SCIENTIFIC METHOD IN THE APPLICATION OF LAW*

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I

It has been twenty years now since Dean Pound pointed out how inadequately the legal machinery performed the work of the law, and how the general attitude of the public toward law reflected that failure by a decrease in respect for law and for law enforcing agencies. The past decade has witnessed a concerted effort on the part of the legal profession to improve the efficiency of the administration of justice through revisions of codes of procedure and rules of practice. Judicial Councils have been formed, self-governing bars have been advocated, the rule-making power for courts has been sought and obtained in some jurisdictions, and the bar generally has awakened to the need for procedural reform, with a result that already marked improvement is to be noted and movements are afoot to still further perfect the functioning of the administrative equipment which our system affords.

Again, there are the tremendous projects now under way for the systematizing and restating of the legal materials which constitute our jurisprudence. Vast sums have been made available and are being expended to unify our law and mold it into a usable and coherent body. The work of the American Law Institute gives indications of producing results comparable only to those of the most outstanding compilation and reorganization programs of legal history.

We are witnessing tremendous strides in adjusting our law, in certain notable phases, to produce results of certain gratifying uniformity throughout the several jurisdictions of the country. The work of the various commissions on uniform state laws and the results obtained under the uniform sales act and the negotiable instruments act bear witness to the convenience and desirability of these achievements. Alongside of these movements, there has emerged a certain trend toward a definite philosophy of law which has actually produced a new era in other branches of law. The socializing influence of the philosophical viewpoints of legislator and judge, as well as scholar and theorist, have had revolutionary effects in the fields of torts and constitutional law. It is only necessary to refer to the growth of such ideas as the doctrine of reasonable or "natural" user, the oscillation in the application of the rule in Rylands v. Fletcher, the tendency to place liability for damage where it can be most widely distributed as in the case of liability of manufacturer to consumer for injuries resulting from the use of machinery, workmen's compensation acts and employer's liability laws, to see

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*The substance of this paper was presented to the North Dakota Bar Association in an address delivered at Grand Forks, September 8, 1927.

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the effect of this philosophy in the law of torts. Perhaps even more significant, however, are such decisions as those which uphold hours of labor legislation, service letter acts, regulation of wage payment acts, sterilization of mental defectives acts, zoning ordinances, and minimum wage laws prior to Adkins v. Children's Hospital.

But in spite of these tendencies and achievements, it cannot be denied that the attitude of the lay public has been intensified in the position of which Dean Pound complained several years ago. The moral stigma attached to law violation has been, in an astonishing measure, eradicated. Respect for law and for courts of justice seems waning rather than increasing. As an agency for social control, the law is apparently more inadequate than ever before in our history. No one is satisfied with law unless it is the lawyer. The public attitude has, of course, a tendency to perpetuate itself by a process of intra-action. Press accounts of crime and law violation, as well as flippant journalistic attitudes toward courts and legislatures have their effect upon the social mind to accentuate general disrespect for those agencies. Jurists and publicists have remonstrated vigorously but the realistic observer is convinced that such conditions are increasing both in prevalence and in intensity.

But there is, about this, little mystery. In spite of the reform movements and progressive trends in law, there are yet defective spots left untouched. At the beginning of the present era of industrial, economic and social expansion, it was apparent to many that procedural reform must be accompanied by the substantive development of the law. It had to keep pace with the times. The processes of growth and re-adjustment which are taking place in the legal order at present meet those demands only in part. The program to secure uniformity in some branches of the law has touched an acute economic problem and has met, to a wide extent, the demands arising out of increased transportation facilities and general commercial and industrial development. The re-organization of our methods of procedure is alleviating the congestion of judicial business and helping to remove the general dissatisfaction bound to result from tedious delays and inefficient handling of litigation. The great work of the American Law Institute, after all, is but an effort to put in convenient and available form the dogmas of the law, for it concerns itself exclusively with the logical consistency of those dogmas. The new social philosophy indicates the growth of sociological theory and

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*Prudential Insurance Co. v. Cheek, 259 U. S. 530, 66 L. Ed. 1044, 42 Sup. Ct. 516 (1922).*


*Cf. opinion of Mr. Justice Holmes in Buck v. Bell, 47 Sup. Ct. 584 (1927).*

*See Baker, Constitutionality of Zoning Ordinances, 20 Ill. L. Rev. 213 (1925).*


*Adkins v. Children's Hospital, 261 U. S. 525, 67 L. Ed. 785, 43 Sup. Ct. 394 (1923).*

its effect upon those who make and administer law, but it is exactly here that the limitations of the present legal order and the equipment of that order appear obvious. The trouble lies, where it is so often to be found, in the difficulties encountered in the application of theories which the best legal minds of the age do not hesitate to espouse, and it is precisely this difficulty that lends such plausible speciousness to the skepticism of those who resist any effort to impose philosophical idealism into legal practice. There is great weight in the objection that theory which does not work and cannot be applied is useless.

