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SCIENCE AND TECHNOLOGY AND THE FUTURE LAW SCHOOL CURRICULUM

BY MARK S. MASSEL*

MANY years ago Professor Lippman, an outstanding agricultural scientist, said that a basic problem which confronts the scientist is the relationship between himself and the philosopher. The total of knowledge is expanding rapidly in scope and depth. As a result, the scientist who formerly covered the entire field of biology had to confine his study to insects, then he narrowed his field to beetles, to black beetles, and finally to the hibernating habits of black beetles. On the other hand, the philosopher who tries to keep in touch with all knowledge cannot absorb all the additions to all fields. Hence, the scientist gets to know more and more about less and less while the philosopher gets to know less and less about more and more. Lippman said that one of his mathematical associates concluded that some day the scientist would come to know everything about nothing, and that the philosopher would come to know nothing about everything. Hence the specialist-generalist dichotomy achieves increasing importance as the years roll by.

The relationship between the terms "specialist" and "generalist" is not clear. As we shall see, this relationship has considerable importance in any consideration of the place of science and technology in the law school curriculum. The problem is a reflection of a much wider issue affecting the future development of the learned disciplines.

I. FUNCTIONS OF THE LAW SCHOOLS

A. *Development of Lawmen*

Before considering this problem, it would seem useful to delineate the functions of the law schools in three areas: development of lawmen; research in public policy issues; and cooperation with the rest of the university's components — the liberal arts, the social sciences and the technical disciplines — in promoting an appreciation of the role of law in society.

There is a growing need for law graduates of breadth — men and women who are well-equipped to handle the problems of present practice, and who have broad backgrounds for coping with the many novel problems (which we cannot predict with confidence,

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today) they must face when they reach the prime in their own law careers, either in corporate, governmental or private practice. These are conflicting goals which must be balanced. If the law schools produce young law students who enjoy a broad, philosophical approach to law without the capacity to handle the bread-and-butter stuff of law practice, most of them will not enjoy a good start in their legal careers. Generally speaking, law firms and government agencies expect a new young lawyer to be a competent journeyman. If he does not have a firm grasp of the basics of such areas as contracts, torts and corporations, he will not have a chance to use the broader philosophy which emerges from an excellent legal education. The task of preparing lawmen for future practice is complicated additionally by the obvious fact that no law school can deal with the specific problems which many of its graduates will face twenty years after graduation. Hence, it seems clear that the law schools cannot provide students with a substantial degree of specialization. Their essential task is to prepare lawmen for their future specialization, one which will be achieved as social and economic trends indicate the future needs. This task requires that the schools recognize an appropriate balance between the skills of the "generalist" and the "specialist."

1. Place of Public Policy

This balance depends on a clear understanding of the relationship between issues of public policy and of private practice. Many people mistakenly believe that there are clear lines of demarcation between the educational treatment of problems of public policy and of legal skills. They overlook the need for a firm view of public policy issues in order to cope with the future problems of law practice, problems which will be affected by the burgeoning role of government and its effect on the day-to-day lives of individuals and enterprises.

The importance of providing future lawmen with an understanding of public policy issues is indicated by the tremendous influence exerted by the private practitioner in many areas of regulation. An illustration can be found in the public utility industry. There is little doubt that the regulation of public utility rates has failed to meet many of its objectives. Innovation in the public utility field has been repressed because our regulatory process offers few incentives for higher efficiency and lower costs. There is considerable evidence that the main emphasis of public utility regulation has been on the control of profits rather than the regulation of rates. This situation has developed from the highly legalistic atmosphere, combined with rather mechanical approaches to accounting which

envelops the regulatory process. As a result, there are few incentives to innovate or to promote new methods.

There is considerable evidence that the lawyers for the utility companies have played an active role in the development of this process. While they may argue for higher rates of return, they never pose the issue in terms of incentives. They go along with the process of regulating profits because it entails profit floors as well as ceilings through the regulation of entry into the business and the acceptance of costs. Hence, the shortcomings of this area of regulation cannot be ascribed solely to the regulatory agencies or the courts.

