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The Levels of Confrontation of Science and the Law

W. Carey Parker

Mr. Parker utilizes a tripartite division in his analysis of the problems facing science and the law. On the operating level, the author recognizes the responsibility of law to act as a guiding force. At the "legal response time" level, Mr. Parker questions the adaptability of the common law tradition to immediate scientific challenges. Finally, at the institutional level, the author commends the initial breakthrough made by some governmental agencies, but he also indicates that other institutional challenges must be met.

I WOULD LIKE to distinguish for the purposes of this discussion three different aspects of the confrontation between the life sciences and the law: the operating level, a level which may be called the level of "legal response time," and the institutional level.

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The operating level is the level of immediate and most persistent confrontation. It is the responsibility of the law at this level to make itself aware of the biological and medical revolution that is taking place.

We now have only the most dim perception of the challenges that the wave of discovery in the life sciences has cast upon our beaches. Professor Wald has given important examples of some of the problems facing us in the near and distant future. For example, although the artificial synthesis of human life from its chemical components may still be entirely speculative, the frozen sperm bank is not. Although biochemistry and physiology may not tomorrow answer the ancient controversy between free will and determinism, they may very soon find cures for severe hereditary defects in mental development.

Because some of these examples are dramatic, they have already received wide currency. It is the first order of business today for the law to search out the problem areas created for society by the life sciences. The Association of the Bar of the City of New York, for example, has recently organized a Special Committee on Science and Law, which, as one of its projects, proposes to make precisely this sort of broad survey of the areas of present and potential future

interaction between biology and law as a predicate for a more penetrating study of particular problems.

As Professor Wald has recognized, the problems posed by science for law are, in a sense, problems of choice. Not many decades ago our handling of serious problems, such as life and death, mental and physical health and disease, family planning, and geriatrics, was inexorably determined by forces over which we had little or no control. The life sciences could accomplish relatively little that affected the health of either man or society. Today, on the other hand, the life sciences have taught us a great deal about what we can do. Science has accumulated a large reservoir of indiscriminate knowledge that offers us alternative methods to halt, modify, or even reverse many of those forces. But it has not been the function or theory of science to tell us which alternative we should choose. It is the law, as the agent of society, that must recognize and weigh these alternatives and guide man in the exercise of his choice. This is a role, however, that lawyers cannot exercise alone. The responsibility must be shared with scientists. Too often, the opinion is voiced that science is too important to be left to the scientists.

At the second level, the level of legal response time, the problems are also acute. Professor Wald has emphasized, in Darwinian terms, the evolutionary value of rapid adaptability to change. It may fairly be said that no other institution of society is so well adapted to resist change as is the Anglo-American legal system. Its ancient common law tradition, its adherence to precedent, its lengthy procedures, and its emphasis on deliberate speed present embarrassing contrasts in a society in which the hallmark of science is impatience with the status quo. We must seriously question whether our legal and political institutions have the capacity to make timely responses before the forces of change have already committed our society to one or another of the paths that were once available.

We may have here, in the social context, an example of what Professor Wald has described as dangerous overspecialization. The structure of our modern legal system, in relation to its ability to respond with appropriate speed to the pressure of scientific change, was solidified in response to the demands of the 19th-century industrial revolution. The advanced state of our society testifies clearly to the ability of society and its legal system to assimilate the technical innovations of the past. Can they do the same for today's discoveries? There is a risk of adopting an overly egocentric view by regarding today's scientific challenges as more urgent and de-

manding than those of the past. At the same time, it would be alarming if the urgency of today exceeded by any significant amount the existing legal response time to the problems we face.

An important issue here, then, is the degree to which our present problems are unique. Professor Milton Katz has asked whether the modern confrontation between science and law today could as appropriately have been characterized in the past as a confrontation between "the steamship and the law," between "the wheel and the law," or even between "fire and the law." What is clear, of course, is that we are not for the first time awakening to the broad problems posed to the structure of society by advancing science and technology. The new dimension that may recently have been injected into the problem is the rapidity of scientific change and the corresponding need to increase the tempo of our decisionmaking. The science of genetics, for example, is almost literally a child of the 20th century. The threshold laid down by Mendel in 1866 remained uncrossed until 1901, when three groups of researchers made simultaneous and independent rediscoveries of his work. More significant, it has only been in the past two decades that the biochemistry of our genes has become sufficiently understood to offer us the prospect of actually manipulating our heredity.