The problem, then, is in the application of new and twentieth century legal theory to the materials with which the law must deal. Here it is that law has fallen down, and here it is that a share of the popular unrest and dissatisfaction with courts and law has its roots. In short, except in certain exceptional branches where ingenuity has devised partial methods of correcting this defect, law is not producing desirable results and, on the whole, is far behind progress made in every other field of knowledge. Law is not scientific, in any sense, within the modern meaning of the term and in the light of theories which juristic philosophy itself has developed. It is not scientific because its method is not the method of science.

In the editorial column of a current technical journal, it is flaunted at the legal profession that "the lawyer is not even recognized as a scientist." This is not only a challenge to the lawyer to take stock of his methods, but it indicates the gulf that has already separated the law from disciplines with which it should be working hand in hand. If as Pearson has put it, the scientific method is one and the same in all branches, and that method is the method "of all logically trained minds," it must be obvious that jurists must not confine their logic to the technique of developing the dogmas of the law, but must employ it as well in the application of those dogmas, if law is to keep abreast of other sciences which, to a large extent, deal with the same materials.

Lawyers have begun to recognize the dependence which law must eventually place upon the social and allied sciences. We are all entrenched in the philosophic position that law, after all, is primarily but one of many agencies for social control and that its ends must be sought in the welfare of the social group. Law is the product of a civilization, and the social order must be the mistress which the law seeks to serve. We believe that our society can be molded and developed to conform to our political and social ideals. Neither social nor individual fatalism is popular among scientists. In fact, up to date sociological theories are at the opposite pole from fatalism. As lawyers, we have faith that law can be consciously employed to assist in the realization of desired social ends. We cannot, then, fail to recognize and to formulate those ends and employ machinery and methods which are calculated to intelligently engineer the attainment of them. In doing this, there must be no failure to take salutary advantage of, and to actively create opportunities for utilizing the discoveries made by researches in other fields.

In the effort to adequately protect the conflicting social interests involved whenever these conflicts come within the domain of effective

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22 Jr. of Ab. & Soc. Psychology 1 (1927).
legal action, obviously the ultimate problem raised is how to accurately evaluate the various social interests and ends involved. The constant issues raised in criminal law, the problems presented in legislation, and in preventative justice, as well as in torts and constitutional law constantly demand the performance of this process by courts and legislatures. This is obviously work which demands a science with principles and effective methods. Dean Pound has declared, with reference to legislation:

"How to . . . take account of the legal background on which the courts will project it when they come to apply it, how to insure that all the interests involved have been, as it were, inventoried and valued and delimited so as to secure the most that may be with the least friction and the least waste, is a problem of social engineering calling for as great an equipment of pure science and as much creative resource as any problem of electrical or mechanical engineering that has been solved in whole or in part through the research carried on in our highly endowed laboratories."15

It has been a great many years since Mr. Justice Holmes voiced the sentiment that ultimately science must prevail in law, as elsewhere. "I have in mind," he said, "an ultimate dependence upon science because it is finally for science to determine, so far as it can, the relative worth of our different social ends, and, as I have tried to hint, it is our estimate of the proportion between these, now often blind and unconscious, that leads us to insist upon and to enlarge the sphere of one principle and to allow another gradually to dwindle into atrophy."16

But just what have the social and allied sciences to offer the law and of what significance is their work to the immediate application of law? Again, is it possible, with the legal materials which we have at hand for law to avail itself of work done in these fields? These are the practical questions which seduce the interest of those whose work and experience bring them into actual contact with the functioning of the legal system. It is the answer, in part, to such questions that I shall venture to direct your attention at this time.

II

In the light of modern juristic doctrines, no lawyer will deny that the phenomena with which the law and sociology deal are to a great extent the same. The relationship between the two is therefore obvious. The sociologist, in examining the effects of social institutions upon the individual is vitally interested in the law, as a mechanism controlling human conduct. The law, looking toward the attainment of social ends, cannot afford to ignore the findings of the sociologist. But in the light of recent research sociology has claimed for its own many phases of human knowledge which we had grown accustomed to think of as belonging exclusively to other sciences. Thus the relationship of sociology and biology has given rise to an overlapping of the two sciences, a sort of social biology, which manifests itself in various directions. A great deal of dispute and a corresponding divergence of theories has quite naturally resulted among those directly concerned in this work. But the fact of disagreement and the conflict of opposing theories in no way indicates that no progress has been made. On the contrary, it is only

15Speech before the Chicago Bar Association, 1926.
16Law in Science—Science in Law, COLLECTED PAPERS, 210, 242 (1920).
by such conflicts, with their constant checking and rechecking of results that measurable progress has ever been made. Science never becomes so sterile as when scientists are in complete agreement.

The newer schools of sociology seem to have definitely abandoned older notions of biologic determinism and are insisting upon a technique differing from that of biology, because, as they insist, of the fundamentally different processes studied. Nevertheless those who go farthest in this direction readily concede the inevitability of taking basic biologic factors into account in explaining the cultural processes which result in sociological phenomena.\(^\text{17}\) Aside from the relationship of biology to sociology with respect to its general discipline, one phase of the overlapping has developed into what may be regarded as a distinct science, and one which has an especially profound significance to the lawyer. I refer to the science of eugenics, drawing both from sociological and genetical knowledge.

