


# JURIMETRICS
# THE NEXT STEP FORWARD*

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IT IS ONE of the greatest anomalies of modern times that the law, which exists as a public guide to conduct, has become such a recondite mystery that it is incomprehensible to the public and scarcely intelligible to its own votaries. The rules which are supposed to be the guides to action of men living in society have become the secret cult of a group of priestly professionals. The mystic ritual of this cult is announced to the public, if at all, only in a bewildering jargon. Daily the law becomes more complex, citizens become more confused, and society becomes less cohesive. Of course, people do not respect that which they can neither understand nor see in effective operation. So the lawmongers bemoan the lack of respect for law. Now the lawyers are even bewailing the lack of respect for lawyers.

Many remedies are proposed: We must have better law enforcement—that is, more policemen to make the people obey the laws they do not understand. We must have a great moral renascence—presumably some sort of mystical process which will enable people intuitively to apprehend the mysteries of law. We need better education—catch 'em young, and teach them to respect the law while they're still credulous and uncritical. We ought to pass a new law to make people respect the old laws—ignorance of the law is no excuse, even for lawyers. We need better "public relations" between the lawyers and the public—which simply means that the lawyers want to advertise like everybody else. There is a school of support for every proposal except the one that it is the law itself which needs to be changed.

Apparently it has never occurred to the professional disciples of the subject that the trouble with law is not the public but the lawyers, that what is needed is not publicity but progress.

More than one popular writer has suggested that our system of administering law is far from good.[1] This charge is usually answered by the bar either by impugning the critic's motives or his competence. Being a layman, the poor fellow obviously doesn't understand these things. However, I want to suggest, in all seriousness, that it is the bar itself which lacks understanding. The important matter for understanding is not the mechanics of the law, but the human problem which it is the business of the law to solve, and the actual results which are achieved. Failure in these matters can be observed even by the untrained eye. There is a growing conviction that the collective competence of the legal profession is inadequate to the tasks imposed upon it (or assumed by it) in contemporary society. It is no sufficient answer for the bar association to pass complacent resolutions that the lawyers are really fine fellows at heart, the difficulty being that the public doesn't understand them.

As a matter of fact this sensitiveness of the profession to criticism suggests an uneasy presentiment that perhaps there is something wrong. It has not been seriously suggested that the individual members of the legal profession, in general, lack either personal ability or integrity. Law usually attracts men of intelligence, and it takes a fair amount of ability to get admitted to the bar and to succeed in the practice. It is well known that the supervision of the courts, in most places, maintains a standard of conventional honesty considerably higher than prevails in business, and at least equal to that of any other profession. The criticism that is leveled at lawyers implies no personal fault beyond that of supporting, or accepting without protest, a system that is archaic and insufficient for modern needs.

Indeed, were the lawyers themselves but slightly more introspective they would be the first to see the appalling shortcomings of their own concepts and methods. The truth is that on most fundamental legal questions, including the relatively simple matter of defining law itself, the profession is in hopeless confusion and disagreement. Study of this basic problem of defining the field is,

1. *E.g.*, Robert Rurak, *Divorce Laws Are "Stupid,"* Minneapolis Tribune, Dec. 3, 1948, p. 6. Among Mr. Rurak's pungent comments are these: "Being a naive type, I thought everybody had recognized by now that the divorce machinery is man's finest monument to the pointless stupidity of man. And it is certainly a beautiful testimony to the cynicism of bench and bar."

in fact, most illuminating—not as to the definition of law, but as to the source of confusion.

The numberless authorities who have considered the subject have, at various times, written that law is the dictate of God, of Nature, of Reason; that it is Justice, Equality, Liberty, custom, command, rules, decisions; that it is found in the will of a personal sovereign, of the people, of the legislature, in the decisions of the courts, and in the words of the judges. Supreme Court Justices have disagreed from the bench as to what "law" is, and there are shelves of thick books in every law library, marked "Jurisprudence," devoted principally to the problem of defining the term.

So far as we can go back in history, the same arguments and ideas recur. In prehistoric times social restraint apparently rested on custom, and there was no conscious "law," at least in anything like the modern sense.[2] Our earliest glimpses of conscious law, which go back to the Code of Hammurabi, about 2000 B. C., indicate that it was probably thought of as representing the direct commands of the gods, received and transmitted through the reigning monarch.[3]

The first thoughtful consideration of legal and social problems of which we have any record comes from the days of the Greek philosophers. Plato, in the Republic, discusses at great length the conditions under which men might form an ideal government. He finally comes to the conclusion that until philosophers are kings, or kings have the wisdom of philosophers, the human race will have no rest from evils.[4] More simply stated, good men will give us good government.

Aristotle, on the other hand, emphasized the rule of law, rather than the wisdom of the ruler. The law, he said, is order and consists of the best rules possible. "Moreover," he adds, "he who would place the supreme power in mind, would place it in God and the laws; but he who entrusts man with it, gives it to a wild beast, for such his appetites sometimes make him; for passion influences those who are in power, even the very best of men; for which reason law is reason without desire."[5] Aristotle does also

2. For interesting accounts of prehistoric origins, see Gordon Childe, What Happened in History (1942, Penguin ed., 1946); George R. Stewart, Man (1946). On the specific origins of law, see William Seagle, The Quest for Law 27 *et seq.* (1941).

3. William Seagle, The Quest for Law 104, 108-112, 120 (1941); William Seagle, Men of Law 13 *et seq.* (1947).

4. The Dialogues of Plato, 1 The Republic, Book 5, p. 737 (Jowett translation, Random House ed., 1937).

5. A Treatise on Government, or, The Politics of Aristotle, Book 3, c. 16, p. 101 (Ellis translation, Everyman's Library ed., 1943).

say that the government which is administered by the best men is likely to be the best, but from this he concludes that the most desirable form of government is an aristocracy, rather than a democracy or an absolute monarchy. Running through his discussion is the notion of law as the exercise of human reason uninfluenced by emotion.

The history of man's thinking on this topic since the fourth century B. C. is largely a story of the struggle between the ideas of Plato and those of Aristotle. Generally the ideas of Aristotle have been dominant in the western world, that the law is something that is somehow above human control. However, the ambiguities inherent in the Aristotelian argument have left plenty of room for debate as to the finer points. For many centuries man debated whether the law was to be found immediately in the word of God, or whether it should be sought in an order inherent in "nature," as established by God.

These two ideas were combined by the scholastics of the seventh century,[6] and St. Thomas Aquinas, the greatest of the scholastics, wrote elaborate expositions of the law in the thirteenth century based upon these views.[7] The work of Aquinas was in the form of complicated deductions from assumed premises. The most important of these assumptions were that law is a standard for human action, and that its ultimate end is the common happiness. Derived from these was the definition that law is "An ordinance of reason for the common good, promulgated by him who has the care of the community."[8] Law was explained as derived by Reason from natural law, which is implanted in the minds of men by God. Thus the conflicting doctrines that law is based on Nature, on Reason, and on the will of God were reconciled.

Sanctioned by the great authority of Aquinas, these three ideas formed the foundation of the thinking of the next five centuries. God—Nature—Reason—were the sources of law. Some emphasized one element, some another; but none challenged the fundamental viewpoint, although the conclusions reached from these assumptions varied widely. The idea that God was the source of law was used to demonstrate conclusively that the king ruled by

6. Isidore of Seville seems to have been the first to identify the Law of Nature with the Law of God. William Seagle, The Quest for Law 201 (1941).

7. St. Thomas Aquinas, Summa Theologica, and De Regimine Principum.

8. 2 St. Thomas Aquinas, Summa Theologica, c. 1, question 90, art. 4, in F. W. Coker, Readings in Political Philosophy 128 (1914).

divine right. Obviously this right was in accord with the scheme of nature and the principles of reason. On the other hand, it was equally clear that man's first duty was to obey the word of God, so that if the Prince promulgated a law contrary to the word of God, a righteous man would be bound to disobey it. Besides, it was not intended by God that a ruler should oppress his people, so a limited, rather than an absolute, monarchy was inherent in the order of nature. It was apparent to still others that God had originally put man in a state of nature, in which man had avoided anarchy—an unreasonable and unnatural state—by forming a compact with all the other members of society. This social contract was thereafter the basis of government, so that law was based on the general will, which got its inspiration by Reason from God. Thus, according to this view, the rights of the people were demonstrated to be superior to those of any monarch, and the divine right of democracy was established.

The argument was given every variation that human ingenuity could devise. The philosophical writers—Grotius, Hobbes, Locke, Montesquie, Rosseau—all started with "natural law" and reached different conclusions as to what the law was and what it should be. The legal writers—Bracton, Littleton, Coke, Blackstone—defined their subject in terms of Natural Law and Reason, and then proceeded to state the rules as they found them in the opinions of the King's judges. Thomas Paine, the great Anglo-American spokesman for the common man of the eighteenth century, argued for the fundamental "Rights of Man" on the ground that each man had come from the hand of his Maker endowed with these natural rights. In the writings of Paine and his followers "natural law" became a revolutionary doctrine which inspired devotion to democratic government, as a few centuries earlier it had secured support for the divine right of kings.

The first effective challenge to this general viewpoint was made in England, about the time of the American Revolution, by Jeremy Bentham. Justice, Right, Reason, and the Law of Nature, he said, were "the commonplace retinue of phrases . . . which are but so many ways of intimating that a man is firmly convinced of the truth of this or that moral proposition, though he either thinks he needs not, or finds he can't, tell why."[9] The debates about law which had been going on, with each man claiming to know the word of God, to have a true vision of nature, or to possess the wisdom of Reason, were merely "womanish scolding and childish

9. Jeremy Bentham, A Fragment on Government c. 1, ¶ 38 (1776).

altercation, which is sure to irritate and which never can persuade."[10] The only reasonable basis on which such a discussion can be conducted is that of agreement on some standard which can be used to test or measure the results. Bentham found such a standard in the "principle of utility," which he defined as the now-familiar greatest happiness of the greatest number. If we agree on this principle, he argued, then we may disagree as to the wisdom of particular rules, but at least there is some basis for settling our disagreement. It becomes a question of fact as to which result will produce the greatest happiness for the greatest number; and the fact can be determined by observation of past experience combined with reasonable prediction of the future.[11]

New lines of thought began with this dissent, but the general development of the law was not immediately disturbed. Blackstone, a contemporary of Bentham's, had defined the law as: "A rule of civil conduct prescribed by the supreme power in a state, commanding what is right, and prohibiting what is wrong."[12] The last great expression of English law before the revolt of the colonies, this was taken as an authoritative text by all American lawyers for many years, and by many American lawyers for all time.

