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DNA: Lessons From the Past — Problems for the Future

INTRODUCTION*

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The period in which we are now living may go down in history as the "Age of DNA." Certainly, one of the most momentous recent achievements is science's remarkable progress in unraveling the mysteries of the blueprints or recipes for life encoded in the human genome. Every day we read about further developments and what they may signify for the future of mankind. Not surprisingly, these scientific developments are already having an enormous impact on the law in such diverse areas as law enforcement, privacy, intellectual property, insurance, family, and health law. It seemed highly appropriate, therefore, as part of Brooklyn Law School's centennial celebration, which honored the founding of the school in 1901, to explore a topic that will shape the next century for all of us. But a centennial celebration is not only an occasion for taking stock of the present and predicting the

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future. It also furnishes an opportunity to step back to contemplate the past in order to gain insights by viewing events in a historical context.

To accommodate these different perspectives from which to view the impact of DNA on the legal system, a symposium on DNA and the Law was held at Brooklyn Law School on March 9, 2001. We are most grateful to the National Institute of Justice for the generous funding they provided in support of this event. The symposium was divided into three sessions dealing with the past, the present, and the future. In addition, we had the honor to have as a keynote speaker, Dr. Joshua Lederberg, Nobel laureate, whose provocative remarks immediately follow this introduction. His talk entitled "Beyond the Genome" and "Whose Germs Are They Anyhow?" reminded us that much is not yet understood, and that as we learn more, our legal system will be challenged by new issues.

The first session of the symposium, "Lessons of a Century Ago: Fingerprints and Eugenics," considered the lessons of a century ago in coping with emerging technologies that presented issues analogous to those raised today by DNA technology. The inception of fingerprinting and the eugenics movement, both of which more or less coincided with the beginning of the last century, raised issues about the interface of science and the law that are akin to those raised today by DNA. The first presentation by Professor Jennifer L. Mnookin of the University of Virginia Law School about how the courts initially treated the admissibility of fingerprint evidence illustrated the very different cultural lens through which courts viewed scientific evidence at the start of the twentieth century. In her article, she expands on her theme with the intriguing account of how the new standards for scientific evidence that were applied to DNA evidence have resulted in contemporary judicial challenges to fingerprint evidence.

Professor Nicole Hahn Rafter of the Law, Policy and Society Program at Northeastern University in the second Article from the session, considers the legal issues created by the use and abuse of eugenics as a scientific tool. In looking back a century to biological theories of criminality, she utilizes art to explore the obvious law and science orientations of this topic. She contends that images used by scientists, although they are "subjective, intuitive, and nonlinear," shed light on

scientific endeavors and their legal repercussions. For some scientific images, seeing triggers believing and even suggests particular social and legal policies. The images used to portray the historical criminal law theory of degeneration and the association of "feeblemindedness" with criminality provide examples for her observations. Today, the dominant image of DNA is, of course, the double helix. What normative reverberations come from this?

Dr. Simon A. Cole, the author of Suspect Identities, a recent work on fingerprinting, integrates the first two presentations by explaining that a century ago fingerprints were thought capable of providing far more than evidence relevant to identification. They were also thought to contain information pointing to biological markers of criminality. Consequently, the discourse about fingerprints at the turn of the twentieth century mirrors the heated debate about DNA data bases that is taking place today. Dr. Cole's comments on the shift that led to a view of fingerprints patterns as purely markers of identification, and the lessons to be learned from this history, provide an insightful introduction and transition to the issues explored in the next session.

The second session, "Current Issues: DNA Evidence and Data Banks," confronted current legal issues relating to the emerging use of DNA technology. Professor David L. Faigman of the University of California Hastings College of the Law contributes an Article on the reception of DNA evidence in the courtroom, and what this tells us about both science and law at the turn of the twenty-first century. He considers how and why scientific evidence hit "the tipping point" that inevitably led to DNA evidence being treated so differently than fingerprinting evidence had been a century earlier, and he explores DNA's role in producing this shift in how the law now views science. Professor Mark A. Rothstein of the University of Houston Law School and Sandra Carnahan of the South Texas College of Law then discuss some of the privacy and other social consequences of amassing large DNA data banks and how these issues should be resolved. After sketching out the legal framework that courts will have to apply in determining the

¹ SIMON A. COLE, SUSPECT IDENTITIES: A HISTORY OF FINGERPRINTING AND CRIMINAL IDENTIFICATION (2001).

constitutionality of DNA law enforcement data banks, Professors Rothstein and Carnahan then turn to a variety of policy issues that DNA data banking will require us to confront. Their conclusion that data banks should contain only the DNA of convicted sex offenders and violent felons is disputed by Professor David H. Kaye of Arizona State University College of Law, who in his comments offers a different vision and justification for how law enforcement DNA data banks should be constituted.

The third session, "The Future? Predicting Behavior and Patenting Living Organisms," turned to issues that are likely to arise in the coming century. Professor Owen D. Jones of Arizona State University College of Law spoke on the prospects of importing into the law the knowledge of human nature emerging from evolutionary biology. In some part this paralleled Professor Rafter's discussion in the first session of eugenics and the law. Because the principles of eugenics were ultimately rejected by the law, in part for their anti-democratic anti-egalitarian overtones, the related lessons evolutionary biology require careful and cautious consideration by legal institutions. Professor Jones believes, however, that legal thinkers have much to learn from behavioral biology, which enables us to better predict human responses. Since behavioral predispositions of all organisms, including humans, are subject to natural selection, law makers who attend to the lessons of evolutionary biology will have understanding of how to regulate conduct. The main thrust of his paper examines some of the expressed doubts of those who disagree.

Professor Daniel J. Kevles of Yale University's Department of History then presented a paper on the patentability of living organisms. Substantial consequences follow from whether the knowledge obtained through deciphering the human genome is placed in the public or private domain. Professor Kevles begins by noting the huge controversy surrounding the patentability of living organisms. Enormous economic consequences flow from whether gene patents fall within the protections of intellectual property. Clouding these interests are unusual ethical overtones to the claims. The Article, contributed by Professor Kevles and Ari

Berkowitz of the Department of Zoology at University of Oklahoma, dwells on the historical events of the last twenty years that surrounded and precipitated the controversy.

In the freewheeling discussion that followed the third session, a panel of experts provided assessments of other crucial issues relating to DNA technology. Included is an Essay by Dr. Charlotte J. Word, from Cellmark Diagnostics, who offered predictions about future developments in the forensic laboratory, and remarks by Professor Dorothy Nelkin of New York University that focus on ethical implications. The wide range of perspectives developed at the symposium demonstrate the enormous impact that DNA technology is already having on our lives and the legal community, and will continue to have in even larger measure in the years to come.