The importance of this branch of science to the legal profession cannot be better illustrated than by the ridiculousness of a situation which exists in North Dakota. During the past session of the legislature, some tinkering was done with our sterilization of mental defectives act\(^\text{18}\) which has been, for a dozen years, a dead letter on our statute books.\(^\text{19}\) Before the examining board which is provided for in the act shall make a recommendation for an operation, it shall "examine into the innate traits, the mental and physical conditions, the personal records and the family traits and history of all persons reported." The trained biologist must smile at the naiveté of our legislators. And yet, here is significant indication that the lawmakers must have felt the futility of such legislation unless it were administered in a scientific manner.

The truth is it is a complete impossibility to intelligently comply with the directions in the statute for the sufficient reason that there are no records of family traits to inquire into, no family histories to examine, and no data from which the delinquent's innate traits can be determined. Only by a systematic and scientific process of compiling eugenic materials could this law possibly be effectively administered. An accurate genealogical background is quite obviously necessary to the eugenic study of a family. The pedigree must be studied carefully, together with vast quantities of eugenic data and statistics. Without such study, no sound basis for prediction and consequently no rational administration of this law can be attained.

Now it is by no means certain that such families as the Kallikaks and the Jukeses prove as much as scientists, at one time thought that they proved. Modern discoveries and experiments in behavioristic psychology and in psychiatry have tended to modify premature conclusions. Yet there is no dispute as to the proposition that the story that eugenics and biology tell is of vital significance to sociology and to psychology so far as the physical equipment of the individual affects those sciences and so far as the physical improvement of the race is concerned.\(^\text{20}\)

\(^{17}\)Cf. Sutherland, The Biological and Sociological Processes, 32 Am. Jr. of Sociology, 58 (1926).

\(^{18}\)Laws 1927, ch. 263; Session Laws (Pop. Ed.) 433 ff.

\(^{19}\)See Cooley, Some Phases of 1927 Legislation in North Dakota, 1 Dak. L. Rev. 65 (1927).

\(^{20}\)How heavily the behaviorists lean on genetics must compensate for their rejection of the thesis of the biologic determinists. Cf. Watson, Behaviorism, 82-83 (1925).
There is not much need to remind a group of lawyers how much the law depends upon economics. The direct contacts of the two are so common as to almost daily come to the attention of the practitioner in one way or another. Lawyers sometimes get the idea that economics is indeed the entire basis of the law. The necessity for the application of scientific economic theory is all well enough known and appreciated by lawyers who have come in contact with public utilities and their rate-making activities. But there is also the equally important, if indirect, contact of economics and the law, through sociological processes. The sociologist has realized what his science has in common with economics, and we are witnessing what gives promise of the development of a science within a science in the interest displayed in human ecology which concerns itself with the study of the spatial groupings of persons and of human institutions. Here again is a field which will, when more fully exploited, have much of interest for the law and the lawyer.

What psychology and psychiatry has done for the law is not easy to say for the reason that lawyers and those who administer law have not yet learned how to make proper use of psychological knowledge. When this has been mastered, it will unquestionably appear that what has been here done from criminal law is inestimable. Post-war tests have convinced us that the proportion of delinquents which can be classed as feebleminded is comparatively small, contrary to ideas which prevailed a dozen years ago. Recent researches with children have disclosed the fact that defective mentality is relatively small among juvenile delinquents. In fact it has been found that of a given number of delinquent children, the mental age of those who were stealers was significantly higher than those who were not known to steal. Investigations at certain prisons have demonstrated the striking fact that in many cases the average mentality of the criminal was considerably higher than that of the guards in whose charge he was placed. Enough, at least, has been proven to valuably recheck older notions and to explode the idea that criminality could be eliminated by the extermination of feeblemindedness and low grade intelligence.

It cannot be inferred, however, that abnormal mentality has no relation to crime. Feeblemindedness is itself a curse to society from points of view other than the criminal, and while feeblemindedness may not be the chief factor in crime, still when coupled with nervous disorders, it produces results which bear directly upon crime. Recent clinical studies in various states indicate a large proportion of mental and nervous abnormalities among the criminal class which cannot be overlooked. The work of Dr. Healy in Chicago, Dr. Glueck in Sing

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37Note the title of a current article, Economics, the Basis of Law, M. L. Litchman, 61 AM. L. REV. 357 (1927).
39See Murchison, Criminal Intelligence, Part I (1926); see also McKenna, Are Inherited Mental or Emotional Defects the Principal Cause of Criminal Delinquency? 1 DAK. L. REV. 2 (Issue no. II, 1927); Cf. 15 MEMOIRS NAT. ACAD. OF SCIENCES, 800 (1921).
40See Riddle, Stealing as a Form of Aggressive Behavior, 22 JR. OF AB & SOC. PSYCHOLOGY 40, 43-44 (1927).
41Ibid, tables pp. 48, 49, and summary pp. 50, 51.
42See his, The Individual Delinquent (1915).
Sing,27 Dr. Jacoby at the Naval Prison at Portsmouth,28 the New York State Commission of Prisons investigation,29 and studies by the National Committee for Mental Hygiene30 have all indicated that the biologist and psychiatrist together may hold an important index to a happy solution of the complicated problem.