In the nineteenth century, lawyers referred less frequently to God as the source of law although they continued to assume that there was a "Law of Nature" which was discovered by the reason of man lying at the foundation of all the laws of government. But the ferment of Bentham's ideas was at work. In the last quarter of the century, two powerful voices began to be heard. Rudolph von Jhering, a German professor, began writing of law as an instrument of social control, rather than as an abstract problem in philosophy.[13] His great work, published in 1877, was translated into English under the expressive title, "Law as a Means to an End." Jhering also ridiculed the traditional approach to law in a delightful satire of "The Heaven of Juristic Concepts." In this fanciful realm, which was heaven to the theoretical jurists, there was neither sun nor air, for the concepts of jurisprudence would have been killed by contact with either. There Jhering found the perfect models of those machines (which so many laymen have

10. *Id.* c. 4, ¶ 40.
11. *Id.* c. 4, ¶ 39.
12. 1 Bl. Comm. 44.
13. See Seagle, *Rudolph von Jhering: or Law as a Means to An End,* 13 U. of Chi. L. Rev. 71 (1945); William Seagle, Men of Law 306 *et seq.* (1947).

long suspected lawyers of using)—the hairsplitting machine which was capable of splitting a hair into exactly 999,999 equal parts (and, in the hands of a skilled operator, of duplicating the performance on each part), and the dialectic-hydraulic interpretation press for making ideas conform to juristic interpretations. There was also an Academy of Legal History, where precedents were not only discovered but also invented, and a Hall of Concepts which was entered not through a door, but by butting one's head through the wall!

In America, in November, 1880, a young Boston lawyer by the name of Oliver Wendell Holmes, Jr., began a series of popular lectures with the more prosaic, but equally startling statement: "The life of the law has not been logic: it has been experience. The felt necessities of the time, the prevalent moral and political theories, intuitions of public policy, avowed or unconscious, even the prejudices which judges share with their fellow-men, have had a good deal more to do than the syllogism in determining the rules by which men should be governed."[14]

At the time, neither outcry nor acclaim greeted Holmes' pronouncement. The legal world regarded his approach with suspicion; but the body of his work was based on a scholarship so profound that it was difficult to criticize. Two years after his lectures on "The Common Law," Holmes was appointed judge of the Massachusetts Supreme Court; twenty years later, Justice of the United States Supreme Court. In opinions, speeches and articles, Holmes elaborated his views. The difficulty with most thinking about law, he pointed out, arises from the confusion of law and morals. Without neglecting the relationship between the two, the distinction must be kept in mind if one is to have any real idea of what the law is. For any given individual, he said, the law is simply a prediction of the way in which the public force possessed by the government will act upon him. Since the force of government, in our system, acts upon the individual through the courts, it is clear that the court decisions of specific cases are law in any practical sense. "The prophecies of what the courts will do in fact, and nothing more pretentious, are what I mean by the law."[15]

This was the keynote for the development of legal thought during the next half century. John Chipman Gray wrote that we must distinguish between the law and its sources. The failure to do

14. Oliver Wendell Holmes, Jr., The Common Law 1 (1881; 1945 ed.).
15. O. W. Holmes, *The Path of the Law*, 10 Harv. L. Rev. 457 *et seq.* (1897), in Collected Legal Papers of Oliver Wendell Holmes 167, 173.

this, he said, is responsible for the differences between the schools of jurisprudence.[16] The law is simply the rules by which the courts decide cases. On the other hand, the sources of the law—the authorities used by the courts in formulating rules—include statutes, precedents, customs and principles of morality.[17] In the twentieth century men were beginning to talk about law without referring it to the word of God or the Law of Nature.

Yet agreement among the professionals as to the significance of law was now even more remote than before. A small difference between Holmes and Gray, which would probably pass unnoticed by any but the technical eye of a lawyer, was the basis for a new division of theorists. Holmes found the law in the actual decisions of the courts; Gray said it was in the *rules* by which the courts decide cases. This raises the question, Are the decisions of the courts and the rules for decision the same thing? In other words, do the courts actually decide cases on the basis of rules?

One school of law men answer No. The rules, they say, are merely the rationalizations by which judges seek to justify their decisions. In every actual case, they point out, there are rules that can be applied which lead to contrary results. In fact, no case would ever go to trial unless at least two lawyers reached different results in applying the rules to the facts in that instance. Therefore, they conclude, there is no such thing as certainty in the sense of prediction based on legal rules. The only real law is the decision of a particular judge in a specific case. The scholars whose writings have emphasized the particular case, rather than the general rule, as the basis for a study of the law, have been called Legal Realists,[18] although some have objected to the term.[19]

16. John Chipman Gray, The Nature and Sources of Law § 191 (1909).
17. *Id.* §§ 273-274.
18. On "Legal Realism," see Corbin, *The Law and the Judges,* 3 Yale L. Rev. 234 (1914) (called by Llewellyn "the first rounded presentation of the realistic attitude"); Cook, *Scientific Method and the Law,* 13 A. B. A. J. 303 (1927); Moore and Hope, *An Institutional Approach to the Law of Commercial Banking,* 38 Yale L. Y. 703 (1929); Jerome Frank, Law and the Modern Mind (1930); Llewellyn, *A Realistic Jurisprudence—The Next Step,* 30 Col. L. Rev. 431 (1930); Britt, *The Rules of Evidence,* 25 Corn. L. Q. 556 (1930); Llewellyn, *Some Realism About Realism,* 44 Harv. L. Rev. 1222 (1931); Radin, *Legal Realism,* 31 Col. L. Rev. 824 (1931); Cohen, *Transcendental Nonsense and the Functional Approach,* 35 Col. L. Rev. 809 (1935); E. S. Robinson, Law and the Lawyers (1935); T. W. Arnold, The Symbols of Government (1935); Pound, *Fifty Years of Jurisprudence,* 50 Harv. L. Rev. 557 (1937), 51 Harv. L. Rev. 444, 777 (1938); Llewellyn, *On Reading and Using the New Jurisprudence,* 26 A. B. A. J. 300, 418 (1940); My Philosophy of Law (1941), the essays of: J. W. Bingham, p. 5 *et seq.,* W. W. Cook, p. 29 *et seq.,* John Dewey, p. 71 *et seq.,* K. N. Llewellyn, p. 181 *et seq.,* Underhill Moore, p. 201 *et seq.,* Thomas Reed Powell, p. 267 *et seq.,* Max Radin, p. 285 *et seq.;* Jerome Frank, If Men Were Angels,

Opposed to this emphasis on the particular case rather than the legal principle as the most significant aspect of law, although agreeing with the Realists that law must adapt itself to social needs, is a group usually identified as the school of Sociological Jurisprudence. While the lines of separation are not distinct, this school has developed more from the stimulus of Jhering than of Holmes.[20] The most prominent spokesman of the Sociological School has been Roscoe Pound, the eminent former Dean of Harvard Law School.[21] According to his view, law is "a highly specialized form of social control in a developed politically organized society."[22] The purpose of law is to satisfy as much of the total of human wants as we may with the least sacrifice. Consistent with this purpose, legal history is a record of continually wider recognition and satisfaction of human desires.[23] Pound emphasizes that law properly includes three elements: a group of professional administrators, a traditional technique, and a body of rules, principles and standards by which conduct is measured and cases are decided.[24] Pound has been acclaimed as the most fruitful of legal philosophers,[25] and damned as a prophet whose writings are a mass of inconsistencies.[26] In general, he represents a middle ground between the tough-minded Realists on the one side, and the traditionalists on

App. 5 (1942); Law and Learning Theory—Moore and Callahan, 53 Yale L. J. 1 (1943), Hull, 53 Yale L. J. 330 (1944), Yntema, 53 Yale L. J. 338 (1944); Interpretations of Modern Legal Philosophies (1947), the essays of: Thomas A. Cowan, Legal Pragmatism and Beyond, p. 130, Karl Olivecrona, Law As Fact, p. 542, Max Rheinstein, Who Watches the Watchman? p. 589, Julius Stone, Fallacies of the Logical Form in English Law, p. 696; Simpson and Field, *Social Engineering Through Law: The Need for a School of Applied Jurisprudence,* 22 N. Y. U. L. Q. 145 (1947); Cowan, *The Relation of Law to Experimental Social Science,* 96 U. of Pa. L. Rev. 484 (1948). Perhaps the last two articles are closer to the approach suggested in the present article than to the jurisprudence of realism. In any event, there is considerable diversity among the references cited above, and the list is intended to be suggestive rather than definitive. Also see references cited in note 45 infra.

19. Jerome Frank, If Men Were Angels App. 5, p. 276 *et seq.* (1942).

20. Seagle, *Rudolph von Jhering: or Law as a Means to An End,* 13 Chi. L. Rev. 71 (1945).

21. See Pound, *The Scope and Purpose of Sociological Jurisprudence,* 24 Harv. L. Rev. 591 (1911), 25 Harv. L. Rev. 140 (1912); Pound, *Theories of Law,* 22 Yale L. J. 114 (1912); Pound, *Fifty Years of Jurisprudence,* 50 Harv. L. Rev. 557 (1937), 51 Harv. L. Rev. 444, 777 (1938); Interpretations of Modern Legal Philosophies: Albert Kocourek, *Roscoe Pound as a Former Colleague Knew Him,* p. 419, Edwin W. Patterson, *Pound's Theory of Social Interests,* p. 558 (1947); and references in following notes.

22. Pound, in My Philosophy of Law 249 *et seq.* (1941).

23. Pound, An Introduction to the Philosophy of Law 99 (1922).

24. Pound, in My Philosophy of Law 249 *et seq.* (1941).

25. Benjamin N. Cardozo, The Growth of the Law 81 (1924).

26. Jerome Frank, If Men Were Angels App. 7, p. 332 *et seq.* (1942).

the other, although in later years he has tended more and more to express the views of the most conservative part of the bar.

