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The Need for and the Relationship of the Forensic Sciences to the Civil Laws

Today in the United States the search for knowledge is enormously successful and enormously attractive, and may I add, enormously easy. Anybody can do the investigating if he gets the opportunity and the materials, but the search for understanding what we know, seems to be less rather than greater, it cannot keep pace.
—Alexander Meiklejohn

The real danger to the civil law is in the misunderstanding, warped evaluations, incorrect assessments of facts, and personal ignorance of the advanced learning and technology of the forensic sciences and their application to the civil law.

A definition of the forensic sciences would be "medicine and science as applied to the law." The American Academy of Forensic Sciences has at the present time nine Disciplines: Criminalistics, General, Jurisprudence, Odontology, Pathology and Biology, Psychiatry, Questioned Documents, Toxicology, and Physical Anthropology. The members of the various Disciplines are the acknowledged leaders of their fields in the world.

The objective of the American Academy of Forensic Sciences is as follows: "The objectives of this Academy shall be to promote education for and research in the forensic sciences; to encourage the study, improve the practice, elevate the standards, and advance the cause of the forensic sciences; to promote the standardization of scientific techniques, tests and criteria; and to plan, organize and administer meetings, reports and other projects for the stimulation and advancement of these and related purposes."

The Academy's affiliate, Forensic Sciences Foundation, Inc., has as its objectives the following: "The objectives of the Forensic Sciences Foundation, Inc. shall be to conduct research and expert analysis, evaluation and testing of the procedures and standards utilized in the practice of forensic science; to develop useful educational and training programs and methods of benefit to forensic sciences; to carry on a program of public education concerning issues of public importance to the forensic sciences; to engage in projects and contracts with persons and entities, including governmental agencies concerning matters of public welfare; and, in general, to engage in activities which shall promote, encourage and assist the development of the forensic sciences."

The interdigitation of the forensic sciences and the civil law is evident in every phase of the law. Hardly a day passes in any court in the United States that testimony is not given involving the economic life and well-being of the American family. From torts to contracts and probate law, the forensic sciences and law interlock in a mutual, everfast interface. There is a complete interdependence that has manifested itself from the beginning of the civil law. However, those involved (the courts and attorneys) have

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not learned or kept pace with the advanced learning and new technology of the forensic sciences. This inevitably results in injustice.

The need for the learning and thorough understanding of the forensic sciences and their application to the civil law is immediate and crucial. Useful educational programs and training programs must be developed to help the courts and attorneys learn and understand. Seminars should be planned, organized, and administered to stimulate and advance these programs; otherwise, the search for understanding truth is lost. If truth and understanding are lost, you have injustice. The chaos that inexorably follows is the state that our civil law is rapidly approaching.

The areas of the civil law locked fast with the forensic sciences are as follows:

- (1) Torts
 - (a) automobile accidents
 - (b) product liability (such as drugs)
 - (c) medical and hospital negligence
 - (d) construction, contractors, architects
 - (e) workmen's compensation
 - (f) libel—slander (documentary tapes or electronic eavesdropping)
 - (g) patent law
 - (h) mental competency
 - (i) computers
- (2) Contracts
 - (a) signature
 - (b) product quality
 - (c) commercial sales
 - (d) computers
 - (e) insurance—health and accident and life insurance (double indemnity)
- (3) Environment
 - (a) air
 - (b) ocean
 - (c) land
 - (d) atomic energy
- (4) Probate
 - (a) wills (signature and mental competency)
- (5) Courts
 - (a) the trial courts (judges)
 - (b) the trial attorneys for plaintiff and defense
 - (c) appeal courts

As troublesome and dangerous as it is, today's lack of understanding may be only a comparatively mild introduction to the crisis only a few years ahead. More and more forensic scientists are warning of new developments in technology.

Over the past decade the major argument among the forensic scientists has not been so much what would happen in technology, but when and what civil court would understand about the advances. Granted that there are a few people in the law who make a valiant effort, but their education has been sadly lacking. That is not their individual fault but the fault of the forensic sciences in not making the information available through continuing education. The majority of those involved in the civil law look but don't see, hear but don't listen, and completely fail to comprehend or understand forensic science evidence.

American attorneys and courts have been woefully weak in continuing education in the forensic sciences and sorrowfully lacking in common sense in coping with them. The quality of the courts and attorneys cannot be allowed to deteriorate any

further. New attitudes and priorities must be established. Technology has driven and is driving forward rapidly. We cannot afford not to move or to sweep these changes under the rug. They will rise to haunt us just as the energy crisis is doing now.