The older psychology, committed to the theory that in the chromosomes of the fertilized egg are to be found the determiners which eventually control the responses of the individual to certain stimuli, has definitely given way to a new ground which has made it possible to abandon the notion of "instincts" for the newer theses of the behaviorists. Instincts, as a concept, has not been wholly discarded. It is still certainly the subject of much controversy,31 but it is just as certain that the theory of neural heredity and the transmission, through the germ-plasm of the organism, of "preformed bonds" which must result in definite behavior under certain conditions, has received serious modifications since the days of Herbert Spencer and Darwin.

Recent literature has pointed out that the older "nativeist" psychologists had assumed positions which were not maintained by biologists and embryologists themselves.32 The new school of behaviorists, headed in America by Watson, assume the basic thesis that practically all reactions of individuals to the stimuli found in our social relationships are determined by acquired or learned neural habits rather than by instincts inherited through the germ-plasm.33

Behavioristic psychology has appealed strongly to scientists because it has directed psychology away from older shibboleths of consciousness and instincts, and has objectified the science by insisting upon the study of acts and conduct, as a whole, without the older over emphasis upon the central nervous system. It is more interested in external conduct directly than in psychic states. As the philosopher will put it, its chief advantage, as a science, lies in its refusal to speculate through the use of metaphysical concepts, and thus its avoidance of the epistemological curse.34 It may be too soon to appraise the results of behaviorism, but we cannot but commend the methods of investigation which it employs, nor can we fail to concede that such conclusions as it ultimately may establish will be based upon demonstrable evidence which, like that of the exact sciences which it emulates, will "appeal to all logically trained minds."

27See Parsons, Crime and the Criminal, 115 (1926); see Glueck, A Study of 608 Admissions to Sing Sing Prison, 2 Mental Hygiene Jan. 1918.
29See Mental Disease and Delinquency, Reprint by Com. for Mental Hygiene. See Parsons, supra p. 120.
30See Parsons, supra, 122 ff.
31For a few references, see Woodworth, A Justification of the Concept of Instinct, 22 Jr. of Ab. & Soc. Psychology 3 (1927); Kuo, A Psychology Without Heredity, 31 Psychological Review, 427 (1924); Kantor, The Problem of Instincts and Its Relation to Social Psychology, 18 Jr. of Ab. & Soc. Psychology, 50 (1923). See also references in Heredity and Environment; Are They Antithetical? by Carmichael, 20 Jr. of Ab. & Soc. Psychology 245, 247, n. 10 (1925).
32See Carmichael, supra, 250 ff.
33Watson, Behaviorism, 77 ff.
The effect which such study will have upon sociology and law can be readily detected from some of the premises which it has set up. If men decide that the human organism should behave in such and such a way, they must arrange situations of such and such kinds. It is the business of behavioristic psychology to be able to predict and to control human activity. It has as its objective to be able, once given the stimulus, to predict the response, or from the given reaction, to derive the stimulus that called out such a reaction. At present when society wants to get rid of certain reactions, or when it attempts to substitute one reaction for another, it goes about it blindly with no scientific or rational basis for predicting the results. Behaviorism attacks the problem of furnishing the grounds for such prediction.

While the extreme versions of behaviorism are avoided by many of the more conservative psychologists, no less a scholar than Ellwood has rejected the mysticism of the "instinct" and accords to man's inheritance merely "instinctive tendencies" to reactions which will be realized in actual conduct according to the social conditioning to which he is subjected, which is fundamentally, a behavioristic ground. He, like Ward, looks forward to the scientific guidance of the processes of social transitions and transformations. Eventually, and not far distant, the position must be taken in which the basic truths of heredity and environment will not be regarded as opposite poles from which to essay the study of psychological phenomena. Already in the literature, this idea is demanding attention.

Psychopathology and psychiatry are making remarkable contributions to the totality of knowledge which the law should utilize. Vast quantities of statistics are being compiled in the effort to study the effect upon delinquency of emotional instability and other psychopathic conditions. It is now possible to interpret pathological reactions in terms of thought processes which are lucid and familiar to the ordinary psychologist and to work out methods of treatment which are both simple and effective. It must be remembered that the methods employed here also are those of the exact scientists. These newer schools all have the advantage of demonstrating their findings by observations in concrete cases. There can be but one result, and that result is observable progress. Their technique is being perfected and older methods of guess work have been