The Supreme Court has wrestled long and painfully with this problem. The issue first came before the Court in 1842, in the celebrated case of *Swift v. Tyson.*[27] The case began when Swift, a resident of Maine, sued Tyson, a New Yorker, in the federal court of New York on a bill of exchange. Tyson offered facts in defense which would have been a good defense under the decisions of the New York courts, but which would not have been a defense to the action in many other states. The federal courts were bound by statute to follow the "laws" of the state in which they were sitting. So the issue arose whether the federal courts should consider the decisions of the State courts as "law." The Supreme Court unanimously answered "NO!" Speaking for the court, Justice Story said, "In the ordinary use of language it will hardly be contended that the decisions of courts constitute laws. They are, at the most, only evidence of what the laws are, and are not of themselves laws. They are often re-examined, reversed, and qualified by the courts themselves, whenever they are found to be either defective, or ill-founded or otherwise incorrect." Justice Story did concede that the decisions of local courts "are entitled to, and will receive, the most deliberate attention and respect of this court; but they cannot furnish positive rules, or conclusive authority, by which our own judgments are to be bound up and governed." The law is to be found in something far more permanent and perfect than the mere opinions of mortal judges; it can be found in "the general principles and doctrines of . . . jurisprudence." In a later case, the Court indicated that jurisprudence is based on the Law of Nature, which "is founded on the common consent as well as the common sense of the world."[28]

This official adoption of the doctrine of Natural Law went unchallenged for many years. Not until the tough-minded Holmes reached the bench was it even seriously questioned. Then, in 1917, Holmes criticized an opinion of the Court in a short sentence that laid bare the whole fuzzy conception underlying the majority assumption. "The common law," Holmes declared, "is not a brooding omnipresence in the sky but the articulate voice of some sovereign or quasi-sovereign that can be identified."[29] It was a lone dissent.

27. 41 U. S. 1 (1842).
28. The Prize Cases, 67 U. S. 635, 670 (1862).
29. Southern Pacific Co. v. Jensen, 244 U. S. 205, 218, 222 (1917).

Ten years later Holmes was still dissenting from the same proposition. It is hard to resist the impression, he wrote, that there is a transcendental body of law outside of any particular state, one august corpus, to understand which clearly is the only task of any court. "But there is no such body of law. The fallacy and illusion that I think exist consist in supposing that there is this outside thing to be found. Law is a word used with different meanings, but law in the sense in which courts speak of it today does not exist without some definite authority behind it."[30] It was still a dissent, but Holmes was no longer alone; Brandeis and Stone had joined him.

Holmes left the bench, but his ideas remained. In 1938 the Supreme Court again considered the old question of the nature of the law which federal courts were supposed to apply. By this time, Holmes' logic had become irresistible. The opinion of the majority argued that the former position of the Court had been erroneous and contrary to the Constitution, on technical grounds. But the decision itself was clear-cut: the old doctrine of a transcendental body of law existing as a brooding omnipresence in the sky was repudiated.[31] Having freed itself from the limiting conception of a transcendental Natural Law, the Court has continued to expand its definition as new cases come before it. The new definition of law is a flexible one: "It would be a narrow interpretation of jurisprudence to confine the notion of 'laws' to what is found written on the statute books, and to disregard the gloss which life has written upon it. . . . Deeply imbedded traditional ways of carrying out state policy . . . are often tougher and truer law than the dead words of the written text."[32] So the Court has held that the decisions of the lower State courts are law,[33] that the practices of State commissions and county assessors are law,[34] and that federal administrative regulations are law.[35]

In spite of the authority of the Supreme Court, the majority of the judges and lawyers seem to remain either unconvinced or unaware that there has been any kind of change in thinking about the law since the days of Blackstone. Courts continue to justify

30. Black & White Taxicab & T. Co. v. Brown & Yellow Taxicab & T. Co., 276 U. S. 518, 532, 533 (1928).
31. Erie Railroad Co. v. Tomkins, 304 U. S. 64 (1938).
32. Nashville, C. & St. L. Ry. v. Browning, 310 U. S. 362, 369 (1940).
33. Fidelity Union Trust Co. v. Field, 311 U. S. 169 (1940), *rehearing denied,* 311 U. S. 730 (1940).
34. Nashville, C. & St. L. Ry. v. Browning, 310 U. S. 362 (1940).
35. Columbia Broadcasting System v. United States, 316 U. S. 407 (1942).

their decisions by an appeal to "natural justice" and similar fuzzy verbalisms.[36] Lawyers think and argue in traditional terms. Legal periodicals are mainly filled with articles that seem to have been written with quill pens by the flickering light of tallow candles. And faint confused echoes of Aquinas continue to reverberate through the hollow halls of the citadels of legal conservatism.[37] The viewpoint of the traditionalists is epitomized by one of the eminent members of the bar in his conclusion that the rules of law constitute a system which is fair and reasonable, and if the standards of law are not adapted to human affairs, then it is the human race which is at fault and not the law![38]

Today there seem to be more views of law than ever before, and even less agreement. The prevailing views are roughly represented by the Realist, the Sociological, and the Transcendental schools, but such a classification glosses over most of the points on which there is a current spilling of much ink, if little blood. Within each school there are doctrinal points of difference on which no two scholars will agree. Pound finds twelve distinct conceptions of law within the traditional schools alone[39] (although it takes a philosophical microscope to see the difference between some of his categories). Disagreement arises from the different approaches to legal problems. Cardozo suggests four, the philosophical, the historical, the traditional, and the sociological.[40] More recent thought has suggested others.[41] Contention arises from the varying purposes to which the analyses are devoted. Dean Wigmore finds that there are at least nine such viewpoints in current discussions.[42] There are disputes as to the origin of the law—whether divine revelation, reason, custom, social contract, force or fraud. Debate rages as to the proper ends of the law—to keep the peace, to maintain the status quo, to assure the freedom of individual action, to satisfy human wants, or to satisfy the desires of a dominant group or class. Dispute exists on every level, from the

36. *E.g.*, Ralli v. Societa Anonima, 222 Fed. 994, 1000 (D.D.C. 1915); George's Radio v. Capital Transit Co., 126 F. 2d 219, 222 (App. D.C. 1942).

37. *E.g.*, Ben W. Palmer, *Hobbes, Holmes and Hitler*, 31 A. B. A. J. 569 (1945); Simmons, *The Supremacy of Law*, 32 A. B. A. J. 17 (1946); Holman, *Forms of Government*, 32 A. B. A. J. 190 (1946); *What Price Pragmatism?* 34 A. B. A. J. 1120 (1948); *Natural Moral Law*, 35 A. B. A. J. 42 (1949); *The Court and the Popular Will*, 35 A. B. A. J. 129 (1949); and almost any other issue of the same publication.

38. John M. Zane, The Story of Law 459 (1927).

39. Roscoe Pound, *op. cit. supra* note 23, at 60 *et seq.*

40. Benjamin N. Cardozo, The Nature of the Judicial Process (1921); The Growth of the Law 62 (1924).

41. See reference cited in note 18, *supra.*

42. Wigmore in My Philosophy of Law 313 *et seq.* (1941).

most basic assumptions to the most specific applications. The outstanding fact is that the area of disagreement is as wide as the field of law itself.

In reviewing the whole debate, which has lasted for more than two thousand years already, it is apparent that remarkably little information has been conveyed by the millions of tracts, essays and volumes which have been cast upon the waters by earnest thinkers. Ideas have floundered and drowned in the sea of words called Jurisprudence, and the flotsam has been mostly froth. Some service has, indeed, been rendered by the modern thinkers, Bentham, Jhering, Holmes, Pound, the Realists, and others of similar views, in bringing law out of the sky and down to earth. In tearing away the veil of pretentious verbiage that had been cast around the notions of Natural Law, the modern thinkers have exposed that concept as a superstitious belief in Supernatural Law, beguilingly presented as though it were somehow identified with the "nature" that man associates with the good earth. Their combined effect has been to change law from a supernatural superstition to a human institution. The subject which could formerly be known only by mystical intuition may now, at least, be studied by mundane minds.

Still, the fact remains that we are no nearer agreement on answers to the fundamental questions of law than we were two thousand years ago. It seems about time for some one to begin to suspect that we are either asking the wrong questions, or looking for answers in the wrong way, or doing both. Once this ugly suspicion takes root, it will probably not take long for the conviction to become established that jurisprudence has been a sterile study because its questions have been meaningless and its methods have been futile.

To consider first the ubiquitous question as to the "nature" of law, what possible significance can such an inquiry have, except to provide a convenient definition for those who wish to use that, rather than some other, term? A policeman will get no less respect because his action in arresting a citizen is not classed as "law" by some scholar. A client who has been denied a license by some commission will not be comforted to hear his lawyer assure him that administrative action is not "law." In fact, were it possible to get universal agreement that law is any one of the things which it has been claimed to be, the only result would be to make us invent some other term for the residue of governmental actions.

Obviously law is an abstraction. And abstractions are inventions of the human mind, not phenomena of nature. Therefore the definition (that is, construction) of an abstraction is a matter of convenience and usage. Whatever the definition, it is an arbitrary one, as it exists only by virtue of general agreement, and cannot be "proved" or "disproved," since it cannot rationally be called either "right" or "wrong." The function of a definition is simply to furnish a means of communication by pointing out a particular category that is to be represented by a single term. Anyone who objects to the definition of a particular term may (both legally and logically) set up his own definition, and, if he can get anyone else to agree with him, carry on discourse with his own terms and definitions.

But the fact that one is able to use one term to mean two different things is no more significant than the fact that you can use two terms to mean the same thing. It is sublimely ridiculous for people speaking different languages to argue as to which word is the "true" name for a man, or a house—or the law. It is equally ridiculous to argue as to which definition is the "true" meaning of a single term in any language. Consequently the question as to the nature of law will never be answered, since there is no answer—the question is a meaningless one. The nature of law is whatever we define the term to mean, and we may define it as suits our pleasure and convenience.[43]

The problem remains, of course, as to how law can most conveniently be defined for purposes of intelligent discourse. Those whose orientation remains primarily theological will claim that only some form of divine revelation deserves to be called "law," and that all the rest is something else, say, mere "politics." Others who are somewhat less mystical will prefer to use the term to indicate some level of government activity—legislative, executive, administrative or judicial. While the definition will, in any event, be an arbirtary one, the most sensible procedure would appear to

43. For further popular discussion of the relationship between abstraction, definition and meaning, see Stuart Chase, The Tyranny of Words (1938); S. I. Hayakawa, Language in Action (1939); Lee Loevinger, The Law of Free Enterprise 3 *et seq.*, 88 *et seq.* (1949). For more technical consideration of the subject, see P. W. Bridgman, The Logic of Modern Physics 5 *et seq.* (1927); Morris R. Cohen and Ernest Nagel, An Introduction to Logic and Scientific Method 223 *et seq.* (1934); Cohen, *supra* note 18; John Dewey, Logic, The Theory of Inquiry 349 *et seq.* (1938); Felix Kaufmann, Methodology of the Social Sciences 33 *et seq.* (1944); Charles Morris, Signs, Language and Behavior (1946), and references cited in the exhaustive bibliography to this latter volume.

be to seek what Bertrand Russell calls an "ostensive definition."[44] This means simply observing how people actually use the word, watching what they point to when they use the term "law."