A similar situation restrains innovation in methods of distribution. It will be recalled that the Robinson-Patman Act prohibits price discrimination, but allows price differentials if they can be justified by differences in costs. This proviso was added to the bill in order to permit innovations in distribution. However, the records show inadequate progress in applying this proviso, a deficiency that can be laid at the door not only of the Federal Trade Commission, but also of the private bar. By and large, the legal profession has failed to seize the opportunity to develop reasonable methods for determining and proving the cost differentials involved in different methods of distribution.

These are but two of many illustrations of the important role that the private lawyer plays in the development of public policy. They indicate a growing need of an appreciation of public policy, particularly in the regulatory area. They demonstrate the possibilities of better serving a client's interest through an understanding of the flexibility allowed by regulations and by a more fruitful contribution to the development of the regulatory process.

Some mistakenly assume that there are substantial differences in educating young lawyers for public service and for private practice. There is a growing need for a basic review of the future functions of the lawman, what understanding he needs for various types of practice, and what he should achieve in his law school career. Such a review should encompass the developing role of the lawyer in policy formulation as well as administration, working for government or private business, for small clients or large.

2. Function as Middleman

In the course of his work, whether in negotiation, in litigation, or in the formulation of rules and policies, the lawyer has to assume more and more of the functions of the middleman, or the translator. For example, the administrator in government or business may lack the scientific background needed for many policy decisions. Therefore, the lawyer is frequently required to learn enough about the

scientific issues to be able to apply them in formulating the policy alternatives. On the other hand, if the administrator is a scientist, the lawyer has to provide the background for an understanding of the pertinent legal policy issues. Indeed, he frequently must make the scientist or engineer aware of the importance of the legal details of a contract or regulation.

The development of lawmen who can serve as middlemen and who can apply scientific knowledge in the solution of legal-policy problems involves the generalist-specialist problem. The lawyer cannot absorb the knowledge of a physicist, a construction engineer, a medical scientist, an economist, or of any other group of disciplines. The law schools cannot produce renaissance men. Efforts to encompass any or all of these fields in the course of law study would probably produce poorer lawyers and third-rate knowledge about the other fields. Black letter law makes a poor lawman. The equivalent in other disciplines is no better.

The essential interdisciplinary task of the law school is to provide its students with an awareness of the various disciplines and a general understanding of their application in the solution of legal problems. Such an understanding calls for an appreciation of the problems encountered in working with practitioners of the other disciplines. Such an understanding calls for a general demonstration of the contributions that can be made by the various disciplines and of their limitations, a demonstration which may be achieved by selected case studies covering the specific applications of the disciplines in solving legal problems. Above all, such an understanding requires that the future lawman should acquire an appreciation of his own limitations in treating scientific issues, whether they fall within the rubrics of physical, life, or social sciences.

B. *Public Policy Research*

Turning to the second function suggested for the law schools, the area of public policy research has taken on increasing importance. The many drastic changes in our society in the past several decades require significant appraisals of our legal institutions. We need to up-date many aspects of the law and of its administration. Above all, we badly need a firm understanding of a multitude of current economic and social problems which society must consider.

Scientific and technological development provide one of the most important areas of policy research. Spectacular progress in the applications of atomic energy, of electronics, of space exploration, of medical observation, and of oceanography have demonstrated the present need for reappraisal. These current developments portend striking, unimagined changes in the future.

Policy research should not be divorced from the essential function of law schools — the education of able lawmen. Rather, policy research should provide important support for improved understanding of the nature of legal problems. To this end, research should be utilized to strengthen the teaching function, to provide law teachers with an improved appreciation of the current problems involved in adjusting our legal institutions to the socio-economic-scientific conditions of today.

C. Role of Law in Society

The third goal, the development of an understanding of the role of law in other parts of the university, should not be overlooked. The lawyer cannot be the sole policy maker in our society. The law schools must find some way to bridge the communications gap between themselves and the other disciplines which are involved in policy formulation. Education in science and technology is an important case in point. More and more public policies will be influenced by determinations and decisions of scientists and engineers. In many areas, such as atomic energy, the administrators do not enjoy a background in law or the social sciences. They need an understanding of the society within which they operate. Many of them are unaware of economic, social and political currents. Though they are essentially in favor of a democratic process, some forget all this process when they deal with a technical problem. One sign of this can be found in the writings of such a thoughtful person as Vannevar Bush. Writing on the frontiers of science, Bush maintains that science can come up only to the point where important value judgments must be made. At that point, he believes that we must go directly from science to the humanities. He fails to understand the application of the social sciences and the law in defining the issues and problems, definitions which are sorely needed before the value judgments of the humanities can be brought into play.