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38See Watson, Behaviorism, 7 (1925).
39Watson, ibid. 11.
40Watson, ibid. 16.
41See his Psychology of Human Society, 278 (1925).
42See Barnes, Sanity in Social Psychology, 11 Jr. of Applied Sociology, 240, 244 (1927).
43See Carmichael, supra.
44See eg. Slawson, Psychoneurotic Responses of Delinquent Boys, 20 Jr. of Ab. & Soc. Psychology 261 (1927). The relation of Crime and constitutional psychopathy is recognized. What is designated as constitutional psychopathic inferiority is believed to be an important factor in delinquency. See Orbison, 10 Jr. of Delinquency 428 (1926).
45See the remarkable analysis of the "hand-biter", a sophomore at the University of North Carolina, as described by Bagby, A Compulsion and Its Motivation, 22 Jr. of Ab. & Soc. Psychology 8 (1927).
46Note, for example, the extensive and inclusive program for the study of feeble-mindedness formulated by Johnstone, Director of the Training School at Vineland, N. J., including experts in embryology, biochemistry, endocrinology, pathology, clinical psychology, and anthropology and ethnology. Johnstone, A Research Program for the Study of Feeble-Mindedness, 20 Jr. of Ab. & Soc. Psychology 177 (1925).
relegated to the discard. The methods employed are the best advocates of this type of study. Lawyers can no longer afford to ignore these fields. Rational men cannot refuse to believe in demonstrable facts. Methods of research in these sciences establish for them a res ipsa loquitur situation. Indeed, the evidence is such as not merely to warrant a reasonable belief in the ultimate findings established, but to compel such belief by all logically trained minds. Even the prejudices of religion cannot stem the sweeping tide of science. It is not surprising to find Jesuit priests and eminent protestants alike espousing and advocating the newer dynamic psychology and neurology. Can lawyers refuse to recognize and utilize it?

Social psychology is fast developing into a distinct branch of science in itself. Older notions upon which were based certain schools of psychology, such as Tard's idea of imitation and Ross's theory of suggestion, although undoubtedly useful concepts, have not been able to satisfactorily explain the processes by which human minds have reacted to form social institutions and how they have, in turn, reacted to these institutions. Eloquent pleas are being voiced for the complete reorganization of methods into a definite psychology of social institutions, all of which again must compel the attention of those interested in the progress of the law.

In political behavior, too, studies of clear import can be, and are being made. Already it has been demonstrated how relatively unimportant are rational factors when compared with habit, tradition and other psychological elements in political conduct. Especially is this true in struggles between groups which are fundamentally class conflicts. Thus, it is shown how futile must be any scheme which presupposes the possibility of the harmonious working out of such problems as that of capital and labor, through the cooperation of the two classes.

Criminologists who have approached their problems from the sociological point of view have not been slow to avail themselves of these discoveries. During the past year a great deal of genuinely superior and sound literature has appeared in this field, written not by idle theorists, sentimentalists and professional reformers, but by men endowed with a rich scientific insight and, in many cases, supported by years of observation and experience in direct contact with the criminal classes.

All modern criminologists who have investigated the subject with any degree of thoroughness from the sociological viewpoint are agreed that the horrible idea of vengeance, out of which our criminal jurisprudence grew, resting upon mediaeval notions of theology, must go. Intelligent scholars have demanded that our whole concept of "punishment" should be abandoned as a relic of the dark ages. On the other hand the

"Eg. Barrett, The New Psychology: How It Aids and Interests (1925); Man: His Making and Unmaking (1925).
See Judd, Psychology of Social Institutions, 20 JR. OF AB. & SOC. PSYCHOLOGY, 151 (1925); cf. also Dewey, Need for Social Psychology, Psychological Review 266 (1917).
See Eldridge, Political Action (1924).
Among the best may be mentioned Gillin, Criminology and Penology (1926); Stutsman, Curing the Criminal (1926); Barnes The Repression of Crime (1926); Parsons, Crime and the Criminal (1926).
Cf. Gillin, supra, 832; Darrow, Crime, Its Cause and Treatment, ch. 36, 275 (1922); Barnes, supra, 298 ff.; Parsons, supra, ch. XIV; Watson, Behaviorism, 144 (1925).
charge that modern, up-to-date criminology and penology advocates a "coddling" attitude toward the criminal is grossly untrue and without foundation. It is most frequently made by those who criticize theories with which they are not familiar. Little of the serious literature on this subject could be characterized as sentimental, unless the ambition to relieve society of the criminal by removing his criminality, rather than inflicting corporal punishment, can be termed sentimental. All proponents of the new criminology advocate a scientific treatment of the subject and the subjection of the criminal to constant observation and study. Science has seldom been accused of sentimentalism in its methods. Usually its chief conflict is with the sentimentalists. Work is freely advocated for the criminal, sometimes a more strenuous program in this respect than most of us would accord the most vicious felon. Indeterminate sentences, measured by the success of the remaking or reconditioning process, are recommended, the sentence to lapse into a life sentence where the criminal is incurable or fails utterly to respond to the socializing circumstances into which he is placed, regardless of the exact nature and result of the crime. A scientific and rational program of crime prevention is urged by all experts in this field.

In its attitude toward crime, perhaps, more than anywhere else the law has been constantly guilty of refusing to take cognizance of scientific materials. As Clarence Darrow has concluded, after a life full of experience with criminals, "if doctors and scientists had been no wiser than lawyers, judges, legislatures and the public, the world would still be punishing imbeciles, the insane, the inferior and the sick; and treating human ailments with incantations, witchcraft, force and magic. We should still be driving devils out of the sick and into the swine."

It is clear that prisons must become clinics; prison farms must be turned into laboratories; those in charge must be taught to tabulate and preserve such data and statistics as will be necessary for trained men to examine and to base conclusions upon. Reformatories and jails must yield to institutions for the examination, differentiation, segregation, treatment or extermination of the anti-social and the unfit. Surely the older program of treating the criminal has utterly failed. Can there be any sound reason, then, why science should not have its opportunity here to solve the problem as it has been permitted to solve so many problems elsewhere? Are there grounds to justify an intelligent profession in clinging to a tradition and to an outgrown order which has proven so inadequate when materials for reasonable progress are available?