If we seek the law that men live by, rather than the law philosophers dream of, the definition may be less pleasing to the prejudices of some and to the esthetic ideas of others, but at least lawyers will have the tremendous advantage of beginning to talk in terms that the public can understand. Such a definition, most assuredly, will be less abstract than any of those proposed by the great thinkers of the law. Probably it will start with the cop on the corner, and include the local tax assessor, the desk sergeant, the municipal judge, and the clerk of court. Certainly the law that men live by is not a transcendental abstraction hovering somewhere between heaven and earth, nor a vague body of precepts and principles which are concerned with other abstractions called "interests." It can not even be confined to the decisions, or predictions of decisions, of particular cases. The great majority of men certainly act according to what they believe the law to be without any thought of being called to answer in court for their actions.

Men obey traffic lights and parking signs because the law says they should. They pay taxes according to the assessments of commissioners and boards. They go to jail because juries convict and judges sentence; but they go into the Army because the President orders them to report for induction. (Remember?) The introduction of a bill in Congress causes the stock market to fluctuate; and vast changes in business or labor practice may occur from the mere passage of a statute. Trains, planes and broadcasting stations operate according to the orders of administrative commissions, sometimes backed by judicial authority, often not. Lawyers may debate the fine distinctions between judicial, administrative and legislative action. For the man in the street, action which involves government authority is law. The words and actions of government agents, acting in their official capacity, are the laws men live by.

In practice, the lawyers themselves are coming to act upon this definition, whatever else they may say. They are no longer able to confine their attention to judicial statements of traditional principles. Today they must be familiar with statutes, executive orders, and administrative rules, as well as with many practices not to be found in books at all. When their financial interest is con-

44. Bertrand Russell, Human Knowledge, Its Scope and Limits 63 *et seq.* (1948).

cerned, the bar associations have no hesitation in claiming that accountants who prepare tax returns, traffic experts who appear before the I. C. C., and other similar specialists, are "practicing law," although in seminars and journals they dearly love to derogate such activities as being quite outside the sacred field of law.

However, we must be on guard against the temptation to feel that the acceptance of this—or any other—definition has solved any problems. It has not. It has only given us one term for our discourse, and perhaps marked a field of study. It is at precisely this point that the great failure of jurisprudence has occurred. Jurisprudence has never concerned itself with any problems beyond setting up definitions, concepts and principles which are self-consistent and inclusive. It has been purely philosophic not only in its subject matter but also in its methods. It has attempted to establish a systematic arrangement of legal concepts and principles, and it has attempted to do this exclusively by introspective cogitation.

Because jurisprudence has set the pattern for legal thinking, and because jurisprudence has been concerned with trying to answer meaningless questions by futile speculation, the law has proceeded very largely on *a priori* grounds and has adapted itself to social needs only under great pressure and very slowly. The lawyers have, in fact, so bemused themselves with words and theories that they have not even yet developed anything like a rational system for performing their principal function of deciding particular controversies. Most decisions are presented behind a verbal facade that is cast in the syllogistic form. But it requires little sophistication to demonstrate that the logical form has little to do with judicial decisions.[45] One recent writer classifies legal principles according to the logical fallacies involved in them.[46] First, there are the principles of "meaningless reference," those that simply do not make sense logically. Typical of these is the

45. This has been observed frequently since Justice Holmes' classical statement on the subject, Oliver Wendell Holmes, Jr., The Common Law 1 (1881). See references cited in note 18 *supra*, especially Cohen, *supra* note 18; Jerome Frank, Law and the Modern Mind (1930). Also see Hutcheson, *The Judgment Intuitive: The Function of the "Hunch" in Judicial Decisions*, 14 Corn. L. Q. 274 (1929); Hutcheson, *Lawyer's Law and the Little, Small Dice*, 7 Tulane L. Rev. 1 (1932); Frank, *What Courts Do in Fact*, 26 Ill. L. Rev. 658 (1931); C. J. Keyser, Mathematics As a Culture Clue, essay on The Meaning of Mathematics 1 *et seq.* (1947); Jerome Frank, *Say It with Music*, 61 Harv. L. Rev. 921 (1948); and reference cited in following note. But compare Levi, *An Introduction to Legal Reasoning*, 15 U. of Chi. L. Rev. 501 (1948).

46. Julius Stone, Fallacies of the Logical Form in English Law, in Interpretations of Modern Legal Philosophies 696 (1947).

legal distinction between "provisions" and "exceptions" in statutory rules. Second, are the legal categories of "concealed multiple reference." These are legal concepts which appear to be single in their statement, but which actually apply to numerous diverse situations that have little in common. Examples are the doctrine of res gestae, and concepts such as "right," "malice," and "property." Third, are legal principles of "competing reference," which are pairs or groups of rules that overlap in their application to any particular situation, although they lead to different results. Among this group are the distinction between substantive and procedural rules and the competing doctrines of trusts and contracts as applied to third-party beneficiary situations. Fourth, are legal principles of "concealed circuitous reference," in which the definition of the principle depends upon assuming the very concept that is being defined. There are numerous examples of this in the law, two outstanding ones being in the definition of negligence, particularly with respect to duty and the remoteness of damage, and in contracts, the inference by a court of implied conditions and of quasi-contracts.[47] Fifth, is the category of "indeterminate reference," which includes that vast multitude of legal terms that are so vague that they can be construed to mean anything—or nothing. Notable among this legion are the notions of just cause, due care, fair, reasonable, arbitrary, and clean hands. Many, if not most, conventional legal principles fall into more than one of these categories.

Anyone who has the least lingering faith that lawsuits are decided on a "logical" basis should consider the matter in the light of the recent achievements in cybernetics.[48] Machines are now in existence which have so far imitated "thought processes" that they can solve differential equations and other "logical" operations of equal or greater complexity. The machines can be constructed to solve equations with virtually any number of variables, and with large numbers of variables the operation is much faster than when performed by the human mind. Why should not a machine be constructed to decide lawsuits? The complexity of the problems presented, measured by the number of variables involved, is well within the limits of existing machines. The difficulty is that we have no terms to put into the machines, as the scientists have numbers and symbols. Legal terms are almost all vague verbalizations which have only a ritualistic significance. As soon as the

47. For further examples and discussion of the circuitous reference of legal terms, see Lee Loevinger, The Law of Free Enterprise 88 *et seq.* (1949).

48. See Norbert Wiener, Cybernetics, or Control and Communication in the Animal and the Machine (1948).

judge has decided which term to use—negligence, due care, contract, property, right or duty—the decision of the case has been made. The use of terms is like the old custom of donning a black cap to pronounce the death sentence. The costume is chosen only after the decision has been reached. The terms which apply to the case are selected only after the result has been decided. But the choice of legal terms to describe an act is certainly not a "logical" operation. Where it is not purely arbitrary, it is, at most, intuitive. Thus, by present methods, the determination of every genuine legal issue is made at the sub-verbal (and usually subconscious) level, where formal "logic" can neither exist nor exert influence.

Recognition of the fact that lawsuits are not decided by logic is not new. Bentham suggested as much, and Holmes said it. More recently, Frank, Arnold and others have elaborated the point.[49] But here the modern movement has bogged down. Frank insists that uncertainty is inherent in the legal process, and that the grasping for certainty in general principles is simply an expression of infantile emotional attitudes which have persisted into adulthood.[50] Arnold finds the explanation of the inconsistencies and absurdities of the law in the fact that all our social institutions are mere symbols of our dreams and aspirations.[51] But all this is merely a continuation of the ancient quest for the philosopher's stone. The new school seeks it in some scientific, rather than some moral, explanation or principle, but the fallacy is the same. This is simply a new jurisprudence with a new vocabulary. The argument seeks to substitute a modern analysis for an ancient one, but the traditional techniques are still in use. It is all armchair speculation.

If mankind is capable of learning anything, it should have learned by this time that it can solve no problems by introspection, but only by investigation. Knowledge cannot be acquired by speculation, but only by observation. It should be apparent by now that philosophical speculation is no more going to solve any of the problems of law than it has solved the problems of any other phase of man's earthly existence. In every other field of activity, knowledge has remained primitive until the adoption of scientific methods —then science has increased man's knowledge and power faster and further than the boldest pre-scientific philosopher ever dreamed of. One after the other, astronomy, physics, chemistry, biology,

49. See references cited in note 45 *supra*. Also see Jerome Frank, A Sketch of An Influence in Interpretations of Modern Legal Philosophies 189 (1947).
50. Jerome Frank, Law and the Modern Mind (1930).
51. T. W. Arnold, The Symbols of Government (1935).

medicine, and finally psychology have abandoned speculation in favor of investigation. Economics is now beginning to move in the same direction. The only important area of human activity which has developed no significant new methods in the last twenty centuries is law.

John Dewey has commented cogently on this situation. "In all the fields but the social," he writes, "the notion that the correct solution is already given and that it only remains to find the facts that prove it so is so thoroughly discredited that those who act upon it are regarded as pretenders, or as cranks who are trying to impose some pet notion upon the facts. But in social matters, those who claim that they are in possession of the one sure solution of social problems often set themselves up as being peculiarly scientific while others are floundering around in an 'empirical' morass."[52] Whereas in other fields rational procedure is regarded as collecting facts first and then attempting to formulate theories, in the field of social problems facts are usually collected only for the support of some preconceived theory, such as individualism, collectivism, socialism, communism, capitalism, or something else. Thus the very character of the observation, as well as the facts observed, are determined by the theory held. As a result there is a continuing battle as to the "correct" theories of social action, but no real consideration at all given to the method of securing facts and arriving at conclusions. The adoption of a scientific attitude with respect to social problems leads Dewey to conclude that most of the current controversies in this field are completely meaningless. Present theories are no more than the battle-cries of partisans seeking power. If we would increase our knowledge and have some chance of arriving at an intelligent solution to our problems, it is essential that we adopt scientific methods of inquiry.

Of course, the suggestion that science be introduced into law and other social fields is a threat to all those with a vested interest in a viewpoint, and so it is met with indignant objection. The first to be raised usually is the argument that government is the one field in which "experiment" is impossible because the interests involved are so important that we cannot afford to "take a chance" on the results of an experiment. This argument rests upon the assumption that if we are willing to forego the advantages of experiment in everyday life, we can simply rely upon methods and institutions which have been proved by experience. Actually this assumption is a naive and dangerous illusion. In a changing world

52. John Dewey, Logic, The Theory of Inquiry 497 (1938).

there is no way to avoid experiment (in the sense of risk, or undertakings of which the result is unknown). To avoid experimenting, it is necessary to perform a similar act more than once under substantially identical circumstances, so that the result can be predicted in advance. But it is only in the laboratory that conditions can be controlled accurately enough so that we can know they are substantially identical on successive occasions. In social situations, changing conditions are constantly forcing experiments upon us.

