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Science and Law

A New Book in the Center's Rowman and Littlefield Series

A new book titled *No Magic Wand: The Idealization of Science in Law* will be released this July by Rowman and Littlefield Publishers. The authors are David S. Caudill, professor of law at Villanova University, and Lewis H. LaRue, professor of law at Washington and Lee University. It will be the third book in a series from the Center for Public Justice, the first two of which were James Skillen's *In Pursuit of Justice* (2004) and *With or Against the World?* (2005).

Caudill and LaRue argue that "science is no magic wand that can solve all social problems." To imagine that it can do so is to idealize science. The idealization of science by judges and lawyers in court cases is the chief focus of *No Magic Wand*, but the authors point out that much the same thing often goes on in legislative policy making and in government administration.

Scientific authority has become ever more important in the shaping of society and law over the past two centuries. Yet the authority of science does not stand alone; it is part of a larger range of contending authorities in contemporary society. The question then is how science should be evaluated and how its claims should be treated by other authorities such as judges, legislators, and educators.

Anyone interested in public justice—in the soundness of our political order under law—will find this book to be of great value. Whether one is concerned with medical malpractice cases or with Congress's handling of scientific evidence on global warming or the health risks of smoking, this book illuminates the landscape.

The following is an edited excerpt from the authors' Introduction to *No Magic Wand*.

“Introduction” to *No Magic Wand*
by
David S. Caudill and Lewis H. LaRue[©]

Our focus in this book is on the current use of science in the courtroom. One should not underestimate the importance of this topic—some estimate that 75 percent of disputed civil cases involve one or more expert witnesses. Of course, merely because lawyers and judges see scientific experts daily does not mean that they understand accurately what these experts are saying. Indeed, they regularly experience problems, and some are baffled at how to use scientific testimony to help argue or decide cases.

Moreover, a new problem has developed—the U.S. Supreme Court declared in 1993 that federal courts should not admit expert testimony unless the “gatekeeping” judge is satisfied that the content of the testimony is “reliable.” Supreme courts of many states have followed the lead of our nation’s highest court (even though they are not technically required to do so). As we will explain in due course, “reliability” is a term of art in law, but this new standard of reliability has generated some obvious problems for our nation’s judiciary. How are judges, and the lawyers who argue before them, to decide whether a scientist is presenting reliable or unreliable evidence? Judges and lawyers have stumbled into debating the very questions that those who study the history, philosophy, and sociology of science have been debating—what is [good] science? anyone with more than a passing interest in that question will find it profitable to compare what is happening in today’s courts with traditional and contemporary studies of scientific knowledge.

Although there are many books about the relevance of science to law and policy, this book is different from most “law and science” books. Rather than focusing on the legislative or administrative process, and how science is used to set policy, we look at the adjudicative context, the courtroom. Although adjudication is quite different from the legislative or administrative context, many of the problems concerning the best way to use science are the same. For example, those who write regulations or statutes (in the administrative or legislative arenas) always look to the future, while trial lawyers and judges look to the past. Nevertheless, legislators and administrators are provoked to consider changes for the future because of troubles that have arisen in the past, and judges do worry about the consequences of their decisions and the community’s response. The distinction between the two contexts remains valid, however, especially when the incentives in the policy context and in litigation are contrasted. Administrators and legislators hope to change the world in accordance with their agendas, but litigators and judges have simpler motives—to win, or to decide, a case.

Consider mass tort litigation, such as that exemplified by the Dalkon Shield contraceptive or the Bendectin anti-nausea drug: the lawyers for the plaintiffs in such a case want lots of money to compensate the victims for their injuries (and the lawyers for their time), while the defense lawyers want to limit their clients’ losses *in this case*. Such cases will have enormous policy consequences, yet the primary and immediate incentives are more crude.

That said, note that the very same scientific enterprise is at work in both the policy and litigation contexts. We began this study with the presumption that the problems of science in the courtroom would be strikingly different from the problems of science in the policy context, yet in the end we found more common ground than we imagined. The goal of making decisions on the basis of reliable scientific evidence—whether concerning risk of a new drug or liability for an old drug—is the same. Consequently, we are confident that this book is relevant both to those who study the judicial process as well as to those who study administrative or legislative processes.

The problem we identify in law, with respect to science, is one of idealization. Many judges and lawyers look to science to provide stability—the answer!—to a legal controversy. Knowing that law is a cultural institution characterized by advocacy and rhetoric, such judges and lawyers often imagine that science is better than that—it should stand above culture, advocacy, and rhetoric. In our view, however, science is a pragmatic enterprise, with practical and local goals and limitations. Science is not only rigorous and methodological, but also betrays inevitable social, rhetorical, and institutional interests and aspects; these latter features of science are therefore not always markers of bad science, but characteristics of the best science. It is not a critique of a useful scientific theory to identify the ambitions, interests, funding, persuasive models, and credentials that preceded *and even maintain* its acceptance in the scientific community. We call this a non-romantic view of science, to distinguish it from those who view science at its best as an enterprise that transcends social interests, politics, rhetoric, debate, history, and other human aspects.

As we will show, trial judges who have a romantic view of science tend, alternatively, to make two mistakes: sometimes they disallow good science because the scientific expert does not live up to an idealistic image of science; paradoxically, sometimes they allow bad science on the basis of its social authority alone. In both cases, the failure to understand the practical goals and limitations of science leads to the phenomenon of a distinctively “legal” science in the courtroom that does not match the reality in which scientists work. In response, some scholars confirm their own idealization of science by blaming judges for being scientifically unsophisticated, juries for being scientifically illiterate, and lawyers for being scientifically dishonest. Other scholars begin to idealize the law: surely an educated gatekeeping judge, an objective jury, or an honest attorney can ensure that reliable science is determinative in a trial.

In our view, one must maintain a non-romantic vision of both science and law—both are cultural enterprises that rely, for example, not only on logic and methodology, but also on social conventions, rhetorical moves, and institutional credentializing. Indeed, we demonstrate that thesis both by conducting interviews with scientists and by analyzing several deposition transcripts from recent tobacco litigation. The discourse of scientists themselves, and of the lawyers who depose them, betrays an unwitting reliance on arguments based in social, historical, and institutional frameworks, in addition to their “technical” arguments.

Recent work in science studies—variously referred to as “science-and-technology studies” or the “sociology of scientific knowledge”—has confirmed that the polarization between utter faith and confidence in science, on the one hand, and criticism of science as a “social construction,” on the other, is unnecessary. Science is a product of *both* (i) observation and experiment, with respect to natural reality, *and* (ii) norms, conventions, and expectations within the scientific community. In legal literature, however, the notion persists that an expert with “biases, interests, and motivations” is thereby discredited, as if such aspects of humanity are always bad (they aren’t), and as if good scientists are never biased toward a favored theory (they are), never interested in some problems and not others (they are), and never motivated toward economic success (they are). Our purpose is to argue for an appropriately modest view of scientific expertise and legal processes, and to show how such views can assist judges and lawyers, and potentially administrators and legislators, in recognizing and appropriating the best science in law.

The sequence of topics is straightforward. We will begin with discussing what happens at trials, with a focus on the interplay between the trial courts and the appellate courts that supervise them. Next, we move away from the courtroom into the legal academy; we give a highly abbreviated summary of what legal academics have said about what the judges are doing. Then, we move to a less formal arena, the interaction of lawyers and scientists outside of the courtroom in the pre-trial investigation of claims, which we compare to ethnographic studies of scientists in their laboratories. We end by comparing what we have done with a few examples from the sociology of science, the history of science, and science in legislation.