The integration of the different social sciences and some of the allied exact sciences into a formidable array of scholars, specialists and research workers is swiftly taking place. The lawyer alone, among those most directly concerned, is conspicuously tardy to take active part in the work, and more loath still to apply the results. The American Association for the Advancement of Science brings together men interested in different fields to map out common ground for cooperation. The Social Science Research Council, in connection with which the law is happily represented by such men as Felix Frankfurter and Learned Hand, has

49Watson, Behaviorism, 146.
50Darrow, Crime, Its Cause and Treatment, 276 (1922).
51Cf. Barnes, supra, 375 ff.
established a series of research fellowships through funds received for such purpose from the Laura Spellman Rockefeller Memorial, and has undertaken a definite program of sociological investigation.\(^1\)

A movement is afoot to secure the establishment of a standardized statistical service which gives indication of becoming a reality. The purpose of this service will be (1) to present a sum total of social efforts as expressed through all public and private social work, institutions and agencies; (2) to enable social scientists to observe the prevailing extent of social maladjustments and current changes; (3) to furnish statistical guages to determine the effectiveness of the varied efforts at social amelioration and of attempts at the prevention of conditions causing social disorders; (4) to provide "indicators" through which approaching social maladjustments in society at large can be predicted with a fair degree of accuracy.\(^2\) The complete standardization of social statistical matter is yet to be achieved, but the movement is under way and in time must be realized, with inestimable advantages to those whose efforts are directed to the scientific and intelligent control of social processes.

The peculiar job for the lawyer is to work out some effective method of utilizing this material and subjecting it to the service of the law. The law must not only coordinate and apply this knowledge, but it must keep in constant contact with these kindred fields to take quick and immediate advantage of what further progress is made. There must be some scientific method of correlating and adjusting all this matter so that it might be brought to bear upon legal problems as the lawyer meets them and directed into the proper legal channels in an orderly way.

III

The lawyer knows well enough that whatever progress is to be made in the administration and application of law must come through the orderly changes and growth that comes from within the institution itself. The profession has always regarded without seriousness sweeping and revolutionary programs suggested by the layman in his enthusiasm for attaining results which he has reason to believe desirable, but with vague notions as to processes to attain them. We know that criminal justice is not likely to be reformed by an immediate elimination of the jury system, or by a wholesale discarding of rules of evidence, or by a complete substitution of specialists and scientists for judges and courts. We further have reason to believe that it is unlikely that legislatures will suddenly turn over to psychologists the entire treatment and control of the delinquent members of society. We are pretty sure that it will be some time before sociologists will constitute a majority in both houses of the General Assembly. On the civil side, we are confident that courts will continue to feel it their duty to impose upon the public their notion of reasonableness regarding statutes which threaten liberty and property without due process of law and acts which curtail, to some extent, the liberty of contract of certain economic groups. It is not to be expected that in the very near future the consumer and the public utility will cease to submit their disputes to the judgment of a court of law as to the economic fairness in existing or proposed rates for certain commodities.

\(^1\)See HANDBOOK, ASS. OF AM. LAW SCHOOLS, 98 ff. (1926).
\(^2\)Frankel, Standardization of Social Statistics, 5 SOCIAL FORCES, 243 (1926).
Whatever immediate use is to be made of science and the information and knowledge which the scientist is compiling must be made available to the processes of the law through existing and familiar common law doctrines. It has been demonstrated that this is not a possibility so remote that it does not justify thoughtful consideration. It is to be remembered that nineteen years ago the Supreme Court of the United States, in a memorable decision, announced that it would "take judicial cognizance of all matters of general knowledge." There is nothing particularly startling in this enunciation of a time honored legal doctrine, but when it is made, as here, to include some several hundred pages of statistical and sociological data, it takes on a new significance. The sociological brief, as introduced by now Mr. Justice Brandeis, is but an old method of making available to courts new and scientific facts. It can be presumed that the "general knowledge" includes all matters which are scientifically demonstrable. Thus the theory of judicial notice may be employed to present to a judge matters that are peculiarly available to the scientist only without doing violence to any of the traditional and cherished conceptions of our law. In other words, a court may be advised of matters which, were he a scientist, would be easily within his grasp and probably within his knowledge.

But the statistical brief has limitations. It has not proven to be the great boon that some had hoped for the accurate solution of socio-legal problems. Chief among the drawbacks is the fact that the parties to the litigation are doing the advising. Science is employed for partisan ends, and thus loses much of its value. It is no longer science. It is thus, not strange that in subsequent cases involving the constitutionality of social legislation both sides to the controversy have employed this device to apparently excellent advantage. In other words, there is a strong tendency to reduce the value and accuracy of this type of information to that of expert testimony, which always elicits a skeptical shrug from the lawyer.

Nevertheless the defect here is not with the scientific value of technical information, nor yet with the theory of judicial notice, but with the unscientific manner of employing scientific knowledge. Such knowledge is of the utmost value to the courts if some method were devised of presenting the same to them.