In other words, changing conditions in the world are constantly imposing upon us the risk of unknown and unwelcome consequences from our actions. There is no possible way to avoid this risk. The one choice we do have is to seek all possible knowledge about the problem involved and to attempt to use this knowledge first in solving the problem, and, if we fail, in learning the causes of the failure. For example, to apply the principles devised for the regulation of horse and buggy and steamboat to automobiles and airplanes is as much of an experiment as it would be to write wholly new laws, drafted to meet the conditions created by new machines. The only difference is in the kind of experiment. In refusing to change established principles and institutions to meet new conditions, we are "experimenting" thoughtlessly and blindly. In attempting to devise new laws and new techniques to meet new conditions, we are using what knowledge and ability we have. The reliance on tradition to solve new problems is a gamble in which the cost and result is literally left to chance; the conscious effort to devise new solutions for new problems is an experiment in which the risk is calculated and the attempt made to reach a desired result. Without the use of science, the assumption of the inevitable risks of living is merely a gamble; through science we can at least raise our risks to the dignity of experiments.[53]

The same argument, cast in different language, is sometimes directed to the difficulty of the "trial and error" method in social affairs. Yet it should be plain to all but the hopelessly naive that we have no choice of accepting or rejecting the so-called trial and error method in solving social problems. The only thing we can do is to keep on trying; and it is as certain as anything can be that we shall keep on erring very frequently. Actually, trial and error is no "method" at all. The only rational method is trial

53. As examples of the argument that experiment is impossible in the field of law, see My Philosophy of Law, Lon L. Fuller, p. 118 *et seq.*, Walter B. Kennedy, p. 155 *et seq.* (1941). As an example of an actual experiment in this field, see Printzlein. *Deferred Prosecution: Provisional Release of Juvenile Delinquents*, 7 Fed. B. J. 278 (1946).

and error and *change*. Mere repetition of trial and error accomplishes nothing; only successively different trials will ever eliminate the error and achieve success. The one choice we do have is between studying past errors as a guide to future trials, and blundering blindly ahead in an unreasoning faith that somehow if we simply try often enough we may, by chance, avoid error.

Paradoxically enough, those who argue at one time that it is quite impossible to adapt the methods of science to the problems of law, are found at other times hinting that we have already tried scientific methods in recent years and found them wanting. Although the argument is not usually put quite so bluntly, it is suggested in the attacks on the "materialistic philosophy" of the present.[54] Further weight is loaned the suggestion by the freedom with which modern legal theorists employ the word "science." The present fashion seems to be to use the word "science" in place of "philosophy," so that contemporary jurisprudence has become, by self-appointment, "legal science."[55] In both cases it must be said that there is a complete failure to understand the nature of scientific method—or, for that matter, of philosophy. Science is not simply another kind of philosophy. Quite the contrary, as Max Eastman has pointed out, "Science in its mature form casts loose from philosophy, just as earlier it cast loose from religion and magic. It contents itself on the theoretic side with specific solutions of specific problems, and on the practical side with methods of procedure for accomplishing specific things."[56] There may be a philosophy based upon science, but it can never be a part of science itself. Philosophy is an attempt to generalize on the basis of speculation; science is an attempt to specify on the basis of investigation. There has not yet been any such thing as a "scientific" legal theory. The basic philosophy and methodology of the law today is the same as in the days of Hammurabi, Justinian and Aquinas.

Indeed the law has been remarkably successful in insulating itself against any infiltration of scientific knowledge. A rare, unlucky criminal is identified by ballistics, fingerprints or blood-

54. See Palmer, *Background for Dissensions: Pragmatism and Its Effect on the Law,* 34 A. B. A. J. 1092 (1948); and references cited in note 37 *supra.*

55. *E.g.,* Gray, *op. cit. supra* note 16, §§ 150,314; Roscoe Pound, An Introduction to the Philosophy of Law, Preface (1922); Interpretations of Modern Legal Philosophies, especially A. S. de Bustamante y Montoro, Kelsenism, p. 43, and E. M. Paz, Lask and Doctrine of the Science of Law (1947); and discussion and references cited in Cowan, *The Relation of Law to Experimental Social Science,* 96 U. of Pa. L. Rev. 484 (1948).

stains. An occasional psychiatrist is consulted on the issue of insanity. A few (very few) psychologists are called in to help treat juvenile delinquents. And legislatures sometimes consult an expert on sewage or smoke abatement. Perhaps this list is not complete, but it fairly represents the extent to which science has so far influenced the law. With some twenty-five thousand cases a year coming from the appellate courts alone, no reported decision has yet been determined by anything approaching a truly scientific investigation.[57] The law has not yet established institutional techniques for getting scientific knowledge about its problems. Most certainly it has not yet made anything like a trial of scientific method.

The most appealing of the arguments against the trial of scientific methods in social fields is the ego-inflating assertion that while planets, plants, elements and atoms can all be studied objectively man himself is so uniquely distinguished from all the rest of the cosmos that he is forever beyond the range of science. Variants of this argument are that we can investigate inanimate, but not living things, scientifically, and that we cannot investigate society as we do other things because we are a part of it ourselves. Gratifying as these arguments are to our vanity, it is clear that they are based on sentiment rather than logic. Science has long since crossed the borderline between inanimate and living objects of investigation, and our studies in biology, botany, and even physiology are as rigorously scientific as those in the physical fields. Further, the more the investigations advance the greater appears the similarity and the relationship between animate and inanimate phenomena. Even the most unique of human achievements—thinking itself—can, on an elementary level, be performed by "inanimate" machines.[58]

The claim that man cannot investigate himself is belied every day. A hundred years of progress in treating human physical ailments bears eloquent testimony to the value of man's study of man.[59] More recently turned to the employment of scientific techniques, economics, and specifically econometrics, is beginning

56. Max Eastman, Introduction to Modern Library edition of Capital and Other Writings by Karl Marx (1932). Also see, Sir James Jeans, Physics and Philosophy 82 *et seq.* (1943).

57. The suggestion of a scientific approach may be seen in the dissenting opinion of Judge Edgerton in George's Radio v. Capital Transit Co., 126 F. 2d 219 (App. D.C. 1942).

58. Norbert Wiener, Cybernetics (1948); N. Y. Times, Feb. 1, 1949, p. 27, "Artificial Brain Depicted by Doctor."

59. See H. W. Haggard, Devils, Drugs and Doctors (1929, Pocket Book ed. 1946).

to point the way toward greater control over parts of the social environment than conservative theorists have previously been willing to admit as possible.[60] Numerous other aspects of human behavior, both individual and group, are being studied by psychologists and anthropologists with great success. [61] The achievements of psychology in contributing to industrial and military efficiency are too well known to require more than a reference. Whatever else they may prove, and whether any particular conclusion stands or not, these studies demonstrate that man and his behavior are as much a subject for scientific investigation as any other natural phenomenon.

The most frequent and most ingenuous of the arguments against the use of science in the field of law (or any other field, for that matter) is the claim that it "disregards human values." The assumption of this argument, usually implicit though sometimes stated, is that science is a sort of Frankensteinian monster which, once created, irrestibly drags its creators to a predetermined and unpredictable fate. Such a belief can rest only on a complete failure to understand the nature of science. It is simply a tool, a technique for getting knowledge—nothing more.[62] Certainly a man who has some knowledge of probable consequences is just as free to control his own conduct as one who does not, unless ignorance itself is considered to be freedom. Science no more controls the use to which it will be put than an automobile controls the destination to which it will be driven. Clearly possession of an automobile gives us greater range of freedom of movement, for we can travel faster and further than on foot or by horse. Just so, the use of science will increase our freedom of action, for it will give us more efficient ways of doing whatever we want to do—as it has already done in so many fields.

60. See J. M. Clark, Preface to Social Economics, especially c. 13, and appendix (1936); S. E. Harris, editor, The New Economics (1947); George Soule, Introduction to Economic Science (1948).

61. See Stuart Chase, The Proper Study of Mankind (1948); George A. Lundberg, Can Science Save Us? (1947); E. G. Boring, A History of Experimental Psychology (1929); Murphy and Newcomb, Experimental Social Psychology (1937); Gardner Murphy, Personality: A Biosocial Approach to Origins and Structure (1948); C. Kluckhohn, A Mirror for Man, Anthropology and Modern Man (1949); Melville J. Herskovitz, Man and His Works: The Science of Cultural Anthropology (1948); Ruth Benedict, Patterns of Culture (1934, Penguin ed. 1946). These references are merely suggestive of a vast and growing field which it would be futile to attempt to exhaust at this point.

62. I am aware of the ultimate uncertainty of all human knowledge, which scientific knowledge shares. See Russell, *op. cit. supra* note 44. However, as compared to the speculative conjectures of jurisprudence, scientific knowledge may be regarded as a rock of solid certainty.

The discussion of science and values in this field sometimes gets confused with the argument about law and morals. It is a favorite trick of the traditionalists to identify law and morals by means of definition, as Blackstone did. This involves the uncritical assumption that law and morals are the same, or substantially the same thing. As a practical consequence, it puts the law beyond criticism or improvement, since any attack on the law is, by definition, immoral. By a parity of reasoning, if law and morals are identical, it is lese-majesty, or worse, to suggest that the operation of the law should be examined in an objective manner. However, a little close thinking will show that the insistence on separating law and morals is not an attack on moral values, but rather an elevation of them to a more important place in the hierarchy of thought. So long as law and morals are the same, all laws are moral, and morality can be no more than the law. But once we are free to possess moral values that are independent of the positive law, then we have a scale of values that is even higher than the law and a standard by which the law may be judged. Then, too, we become free to look at the law as it actually is and as it actually works, and, since we may have a moral standard by which to judge the operation, morals then become of real importance in shaping the law.

There is one fact of fundamental significance which somehow seems to get lost in the usual philosophizing on this subject. The basic premise of all law is the assumption that every law will somehow produce certain results in individual or group conduct. No modern society has ever attempted to legislate for the denizens of an upper or nether region beyond the earth. Law is always meant to affect the conduct of the people of this earth. Whether it does this or not, and in what manner, is certainly a matter that can be investigated. The importance of such an investigation is, of course, precisely equal to the importance of the law itself.

Whether law be human or supernatural in origin, its ultimate significance for mankind is its relation to and effect upon human behavior. The great lesson of western civilization is that such a relation, between natural phenomena, cannot be adequately understood on the basis of introspection, speculation or superstition, but requires investigation. The methods and techniques of investigation are what we mean by science. Thus the importance of applying science to law is exactly commensurate with the significance of law.