People are disillusioned with institutions as a way to settle problems. They distrust not only government but institutions of all kinds. The pressures on the civil law will continue to mount and the only way to relieve this pressure is by education; specifically, by continuing education in the forensic sciences.

We cannot back into the future; those involved in the civil law must be technologically, psychologically, and legally prepared for the forensic sciences. The civil law must keep pace with the population and technological growth of the nation; otherwise, democracy as we know it will slide further downhill.

There has been, and still is, a lack of understanding between the forensic sciences and the civil law. Neither discipline seems to understand the other's regulations, basic functions, procedures, or subject. Considering their interdependence and their apparent inability or refusal to learn or understand each other, one wonders what would happen if the general public were aware of the deficiencies.

A refusal or inability to communicate seems to be the basic problem between the forensic sciences and the law. This is nothing new between the two professions, but the exponential growth of the forensic sciences is making this difficulty grow at a similar pace. Science and law have become intransigent bedfellows.

The wall between the two professions seems to have its foundation on two problems. One problem arises in the superiority that is alleged for one's own particular profession. The general animosity between expert witnesses (medical or otherwise) and cross-examiners is seen every day in the civil courts. Those in the courtroom, be they judge or lawyers, seem to resent the presence of anyone whose knowledge of any subject is greater than their own. They are not at ease. In turn, the scientific or medical expert becomes hostile that his opinions should be challenged by the lawyer who, he firmly believes, doesn't know anything about the subject. This seems to have been brought about by their professional education: as one might state, a parochial school resulting in secular vision. That anyone outside their own profession should dare question their statements seems to them incomprehensible.

The second problem seems to be the failure to comprehend the meaning of the word "law" as used by the two professions. Law as used by the judiciary and lawyers are regulations made by legislation and the courts for the conduct of members of society. In science, laws are the abstract natural principles discovered by the scientist. The difference is fundamental. The government's laws are prescriptive instructions, which lose nothing in validity however often they are disobeyed (for example, traffic laws). Scientific laws are generalizations from observation and experiment. If a law will not fit some well-documented fact it is scrapped and a new one found. It seems to be that those in the law think of science as a body of facts established forever by absolute, accurate measurements. This, of course, does not take into account either the discovery of new facts which put a different light on the old ones or a new theory which gives better picture of the old facts. Technology advances, science changes, and the law stands still.

The law has failed to understand that there is no such thing as absolute accuracy. Medicine and science deal in probabilities—statistical probabilities. The law seems to want a yes or no, black or white. The law will have to listen and understand that all medical and scientific conclusions are really matters of probability. The only answer to the problems mentioned is communication from the forensic sciences to the law. This has never been easy and is being made doubly hard by the exponential growth of scientific technology. A more thorough explanation and understanding must be detailed for the courts' statements "based upon reasonable medical and scientific certainty" or "beyond all reasonable doubt."

The problems and difficulties mentioned are not insurmountable. Both professions can and should appreciate the vital need for a far greater measure of understanding between the two professions! We are each individually interested in seeing good and effective justice in the American courts. This can be done, for now, by lectures and practical visits, discussion groups, and seminars throughout the country. In the future, courses in the forensic sciences should be started in the law schools and courses in law should be started in the medical, pharmacy, and nursing schools.

Involved in the forensic science aspect of civil justice are the courts, the lawyers, and the forensic science experts. The 1971 federal census lists 10 349 judges, 878 in the federal courts, 7548 in the state courts and 1023 in the city courts. All these courts at one time or another hear cases involving the forensic sciences. In the U.S. District Courts, the administrator reports an average of 100 000 cases a year filed on the civil side; of these, 60% involve the forensic sciences. In a metropolitan area like Chicago, there are 20 000 civil suits filed each year in the county court; 80% of these involve the forensic sciences.

There are about 375 000 lawyers in the U.S., of whom about half are involved with or exposed to the forensic sciences and the courts from investigation to the actual trials and presentation of evidence.

The greater number of civil cases involve the health sciences. There are 250 allied health sciences in the U.S. using about 900 000 people. It is estimated that there is presently a need for 500 000 more, and for one million in the next decade. All of these people at one time or another are exposed to or will be in the civil courts regarding the forensic sciences.

The number of civil suits, the various scientific and law disciplines involved, and the numbers of people bring one to the stark reality and enormity of the problems. The forensic science expert, the lawyer, the court—each must learn to communicate, to understand, each to each other. Only then shall injustice be lessened.

Perhaps a permanent institute of forensic sciences could be set up where the various disciplines could attend, teach, learn, and discuss. Something should and must be done before the quicksands of ignorance smother us all.

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