The second doctrine, and necessary compliment to the theory of judicial notice which contains tremendous possibilities for the improved application of scientific materials to legal controversies, is the control that the judge exercises over the jury. It is elementary that a new trial may be granted, at the discretion of the court, when the verdict is contrary to the weight of evidence, as reasonable men must weigh that evidence. Verdicts may even be directed when, in view of the facts of the case, the court would be obligated to grant a new trial in case of an adverse verdict. The jury will not be permitted to return an unreasonable verdict, in the light of facts and evidence available to it. All matters of judicial notice may be considered as constituent parts of the factual situation to be adjudicated. Thus technical advice to the judge may as well be employed to counteract an obviously incorrect...

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64Muller v. Oregon, 208 U. S. 412, 421 (1908).
65For abstract of this brief, see ibid, 419, n. 1.
66People v. Hutchinson, 9 Fed. (2) 275 (1926); Froling v. Howard, 125 Me. 507, 131 Atl. 308 (1926).
verdict, as to justify a reversal of the findings of the legislature when a statute is under examination respecting its constitutionality. Scientific data and facts which the notorious constitution of the jury would render unavailing, may in such manner be directly brought to bear upon the results of legal controversies.

Even in criminal cases, in spite of our traditional dogmas as to double jeopardy, by simple legislative manipulation, the control of the judge over the jury may correct many of the evils of the jury trial. Notoriously the court, in criminal cases, has been inadequately clothed with power, but under such statutes as those in Massachusetts which legitimatize a verdict of "not guilty, by reason of insanity", it is possible for the court to direct a verdict for defendant and still commit the delinquent to an institution for years or for life. Thus information which would, in many instances be discarded or disregarded by a jury, may be used by the judge to correct or prevent an otherwise erroneous verdict.

The final phase of such a problem is the exact nature of the instrumentality or agency through which this material, so widely scattered and uncoordinated and related to practical legal problems, can reach the courts. Obviously the task of adjusting and correlating the work of the separate sciences so that it may be brought to bear directly to achieve the ends of law must be done by lawyers, with an eye to the specific and technical facilities of the legal system. There is no place where this could be done more expeditiously and more economically than in the State University Law School. There and perhaps there alone conditions are ideal for research and the atmosphere free, for the most part, from political and class pressure.

As to the other fields involved, it must be remembered that the state is already paying salaries to men, in each science, who are presumably skilled and well qualified in the technique of their respective disciplines. Those at the Law School are in close and immediate contact with these men and their laboratories of work. Cooperation is not only possible, but coordinated work is invited by the conditions. These men are engaged in the double task of teaching and conducting and directing researches. Science, as a whole, and the individual himself profit from this work. So does the University, and, it follows, the state. But this latter profit is indirect. Why should not the state demand that it be entitled to the direct and immediate advantage of this time and research, by some regular and systematic direction and organization thereof? In other words, may not the state demand first consideration in the direction which the research work of its scientists and professors shall take?

This could be attained by the creation of a bureau which may be described as a Bureau of Legal and Legislative Research. At the head of this bureau, directing and organizing the work, should be a lawyer, probably a professor in the Law School. A man of broad training and scientific insight, with some reduction of teaching hours, could direct the entire activities of such a board. Members of the bureau should include the heads of the different departments of the University which could lend active assistance. A definite number of hours of research per week

48 GENERAL LAWS, ch. 278, sec. 13.
could be demanded of these men, or their departments, which would in no way interfere with their teaching duties, nor increase the amount of work which they are expected to do under present conditions. Among their number should be included the head of the medical school, the head of the biology department, the head of the psychology department, the heads of the chemistry department, of the physics department, of the sociology department, and of the department of economics. A statistician must also be included as must be some members of the Agricultural College. The time that these men now spend in research, commendable but promiscuous and unrelated to the particular needs of the state and community, could be directed along lines which could be made immediately or ultimately serviceable to the law-making and law administration facilities of the state.

By far sighted and intelligent direction, an immediate program could be instituted which, by organized work could prepare material to have a direct bearing upon present and future problems of law and legislation in this state. Material could be accumulated and data obtained and filed which would always be available to subserve the ends of the legislature and the courts. Studies of comparative legislation could be continually under way and the results of the same observed and evaluated, so that North Dakota might profit by the mistakes and successes of other states as well as from her own experience. The state would have its experts working directly in its service and devoting their entire time and effort to the working out of its local problems and to the acquisition of a scientific foundation for their wise solution.

This bureau could act in an advisory capacity to the legislature and to the courts. In the first capacity, it could certainly render inestimable service in investigating social conditions and making recommendations as to their alleviation. It could work upon the crime problem, treatment of criminals and measures for a systematic preventative program. It could study and assimilate the work of experimenters all over the country, in different institutions, both public and private. In short it could act as a clearing house for all scientific information in the various fields which bear upon legislative problems. Upon the basis of this material, recommendations might be made to the legislature and the science of legislation become, at least in part, a reality.