It is, of course, perfectly true that there are not yet adequate techniques in existence for investigating many of the most important problems in the field of social control of behavior. This appears to be the most forceful argument against the use of science in this area. In fact, the argument, for all its force, is no real objection. To begin with, there are already in existence many powerful and promising techniques for such studies. To mention only examples, the methods of semantics and statistics are already well established disciplines, while psychology, anthropology, sociology and econometrics, are rapidly developing more specialized techniques.[63] Some promising studies have already been made with these techniques in the field of criminal behavior.[64]

But even wholly disregarding the substantial body of knowledge that is already available for this undertaking, the argument that we do not now have the methods of study or the body of knowledge necessary to discover answers to all legal problems is simply a statement of present ignorance. The rational reaction to a recognized state of ignorance would appear to be an acknowledgement of the need for study, rather than a determination not to learn. Psychoanalysis suggests some interesting animadversions upon such a reluctance to learn, but they are unnecessary, and perhaps irrelevant, to this discussion.

A more pointed answer to the argument-from-present-ignorance is that it is part of the province of science itself to formulate problems and institute methods. Science begins by asking meaningful, answerable questions in place of the vague, and unanswerable psuedo-problems of pre-scientific speculative philosophy. Later, after some genuine research has been done, the problems are determined largely by the results and data of prior inquiry.

63. See references cited in notes 60, 61 *supra*. Also see Karl Pearson, The Grammar of Science (1892, Everyman's Library ed. 1943). This great classic is still probably as fine a statement of the fundamentals of the scientific method, and their ever-widening field of application, as has been made. Also see Alfred Korzybski, Science and Sanity: An Introduction to Non-Aristotelian Systems and General Semantics; Stuart Chase, The Tyranny of Words (1928); S. I. Hayakawa, Language in Action (1941); Charles Morris, Signs, Language and Behavior (1946). For an interesting example of the application of scientific and statistical techniques to a complicated social problem, see Klapper and Glock, *Trial by Newspaper,* Scientific American, Feb., 1949, p. 16.

64. See J. Michael and M. J. Adler, Crime, Law and Social Science (1933); F. F. Laune, Predicting Criminality (1936); W. Healy and A. F. Bronner, New Light on Delinquency and Its Treatment (1936); Sheldon and Eleanor Glueck, Criminal Careers in Retrospect (1943); David Abrahamson, Crime and the Human Mind (1944); P. H. Winfield, Mental Abnormality and Crime (1944); Han von Hentig, The Criminal and His Victim (1948).

This has been the course of development of all the physical and natural sciences, and there is no reason to assume that it will be otherwise in the social sciences.[65]

Likewise the argument that we cannot yet use scientific methods in the social fields because of the present diversity of views as to problems, methods, principles, and even terminology, is in fact one of the strongest arguments in favor of such use. The hallmark of science is the social character of its results. It is, from one viewpoint, simply a method of securing answers that will be acceptable to all competent observers.[66] A determination by a single scientist remains merely an hypothesis. Only after a proposition has been generally accepted by those engaged in similar investigation does it attain the dignity of a scientific theory or fact. It is, of course, always more difficult to attain such agreement in the early stages of a study, while the difficulties diminish as data accumulate, so the increase of scientific knowledge proceeds at an exponential rate. It is certainly difficult to arrive at generally acceptable results in the fields of social study at the present time. Whether this difficulty is due simply to the fact that scientific techniques have not yet been utilized, or whether it will remain more difficult to arrive at scientifically valid results in law than in, say, photo-chemistry or biophysics, is wholly a matter of conjecture at the present time. In any event, the greater difficulty in law, if there is one, does not indicate any lesser need for rigorous scientific investigation of the problems. On the contrary, the divergence of present opinions in this field points up the necessity for the introduction of scientific—that is, demonstrable, or generally acceptable—techniques and procedures. The alternative is the determination of social issues by tradition, prejudice, or naked conflict of interests. Science offers at least the possibility of harnessing intelligence to the task.

It is most illuminating to note the parallel between the present debates about the possibility and utility of a genuine social science and the similar battles in the early history of the natural sciences. Sir James Jeans, one of the greatest scientists of this century, remarks in his last book that Plato and Aristotle were "two major disasters" in the history of science.[67] He points out that the dead hand of Aristotle lay heavy on physics for two thousand years. Scientific progress did not begin until men began to think for

65. See John Dewey, Logic, The Theory of Inquiry 493 *et seq.* (1938).
66. Karl Pearson, The Grammar of Science c. 1 (1892).
67. Sir James Jeans, The Growth of Physical Science 47 (1947).

themselves, and until they "began to experiment to discover whether things were as Aristotle had said, and found they were not."[68] Startling as this derogation may seem to those who have only the classroom veneration for the Greek philosophers, it is based upon the facts of history which must be obvious to all who can read. As Bertrand Russell has stated, "Throughout the 2,000 years from Aristotle to Galileo, no one had thought of finding out whether the laws of falling bodies were what Aristotle said they were. To test such statements may seem natural to us, but in Galileo's day it required genius."[69]

To test the statements of accepted and authoritative dogma, from Galileo's day to our own, has required not only genius but also courage. From Copernicus to Einstein there has been the same opposition to every proposal that men should substitute inquiry for imagination and should rely on evidence rather than superstition in any new field. For centuries the Copernican theory was bitterly fought by pious men, of both the Catholic and the Protestant religions, on the grounds that it threatened the very foundations of faith, religion and morality.[70] The persecution and punishment of Galileo for teaching that the earth revolves around the sun are well known. It is not so generally realized that this unwillingness to accept the empirical methods of science even in the physical fields was not only fanatically determined but incredibly prolonged. The official ban of the Roman Catholic Church was not lifted from the Copernican theory until 1822.[71] For some time after their founding, both Yale and Harvard taught the Ptolemaic and the Copernican theories as equally tenable hypotheses.[72] Even in 1873 an ex-president of the American Lutheran Teacher's Seminary published a book on astronomy arguing that since truth is to be sought in the Bible, rather than in the works of scientists, the teachings of Copernicus, Galileo and Newton must be rejected.[73]

Although nineteenth century opposition to Copernicus was an anachronism, the "vested interests" of the sixteenth and seventeenth centuries were more solidly entrenched, more ardent and just as voluble in opposition to a scientific astronomical hypothesis as any social group of the present era is to the most radical of current proposals. We will never know how many curious minds

68. *Id.* at 52, 55.
69. Bertrand Russell, Religion and Science 32-33 (1935).
70. *Id.* at 40; Jeans, *op. cit. supra* note 67, at 130.
71. Jeans,*op. cit. supra* note 67, at 134.
72. *Ibid.*
73. Russell, *op. cit. supra* note 69, at 41.

had the futility of scientific inquiry revealed to them by the red glare of the flaming faggots of the auto-da-fe; but the number must have been large. But the "logic" of the anti-Copernicans was not rested solely on the stake, the fire, the rack, and the wheel. They spoke vehemently of the logical "necessity" of the Ptolemaic view of creation, of the absurdity of the Copernican theory, and of the "impossibility" of investigating matters established by ecclesiastical authority. One of Galileo's colleagues refused to look through the telescope on the grounds he saw no reason for inquiring into a matter that had already been settled by Aristotle.[74] All of the present objections against empirical attacks on social problems have been used many times before; and as often as they have been used, they have been abandoned.

As late as the middle of the nineteenth century, Dr. Oliver Wendell Holmes (father of the late Justice) provoked scorn and indignation among his professional colleagues by suggesting that they might be responsible for the spread of puerperal fever (or blood-poisoning) among women in childbirth. Doctors, the indignant among them declared, were gentlemen, and gentlemen had clean hands, and it was absurd to insinuate that clean hands might carry disease.[75] All the old arguments of tradition, superstition and supposition against evidence were marshalled and reiterated. Finally it was Semmelweiss, a brilliant and courageous Hungarian doctor, who persuaded the profession by evidence too overwhelming to be denied that hands clean enough for a drawing room might still carry sickness to a delivery room. The lives of uncounted millions of women have been saved by the stubborn insistence of Semmelweis that doctors should disinfect their hands between deliveries.[76] For this, the world has paid him homage—posthumously. During his lifetime he was called both incompetent and crazy for daring to challenge the traditional wisdom and mores of the calling on the basis of nothing more than his personal investigations.

In every field in which human knowledge has advanced, the story has been the same. Intuitive concepts and accidental practices seem adequate to primitive man. By repetition, they become habitual, then habit deepens into tradition, and finally tradition becomes unchallengeable truth. One day some skeptical mind suggests that perhaps the current version of truth is only tradition, perhaps tradi-

74. Jeans, *op. cit. supra* note 67, at 134, 174 *et seq.*
75. Haggard, *op. cit. supra* note 59, at 79.
76. *Id.* at 80-95.

tion is only ossified habit, and, in any event, the adequacy of both beliefs and practices to contemporary situations should be tested by investigation. Immediately all the traditional objections are made: you can't experiment in this field; investigation is old stuff, our ancestors have made all the investigations necessary; since people are involved you can't be objective; this cold-blooded proposal is immoral because it disregards values; and anyway there are no practical methods of making the investigation. Note that exactly the same arguments, with slight changes of phraseology, apply equally whether the subject matter is astronomy(how can you put a star in a test tube?), physics (Democritus knew all about atoms), physiology (you can't study men as though they were anibals), psychology (if you don't take account of man's soul you destroy all our values), or, the most recent child of science, cybernetics (don't be silly—how can you make a machine that will think?). Note also that in every case in which we have disregarded these objections, we have been able to formulate meaningful problems, institute effective techniques, gather valid data, and finally not only enlarge our useful knowledge but increase our control over both the environment and ourselves.

The next step forward in the long path of man's progress must be from jurisprudence (which is mere speculation about law) to *jurimetrics*[77]—which is the scientific investigation of legal problems. In the field of social control (which is law) we must at least begin to use the same approach and the same methods that have enabled us to progress toward greater knowledge and control in every other field. The greatest problem facing mankind at this midpoint of the twentieth century is the inadequacy of socio-legal methods inherited from primitive ancestors to control a society which, in all other aspects, is based upon the powerful techniques of a sophisticated science. The inescapable fact is that jurisprudence bears the same relation to a modern science of jurimetrics as astrology does to astronomy, alchemy to chemistry, or phrenology to psychology. It is based upon speculation, supposition and superstition; it is concerned with meaningless questions; and, after more than two thousand years, jurisprudence has not yet offered a useful answer to any question or a workable technique for attacking any problem.