II. SCIENCE AND TECHNOLOGY IN LAW SCHOOL

Against this background, how can the law student develop an understanding of science and technology? Several interesting seminars in law and science have been conducted in law schools. These have been valuable courses. However, it seems to me that they do not provide a satisfactory method. We need to find ways to make students aware of the application of science and technology in every field of law. Such an awareness can be achieved most effectively by demonstration in each course rather than by special seminars which are not related to the specific subject matter of conventional fields of study.

The application of this approach can be demonstrated with examples from two areas of law, contracts and administrative law. Why should science and technology affect problems in contracts? Consider the problem of a contract covering the development of a new product, a contract written when the item is merely a gleam in the eye of an engineer. Nobody knows whether the product will work, how it will be made, or what it will cost to produce. Nevertheless, many lawyers write such contracts in terms that are just as definite as agreements covering wood-cased lead pencils whose specifications are clear. There, lawyers fail to recognize the difference between a physical specification and a performance specification. They fail to recognize the essential issue in contracts of this type: the distribution of the investment risk. Despite the uncertainty, many such contracts specify the price of the final product with no clue to the level of production costs or prospective sales volume.

Such illustrations can make students aware of the need even in such bread-and-butter courses as contracts, to communicate with administrators, scientists, or engineers to achieve a basic understanding of the subject matter of the contract before starting to draft, to negotiate, or to litigate.

The second illustration derives from administrative law. A statute aimed at preventing cancer sets up a standard for foods. It provides that a product may not be sold if the injection of any ingredient into an animal will induce cancer. The Department of Health, Education and Welfare administers the statute.

Several years ago tests of the insecticide residue left on cranberries showed that it could induce cancer in mice. I am told that a person would have great trouble in eating enough cranberries to develop cancer from that residue; indeed, it would be an impossible feat.

At least two errors were needed for this result. The drafters of the statute overlooked, or did not understand, the issue of proportions. The enforcers did not appreciate the nature of the problem in administering the statute, and such problems will attain increasing import with the further development of scientific observation. Means for observing molecules or lesser "quantities" may make it possible to detect cancer-producing elements in an increasing number of products. Conceivably, many common household foods, such as bread and milk, could be forced off the market by a literal interpretation of the statute.

III. DEVELOPMENT OF FACULTIES

Any serious effort to demonstrate the application of science and technology in conventional law courses (not to mention several other disciplines) requires the development of competent teachers.

Such a program cannot be satisfied by providing separate teachers in the other disciplines. Nor can it be achieved by a course in the subject unless the student finds an understanding of the problems in the other courses he takes. We cannot expect students who are just absorbing the vocabulary of the law to learn some vocabulary in science and technology, and to correlate those fields when their own professors have not yet achieved such an understanding.

The materials needed for such teaching must be created. The present casebook method is inadequate. Most of the cases present a distillation of facts used by an appellate judge as a jumping-off place for a discussion of the legal issues. We need to produce more insightful descriptions of problems such as the cranberry episode and the development contract. Rich materials of this type would give the student an opportunity to engage in substantial exercises in problem-solving, using the attractive activity which helps to make many law courses so interesting.

Another crucial problem is how to interest law professors in public policy research. A related need is to promote active cooperation and interaction with the other disciplines in analyzing public policy issues. Such cooperation would necessitate, of course, an effort to provide other university faculties with an understanding of the role of law in our society and an appreciation of the importance of the public policy issues — an endeavor which is worthwhile for its own sake.

There are no clear solutions for any of these problems. They provide an important opportunity to bring the law schools up to date. They offer the Association of American Law Schools and individual institutions the possibilities of engaging in absorbing, even exciting, experimentation. Above all, they can help to provide society with the valuable function that law faculties can offer.