A correlative aspect of the level of legal response time is the difficulty in mobilizing the interest and support of individuals, groups, and even legislators in solving problems whose predominant impact will occur only at some time in the future or in another country. Will we sacrifice today's cigarettes to prevent tomorrow's cancer, or domestic amenities to cure foreign malnutrition and disease? These are the questions that must concern the lawyers, economists, and educators who are to initiate and guide the direction of our social evolution.

Bound up with the operational and response time aspects of the confrontation between the life sciences and the law is the adequacy of the institutional structure that society uses to answer the questions raised by science. As Oliver Wendell Holmes, Sr., stated, "Science is a first rate piece of furniture for a man's upper chamber, if he has common sense on the ground floor."

The lawyer's instinctive response to a new problem is to improvise with his old tools, not to look for new tools. Experience with other problems in other areas of the law has shown the need for new forms of cooperation between federal and state governments and private organizations. The large commitment of the federal

government to research in the life sciences has necessarily caused the creation of new institutions to plan and develop the research programs. Unfortunately, comparable efforts have not been exerted toward evaluating the results of such research and guiding its application. In areas such as public health, for example, the timelag between a discovery in research and its clinical application to patients is easily measured in lives lost. In other areas the dialogues between science and law at the institutional level are being reshaped amid continuing controversy by the technological demands of nuclear arms and military power, outer space and environmental pollution. Institutional innovations such as the Office of Science and Technology, the Federal Council for Science and Technology, the President's Science Advisory Committee, and the Committee on Science and Public Policy of the National Academy of Sciences were developed partly in response to the urgency of such problems. Comparable or different innovations may be required to deal with the problems created by the life sciences. In areas such as world population control, it is clear that supranational governmental entities will be needed to make efficient use of our limited resources for such control. At the local level, the impact of the life sciences on human health and disease is already overtaxing the existing institutional relationships between the patient and his physician, his hospital, and his government.

Important as it is to be receptive to the need for new institutions to deal with science, we must also be alert to detect the involuntary types of change that may be provoked by science in our existing institutions. Nowhere in modern science is specialization more abundant than in the life sciences. The splintering of biological subspecialties threatens any effort at coordination or overall guidance of research and challenges the efficiency of even the individual researcher, let alone that of the scientific estate. In other areas, we must examine the implications for medical institutions and medical education of the drain of research inclined students away from the patient and into the laboratory. Can technical achievements in communications, for example, be harnessed to solve the severe staff problems in medical education?

Let me conclude with an example — the challenge of tissue culture genetics to the law of abortion — that illustrates the interaction between the life sciences and the law at the three levels I have mentioned. The Langdon-Down syndrome, otherwise known as mongolism, is characterized by the presence of an extra 21st chromo-

some, in the cells of an affected individual. It is caused by an accident in cell division that appears to take place either in the egg cell of the mother or in the developing embryo. Recent studies have also suggested a possible link between chromosomes and crime — the presence of an extra Y chromosome in males has been reported in certain persons who show marked mental retardation, tall stature, and violent behavior.¹ Other chromosome abnormalities have also been discovered, often marked by severe physical and mental handicaps. Such abnormalities are easily detected under the microscope, and it will soon be feasible to perform such tests on the developing embryo. Comparable tests will become available for a wide range of other hereditary defects. Legal questions that arise at the operating level are apparent: How shall our abortion laws be applied once the certainty of a seriously abnormal offspring is known? Should we permit the abortion pill? At the response time level, we must determine to what extent the new chemicals pouring into our environment today are producing the hereditary defects of tomorrow. At the institutional level, we must ask whether the abortion bureau should take its place alongside the medical clinic, or whether the marriage bureau should take on the function of genetic counseling for its clients.

Similar challenges can be raised in many other areas where the law meets the life sciences. Who gets the artificial kidney when not everyone can get it? How long should life be prolonged in the case of incurable disease? Should drug addicts undergo compulsory civil commitment for treatment? Should the law force auto drivers to submit to blood tests for intoxication? Should parents be permitted to select the sex of their children? What standards should be adopted in medical research on human subjects, especially in circumstances where the knowing and intelligent consent of the subject may vitiate the experiment? Should the federal government spend federal funds to cure cancer or should it concentrate on heart disease? Can private scientists and physicians be left to resolve these questions, or must local, state, and federal agencies become more directly involved?

The law is only now beginning to plan its response to most of these challenges. The validity of the answers we reach tomorrow will depend on whether the questions we ask today are the right ones.

¹ Price & Whatmore, *Behavior Disorders and Pattern of Crime Among XYY Males Identified at a Maximum Security Hospital*, 1 BRITISH MEDICAL J. 533-36 (1967).