It is unlikely that legislatures are going to quietly turn over to any committee of college professors the sacred duties which have been entrusted to them. Legislators are far too conscientious for that. But it is not impossible for such a group of scientific men to perform such effective work and render such obviously priceless service to the public as to seduce the respect of legislators, and eventually the confidence of the public generally. As soon as this latter is accomplished, legislatures will weigh long and consider well before utterly disregarding the recommendations of such a bureau.

It is easy to demonstrate that "every beneficent change in legislation comes from a fresh study of social conditions and of social ends, and from some rejection of obsolete law to make room for a rule which fits the facts. One can hardly escape the conviction that a lawyer who has not studied economics and sociology is very apt to become a public enemy." 1960 It has been some years since these words were written by an

1960Henderson, 11 AM. JR. OF SOC. 847 (1906).
intelligent student of social institutions, but their truth is now more obvious than ever.

As to the direct service of such a group to the courts, in brief, it is possible for it to perform the same function that under our present practice is performed by the sociological brief and expert witnesses, with an infinitely wider field in which to function. The bureau could act only in an advisory capacity. Courts could submit hypothetical questions to the director, who, in turn, submits the same to the particular scientist interested. The answer, from available data where possible, or after experiment and investigation, may be returned to the judge together with written memoranda of the reasons therefore and an abstract of the scientific principles underlying those reasons. Where possible, the facts and data can be sent to the court with explanations, permitting him to make his own conclusions from those facts. Intelligent courts will be able to anticipate many such problems before time for a decision. In certain cases specialists can be sent to different venues to conduct examinations or investigations where such can be conducted only there. Especially valuable could be this procedure in criminal trials, for the trial court through competent technical advise and a little legislative latitude can do much to forward the application of the principle of individualized punishment of crimes. The Supreme Court, of course, could have ample time to submit troublesome questions which are apparent upon the record, and await the bureau's answer, in the form of a report or advisory opinion as I have indicated.

Some of the advantages of such a bureau as this must be patent to all. The members of the same are specialists, devoting their entire time to the particular field of knowledge in which they are interested. Such questions as are submitted to them would be attacked in a perfectly objective way, from an unprejudiced and unbiased point of view, in so far as such is humanly possible. These men are working under conditions conducive to producing scientific results, unpolluted by political influence and, to a large extent free from class partisanship. In many problems, submitted by courts hypothetically, the scientist and research man will have little notion of the purpose or application of his work. His findings and advice should be welcomed by the courts, and would, I make bold to predict, be taken into account in an ever increasing degree.

By no means unimportant is the matter of expense entailed at the beginning of such an experiment. It would be comparatively nominal. The personnel of the bureau is already available, in the employ of the state. A slight reduction of teaching hours, particularly for the director, upon whom the heaviest duties would obviously fall, slight expenditures for secretarial and office assistance would be all that would be required to launch the enterprise. Laboratories, libraries, equipment and workers are at hand. Great quantities of valuable material are accumulating. Only the organization and coordination of this work by lawyers and the presentment of the same to our lawmakers, both legislative and judicial, is necessary. No revolutionary or even novel theories or doctrines are needed to make such provisions. But trifling expense is entailed in

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80Cf. Bates. What May Be Done to Forward the Judicial Application of the Principle of Individualization of Punishment, etc., 16 Jr. Cr. L. & Cr. 477 (1926). For the present status of advising courts through scientific tests as to insanity and mental abnormalities, see GLUECK, MENTAL DISORDER AND THE CRIMINAL LAW (1925).
starting a process which has tremendous possibilities for increasing the effectiveness with which courts and legislators may perform their work. The need for some such action is imperative and obvious. There is great profit to be derived, and nothing to lose.

In North Dakota conditions are particularly propitious for such an experiment. The volume of litigation is not so great but that reasonably accurate observation could be made of the comparative value of the work of such a bureau. Over the space of a few years definite conclusions could be drawn, and necessary corrections and adjustments made. The criminal problem in this state is not so acute but that this bureau could, with a limited number of members, give adequate attention to it, although this might not be possible were the volume of criminal cases much larger. The population of the state is not so unwieldy that it would prevent effective administration of any rational preventative program which the bureau might advocate and the legislature adopt.

Further, and quite as important, the state prides itself upon the high standard of its bar and the intelligence of its judiciary. We have no occasion to apologize for or to mistrust our legislature. It undoubtedly strives to cooperate with the bar and to weigh seriously measures championed by it. The state is definitely alligned with the more progressive communities and we take a just pride in our educational institutions. It is in such a jurisdiction that some plan similar to the one I have outlined might be expected a trial. It is not, nor is it intended to be a radical or unique scheme. Similar plans, though perhaps not so inclusive nor yet so concrete, have been suggested by outstanding legal scholars. I have tried to offer a sane, but it is to be hoped effective plan to definitely allign science and the scientific method with law and government, and to utilize, in behalf of society and of the state, those instrumentalities and agencies already at its disposal, but awaiting the work which only the legal profession can perform, to harness them to the specific task of serving their master well. The defects of the plan, perhaps obvious to most of you, may I suggest, could be best remedied by putting the scheme into operation.

61 See address by Dean Henry M. Bates before Nebraska State Bar Association, 1926.