77. Of course it is not important what term is used to indicate the scientific discipline suggested. It is important that it have a distinctive name, as well as a general program. The name suggested here seems, to the author, as good as any, since it seems to indicate the nature of the subject matter, and corresponds to other similar terms, such as biometrics and econometrics.

The utter futility of jurisprudence (as anything more pretentious than classroom or barroom entertainment) can be illustrated by a typical philosophical supposition. Suppose that all the legal scholars and lawyers in the United States (or in the world) were to be gathered in a single great conclave the day after tomorrow and presented with the questions of jurisprudence: What is law? What is the basis of law? What is the end and purpose of law? Define Justice, etcetera etcetera. Now suppose—this is a great feat of imagination—that all these lawyers should agree unamimously on answers to all of these questions. We would, at long last, then have authorative definitions of concepts like law, justice, and perhaps even of crime, contract, property and tort. (It is too much to suppose that even this imaginary conclave should agree on what constitutes a divorce in the United States.) What would be the result? I venture to suggest it would be nothing at all. If the results of these deliberations were published in some Super-Restatement of the Law, they would, no doubt, be cited by judges (together with Coke, Blackstone and appropriate cases) in rendering opinions. But, as has already been pointed out, they would not materially influence the result in any particular case, and, most assuredly, would furnish neither better methods nor better answers for any present problems.

Let us continue this supposition one step further. Suppose—what is certainly not impossible—that half a dozen or a dozen competent young lawyers and professors should decide to address themselves seriously to jurimetrics. After a year or so of work in the field, they decide to meet together for the purpose of discussing the problems and results of jurimetrics. A time and place are arranged and an agenda drawn up. What are the questions with which jurimetrics is likely to be concerned? It is certainly impossible to predict, in advance of work in the field, exactly what form the problems will take. Still, the general form and probable subject matter of many of the questions which jurimetrics, at least in its earlier stages, will attempt to investigate can be anticipated. It is reasonable to suppose that the agenda might be something like this:

The Problems of Jurimetrics

A. *The behavior of witnesses*

What is the statistical reliability and validity of present scientific methods of detecting deception?[78]

78. A substantial amount of work has already been done on the scientific detection of deception. At least fourteen psychometric methods of detecting

What is the comparative reliability and validity of cross-examination as a method of testing testimony?[79]

What new or refined techniques will give us better methods of detecting deception by witnesses?

How can the ability of a witness to observe and recollect be most easily measured?

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deception are known: (1) use of scopolamin; (2) use of sodium amytal; (3) hypnotic sleep; (4) measurement of systolic blood pressure; (5) measurement of rate of respiration; (6) measurement of galvanic reflex; (7) word association tests; (8) observation of pupillary reflex; (9) measurement of pulse rate; (10) recording of eye-movements; (11) recording of unconscious muscle-movements; (12) measurement of amplitude and rate of heart beat; (13) analysis of chemical content of blood; (14) change in the brain-wave patterns. These various measures are of various degrees of reliability and many of them are interrelated. There is a substantial body of literature on this subject. Hugo Munsterberg, On the Witness Stand (1908); W. M. Marston, The Lie Detector Test (1938); Wigmore, *Professor Munsteberg and the Psychology of Testimony*, 3 Ill. L. Rev. 399 (1909); *Use of Psychology Tests to Determine Credibility of Witnesses*, 33 Yale L. J. 771 (1924); Inbau, *Scientific Evidence in Criminal Trials*, 24 J. Crim. L. & Criminology 1140 (1934); Keeler, *Debunking the Lie-Detector*, 25 J. Crim. L. & Criminology 153 (1934); Inbau, *"The Lie Detector,"* 40 Scientific Monthly 81 (1935); *Detection of Deception Technique Admitted in Evidence*, 26 J. Crim. L. & Criminology 262, 431, 499 (1935); *Bloodhound Evidence*, 26 J. Crim. L. & Criminology 926 (1936); Jaycox, *Scientific Detection of Lies*, 40 Scientific American 370 (1937); Ruckmick, *The Truth About the Lie-Detector*, 22 J. of App. Psych. 50 (1938); Obermann, *Mild Affective States and the Berger Rythm*, 34 J. of Abnormal & Social Psych. 84 (1939); Berrien *Laboratory Studies of Deception*, 24 J. of Exp. Psych. 542 (1939); Tovillo, *History of Lie Detection*, 30 J. Crim. L. & Criminology 39 (1939); Forosch, *The Lie Detector and the Courts*, 16 N. Y. U. L. Q. 202 (1939); Keeler, *The Lie Detector Proves Its Usefulness*, 22 Public Management 163 (1940); Trovillo, *What the Lie Detector Can't Do*, 32 J. Crim. L. & Criminology 121 (1941); MacNitt, *Electrodermal Response and Cardiac Amplitude as Measures of Deception*, 33 J. Crim. L. & Criminology 266 (1942); Trovillo, *Deception Test Criteria*, 33 J. Crim. L. & Criminology 338 (1942); *Pupillary Responses during Deception*, (1943) 32 J. of Exp. Psych. 443 (1943), 34 J. Crim. L. & Criminology 135 (1941); Turner, *Crime Detection*, 30 Radio News 20 (1943); Johnston, *The Magic Lie Detector*, Saturday Evening Post, Apr. 15, p. 9, Apr. 22, p. 26, Apr. 29, p. 20 (1944); Reid, *Simulated Blood Pressure Responses*, 36 J. Crim. L. & Criminology 201 (1945). Cases which have considered the legal admissibility of such techniques are: Frye v. United States, 54 App. D. C. 46, 293 Fed. 1013 (App. D.C. 1923); State v. Hudson, 289 S. W. 920 (Mo. 1926); State v. Bohner, 210 Wis. 651, 246 N. W. 314 (1933); People v. Kenny, 167 Misc. 51 3 N. Y. S. 2d 348 (1938); People v. Forte, 279 N. Y. 204, 18 N. E. 2d. 31 (1938), *rehearing denied*, 279 N. Y. 788, 18 N. E. 2d 870 (1939); Commonwealth v. Kipple, 333 Pa. 33, 3 A. 2d 353 (1939); Commonwealth v. Jones, 341 Pa. 541, 19 A. 2d 389 (1941); People v. Becker, 300 Mich. 562, 2 N. W. 2d 503 (1942); LaFevre v. State, 242 Wisc. 416, 8 N. W. 2d 288 (1943); State v. DeHart, 242 Wisc. 562, 8 N. W. 2d 360 (1943); Koonts v. Farmers Mutual Ins. Ass'n, 235 Iowa 87, 16 N. W. 2d 20 (1944); Bruner v. People, 113 Colo. 194, 156 P. 2d 111 (1945).

79. There is a spate of panegyrics on the value of cross-examination, but no body of scientific literature comparable to that on psychometric detection of deception. See Stern, *The Psychology of Testimony*, 34 J. of Abnormal & Social Psych. 3 (1939).

How can the effect of interest or bias upon observation and recollection be measured?

B. *The behavior of judges*

What statistical measures will most conveniently summarize the behavior of individual judges in various categories of cases? How can we institute and maintain the basic records for such measures.[80]

How, within the framework of existing rules, can we investigate the behavior of juries, measure their reaction to evidence and instructions, and discover the determinant considerations in reaching verdicts?[81]

On the basis of inquiries relating to the behavior of witnesses, can we construct any objective criteria for weighing testimony?

How can we adapt the generally recognized scientific measures of probability to the problems of legal "proof"?

On the basis of data relating to the behavior of persons engaged in the judging process, are there any observable differences between the behaviour of judges-in-court, administrative "judges," and legislators? If we can discover such differences, how can they best be expressed qualitatively and quantitively?

C. *The behavior of legislators*

What practical measures can be instituted for investigating and recording in summary form the patterns of legislative behavior?

Can reliable patterns of the kind presupposed in the radical-conservative-reactionary terms of popular speech be discovered? If so, are there similar behavior patterns among "judges"? What are the measures of such patterns?

To what extent does the behavior of legislators, in legislature X during period Y, indicate the influence of precedent, evidence, personal interest, and other factors?

What procedures can be instituted in legislative bodies to secure

80. Frank reports that an attempt to maintain such records in New York for a few years disclosed results so disconcerting to the judges that the keeping of the records was discontinued. Jerome Frank, Law and the Modern Mind 112-115 (1930).

81. Two promising attempts by individual jurists along this line have been reported recently. See *St. Paul Judge Probes Juror s Mind,* 6 Bench and Bar of Minn. 17 (1949); Hartshorne, *Jury Verdicts: A Study of Their Characteristics and Trends,* 35 A. B. A. J. 113 (1949). These studies suggest that if some investigators would prepare uniform questionnaire and tabular forms, many judges might be willing to help gather similar data.

and present to the members more representative and reliable evidence relating to the subjects under consideration?

To what extent can court and administrative trial procedures be useful in legislative inquiries? What other procedures are available or can be devised to enable legislators to weigh evidence?

D. *Legal language and communication*

What current legal terms have a core of meaning and which ones become wholly meaningless under semantic analysis?

What operational definitions[82] can be given to the meaningful legal terms?

What semantic devices can be used immediately to make current legal jargon a useful means of communication?

What concepts, and correlative terms, are most useful for communication regarding the data and problems of jurimetrics?

What means can be devised and used to make the legal guides for public action intelligible to the public?

E. *Legal procedure and recordation*

How can ordinary controversies be presented to a tribunal in the simplest and quickest manner? How can the inordinate delays of current procedure, both in presentation and decision, be eliminated or minimized?

How can business machines and methods be adapted to handle the problems of filing and making available public records of lawsuits, judgments, land titles, births, deaths, marriages, divorces, business liens, and other similar materials? How can public records be made sufficiently available to the public so that "constructive notice" is more than a legal fiction?

F. *Non-aberrant personal maladjustments*

How can the formation of unstable marriage combinations be prevented or deterred?

How can marital maladjustments be separated into those which are capable of being resolved and those which are not?

How can potentially successful marriage combinations be preserved through critical periods of maladjustment in which one or both parties desire divorce?

82. See P. W. Bridgman, The Logic of Modern Physics (1927). Also see references on semantics cited in note 63 *supra*.

How can inherently unsatisfactory and unstable marital combinations be quickly and honestly dissolved without encouraging emotionally unstable personalities to seek divorce for reasons of personal whim rather than necessity?

What techniques and institutions can be established to offer normal opportunities for development to children in situations of (a) divorce, (b) unmarried parents, and (c) delinquent homes?

