized cases in which defendants were found not guilty under the new standard, retreated from the Model Penal Code rule with remarkable speed.66 California, for example, which had adopted the Model Penal Code test in a case in 1978, returned to the prior test with a ballot initiative 4 years later.67

Our embrace of science and our intense disappointment with the Model Penal Code insanity test reflect the problems of trying to import science for the drafting of legal rules. The question of whom we should hold criminally responsible for their actions is a

63 Model Penal Code § 4.01(1) (1962) (imposing the standard that the defendant was not responsible if, as a result of mental defect or disease, the defendant lacked substantial capacity to appreciate the criminality of the act or to conform conduct to the requirements of the law).
64 See People v. Drew, 22 Cal. 3d 333, 345 (1978)
66 See PAUL APPELBAUM, ALMOST A REVOLUTION: MENTAL HEALTH LAW AND THE LIMITS OF CHANGE.
question of morality and societal values.\textsuperscript{68} Morality is not easy, and no science can take that burden off the shoulders of the law.

One could argue that the abandonment of the Model Penal Code standard reflected popular over-reaction to highly publicized cases, rather than a carefully considered rejection of the doctrine based on its inadequacies. Even from this perspective, however, to the extent that science was expected to provide an authoritative and neutral resolution behind which society could rally, it was a dismal failure.

The insanity defense is a particularly good example of law’s love affair with science. When struggling to reform the old Nineteenth Century test for insanity, courts and scholars not only tried importing science rules to create a test but also tried exporting the problem to scientific experts. For example, two other standards developed in the 1950s and 1960s would have essentially shifted the decision to expert psychiatrists to opine on whether the defendant’s behavior fit particular psychiatric diagnoses. These were the Durham rule, adopted in a D.C. Circuit case, and the Bonnie Rule, proposed by law professor Richard Bonnie.\textsuperscript{69}

Attempts to export the insanity defense problem failed as well, burdened by criticism that these approaches would fail to properly identify those that society wished to hold morally accountable but rather would open the door to excessive acquittals. The Durham rule was reversed by statute and the Bonnie standard was never adopted.\textsuperscript{70}


\textsuperscript{70} See Gundlack-Evans, \textit{supra} note x, at 137.
lamenting the failed Durham test, Judge Bazelon, who wrote the Durham opinion, described himself as “a disappointed lover” after his efforts failed so miserably.\(^{71}\)

Our experience with the insanity defense is particularly important to keep in mind today as we head merrily off into the arms of yet another new science that promises to give us a window into the human mind. Researchers can now use brain scans to see what portions of the brain are activated by a particular person during a given activity. Proponents of using such neuroscience in law suggest enthusiastically that the research will eventually allow the legal system to scientifically answer questions such as whether certain individuals should be held accountable for their actions, whether an individual will engage in future criminal activity, and even the elusive question of just what are our deeply shared beliefs upon which the legal system should be based. Before we are swept away by the latest vision of science in law, perhaps we should take a moment to reflect on our past experiences.

Our legal history is full of such examples in which law, when faced with difficult and unsettling problems, turns to science in hopes of a solution and is subsequently disappointed. Similar stories can be told for attempts to let science answer whether an individual is imminently dangerous to the community in a civil commitment proceeding or whether a defendant can be rehabilitated or will only incarceration work in sexual or other crimes.

The issue has arisen with the question of what is in the best interests of the child in custody cases. In that arena, courts increasingly lean on experts to decide the underlying issue, an inclination that has proven unsatisfying. As one scholar has noted, “[c]ourts may be only too willing to be relieved of the responsibility of playing guessing

games about a child’s future if they are persuaded that experts’ crystal balls hold the answer”. The problem is not just that we are asking scientists to answer legal questions. The problem is also that we are asking scientists to solve our legal quandaries with predictions about human development that they are unable to provide. Outside of extreme circumstances such as abuse or neglect, psychology lacks any methodologically sound empirical evidence allowing predictions concerning various custody arrangements.

Other examples include legal tests imported into law from economic or social science research which are then far too complex to operate in a legal setting. The rules remain, but are honored mostly in the legal system’s inability to apply them with any significant degree of accuracy. Consider the updated version of the Learned Hand test for negligence liability in tort law. The rule asks that we set negligence at the point where, properly internalized, prevention costs don’t exceed accident costs. The ordinary machinery of the legal system has no way to measure that level

One can also look at rate setting in public utilities regulation. Consider Stephen Breyer’s scholarship on rate regulation prior to joining the bench:

The possibility of court review has led agencies to keep records demonstrating . . . that [the] decision was rational. . . Given the multifaceted nature of most problems, the uncertain quality of the information, and the need to consider a broad range of uncertain factors, many technical decisions … may reflect only an inspired engineering guess. The engineer may not know precisely where or how the decision emerged – even in his own mind – nor can he necessarily write down

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73 See id. at 161.
a justification for the decision at the time he made it. Thus, records for court review are often made ex post. The agency’s lawyers insert into a public record sufficient information to show rational support for each key decision. Cost/benefit analyses are often prepared to support decisions already reached rather than to help determine what future decisions ought to be made.74

Thus, in both formal movements and individual moments, law continually turns to science to solve its problems and is continually disappointed. What is important about this pattern is not just our disappointment, but our constant return to the well. The repeated behavior is revealing in that it reflects both our vision of law and our vision of science in relation to law. We constantly despair of law’s inability to resolve legal issues to our satisfaction and view science as a source of rescue from our discontent. It is this particular vision that continually leads us down the garden path.

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