G. *Aberrations of behavior*

How can aberrant tendencies be detected before serious behavior problems occur?

How can the malleable aberrant be separated from the residual intransigent, or the incurable psychotic?

What treatment will cure the tendency to aberrations of behavior of types a, b, c, . . . n, in situations A, B, C, . . . N?

What methods are most likely to deter the normal, or potentially aberrant, person from anti-social, or illegal, behavior?

H. *Unintentional personal injury*

How effective are present "negligence" laws in deterring conduct likely to cause unintentional injury to others? What laws might be more effective to accomplish this?

How effective are present "negligence" laws in providing for the needs of persons injured by others? What laws might be more effective in providing for such needs?

I. *Macrolegal techniques of investigation*

What indices will most reliably indicate the social results of laws in categories A, B, C, . . . N?

How can the data to construct these indices be obtained most efficiently?

The contrast between the questions of jurimetrics and the problems of jurisprudence is patent. Perhaps the most striking difference is that the problems of jurisprudence are broad, general, and therefore limited in number, while the questions of jurimetrics are relatively narrow and specific, and so are much more numerous. But this is a superficial distinction. The profound differentiation lies in two facts. First, the problems of jurisprudence are basically meaningless, since they can only be debated but never decided nor even investigated; whereas the questions of jurimetrics are mean-

ingful since they are capable of being investigated, and ultimately answered, even though we may not know the answers now.[88] Second, the problems of jurisprudence are not truly significant problems, since even if they were "solved," in the only sense in which they could be "solved"—by the giving of authoritative definitions, the "solutions" would have no practical consequences in our lives. On the other hand, all of the questions of jurimetrics are genuinely significant, since even a partial or tentative answer to any one is likely to have far-reaching consequences for society and for the individual. In this sense, jurimetrics is eminently "practical" in its approach, as contrasted with the philosophical speculations of jurisprudence.

There are, of course, other differences between the two disciplines, some of which may not be apparent at this time. Certainly one of the most important is that the problems of jurisprudence are formally "static" problems which presuppose the existence of one final authoritative answer, while the questions of jurimetrics are "dynamic" in form in that they allow for changing answers as our knowledge increases. Indeed, in jurimetrics the questions themselves change as the body of knowledge grows, since the problems are constantly reformulated in terms of prior data. Further, it will be noticed that while legal theoreticians, like the traditional economists, have been concerned up to the present time exclusively with microlegal phenomena—theories about the application of law to individuals—jurimetrics takes a broader outlook to include also an inquiry into macrolegal phenomena—the effect of law upon the community. While we can never disregard the problems of the application of law to individuals, experience in many fields indicates that the macrocosmic approach is more likely to be a fruitful one in the early stages of scientific investigation. Even today the science of physics is able to formulate its macroscopic laws with much greater accuracy than its microscopic laws, and—if the Heisenberg principle is correct—there is an absolute limit to the precision of observation and prediction on the submolecular level.

Perhaps the greatest advantage of jurimetrics over jurisprudence, at least from the viewpoint of the public, is that it will establish within the law itself an institutional method for growth and change. It is true that lawyers and jurists are fond of making speeches and writing papers lauding the marvelous vitality of the common law institutions in adapting themselves to social

83. See references cited in note 64 *supra*.

change. It is also true that such praise comes almost exclusively from within the profession and almost always as a defense against the attacks of non-lawyers upon the immobility and inflexibility of the law. Regardless of the forensic facade with which it may be decorated, it is too obvious to admit of controversy that the present method of the law has the effect of making change as slow and as slight as possible, as well as of making law a completely closed system which will admit new knowledge only when it is smuggled in disguised as a "precedent." As in Jhering's juristic heaven, new facts and ideas can gain admission to the house of law today only by smashing their heads through the solid walls. Jurimetrics promises to cut windows in the house of law, so that those inside can see out, and to cut doors, so that those outside can get in. Significantly, jurimetrics is oriented neither to change nor permanence as such. It seeks knowledge, and is prepared to retain, discard or modify principles as the data may, in any case, demand. It seems likely that this approach may at last furnish a satisfactory resolution of the law's eternal paradox that rules which are too inflexible for social growth are still too uncertain for individual security.

It must not be imagined that jurimetrics promises any panaceas. The story of man's progress is full of nostrums, but devoid of panaceas, and there is no reason to think that we may discover one now. Jurimetrics promises no more than an opportunity for law to move forward along the same rocky road that all the other disciplines have already travelled. It is not an easy nor an inviting road (except for those hardy souls who enjoy pioneering), but the grim and inescapable fact is that there is no other road running in the same direction. There are many side-roads, many well advertised cure-alls on the market: appoint all judges; elect all judges; select better judges, however you do it; let juries decide everything; abolish all juries; let panels of experts decide all lawsuits; submit all laws to a popular referendum; call off elections and turn the government over to the engineers. These are just a few of the nortrums; but they all have one thing in common—they all relate to the method of choosing the men who are to exercise power. Once selected, these officials (or the public) would be faced with the same problems confronting the men in power today. There is no reason to think that those in power would behave differently because of a change in the method of their selection.

It is merely tautological to say that if we select better men for

judges and legislators we will have better courts and legislatures. There can be no argument about the proposition that we should get the best men we possibly can for public office. But this gives us no hint as to how we may discriminate the well from the poorly qualified. Furthermore, there is not a scintilla of evidence that it would be possible, over any long period of time, to secure public officials of a greater average competence than those we have been getting, or, that if we could, the more competent officials could achieve substantially better results with our present laws and legal system.

As astute an observer as Judge Frank has intimated that the way to improve the administration of law is to have more judges like Justice Holmes.[84] Although based on a brilliant analysis, the suggestion is almost puerile in its naivete. It is equivalent to saying that science would progress faster if there were more scientists of the caliber of Newton and Einstein. Perhaps if all men were truly wise there would be no need for government at all—such speculation is completely idle. Any useful social theory must be predicated on the proposition that all men are limited in wisdom, and most men are *very* limited. Without unduly flattering those now in office, it is submitted that, taken on a broad average, American public officials represent a level of competence and honesty about as much above the common average as we can reasonably hope to maintain over any long period of time within the foreseeable future. It follows that if we are to make any important advance in the business of government we must find new methods and techniques of making and administering law. When our government officials have new tools with which to work we may expect them to achieve some real improvement in results; until then, the cry for better men will remain a pious, but ultimately futile, exhortation.

However, this conclusion is no extenuation of the backwardness of the bar. Lack of tools may be a good defense to a charge of incompetence, but not of indifference. There is a widespread dissatisfaction with our system of laws, and even more, of lawyers. The shortcomings of the legal system can hardly be denied, nor the responsibility of the profession for them escaped. In the face of this, the proposals of the bar associations to raise large sums of money for a program of "public relations" are inane. Advertis-

84. Judge Frank does not make this conclusion explicit, but it seems to be the obvious inference. Jerome Frank, Law and the Modern Mind 253 *et seq.* (1930).

ing is no substitute for research.[85] Whether the lawyers like it or not, knowledge will eventually encroach upon ignorance and research replace speculation as a basis for law. If the legal profession wants to retain its position as the nexus of the social system, it must develop techniques adapted to the modern problems of that system, and it must begin at once. If it does not do this, most surely it will be replaced in function by other more competent groups. In fact, the process has already begun. Those more competent to use the statistical tools of modern economics are beginning to take over the fields of taxation and rate-making; those more competent with the tools of psychology are threatening to take over the fields of delinquency and domestic relations. The large field of industrial risks and workmen's compensation is largely lost to the legal profession because of its refusal to abandon traditional common law ideas. Patent law has become a specialty requiring considerable engineering training in addition to the normal legal education, and therefore is closed to most lawyers. Numerous other divisions of law are beginning to develop in the same way. Neither private nor public wailing will halt this trend. Unless the lawyers acquire new skills they will become mere clerks and scriveners. In history's tomorrow, the possession of merely forensic skill will not even be considered a professional accomplishment. Advertising can no more maintain the prestige of antique abilities and outmoded learning than it can make a basic industry out of buggy-whip manufacturing in an automotive age.

The basic lesson which lawyers must learn, as the scientist William Vogt has recently pointed out, is that *"we need to know what we are doing."*[86] There may have been a time when righteousness and good intentions were a sufficient guide to proper conduct. If so, that time is long since past. It requires not only good intentions but a great deal of knowledge for man to orient himself amid the complexities of the modern world. To gain knowledge requires constant inquiry. The price of progress is eternal change; the price of wisdom is eternal doubt. These may seem like high prices, but they are no greater than they have been in the past, and always before there have been those who were willing to pay the price for the privilege of contributing to mankind's knowledge

85. Needless to say, the term "research" is here used in its scientific sense, and what is carelessly called "legal research" by the average lawyer has no more relation to it than numerology has to statistics.

86. William Vogt, Road to Survival 141 (1948).

and progress. If the legal profession is willing to abandon the comfortable closed room of jurisprudence and philosophical speculation for the rocky open road of jurimetrics and scientific investigation, then it will deserve and get the respect of all men. If not, then it will deserve, and ultimately get assignment to the same limbo that holds the alchemists and necromancers and other practitioners of man's forgotten superstitions.

More important than the status of any group, however, is the destiny of society. If jurimetrics were no more than a means of maintaining or restoring the position and prestige of the bar, then it would be of only professional interest and parochial importance. But it is much more than that. It is, in sum, the doctrine that the methods of scientific inquiry should be extended to every phase of human activity which is of concern to society. It is based upon the premise that democracy includes the right of citizens to be informed about those matters which they are ultimately supposed to control through their choice of officials, and upon the conclusion that reliable information has been and can be obtained only by free and competitive inquiry with the methods of science. As science itself has contributed to the growth of freedom, and, in turn, requires freedom in order to flourish, so will jurimetrics grow out of democracy yet strengthen and broaden democracy as it grows. Ignorance is the ally of tyranny, for despotisms great and small are authoritarian in that they coerce belief in order to compel obedience. Knowledge and free inquiry are the basis of democracy, since free men can be brought into agreement only by persuasion, and this depends upon demonstrations which satisfy the contemporary tests for truth. Ours is a rational age believing in pragmatic tests; it will not much longer be content to take speculative answers based on ancient authority to its most vital questions.

There will always be those who will scoff at the idea that law can be put on a rational basis as visionary. Let us admit that this proposal is improbable. The most that can be said is that it is just as improbable as the possibility that the weak and stupid creature we call man will survive much longer on an insignificant speck of dust whirling madly about in the finite but unbounded reaches of a vast and expanding universe. It is just exactly as improbable as that, for it is the indispensable condition of such survival.