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DISCOVERY ALONG THE LITIGATION/SCIENCE INTERFACE

*Richard L. Marcus**

Science was done in the open, that was a reason it had conquered; if it dwindled away into little secret groups hoarding their results away from each other, it would become no better than a set of recipes, and within a generation would have lost all its ideals and half its efficacy.

C.P. Snow¹

[T]he scientific method and the adversary system are polar opposites.

Peter Huber²

Involvement with attorneys in litigation interferes with the scientist's primary activities; demands a substantial investment of energy and time (usually at the scientist's inconvenience); requires a degree of commitment that is disproportionate to any professional or monetary return; always involves the risk of being made to appear foolish, superficial or incompetent; and the conflict and contention involved in legal actions can be extremely unpleasant.

Two scientists, addressing scientific meeting³

Snow's vision of science has sustained not only scientists but Western society since the Industrial Revolution—hence the notion that science has conquered. As we approach the twenty-first century with a greater emphasis on technology, this vision

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¹ C.P. SNOW, *THE NEW MEN* 130 (1954).

² Huber, *A Comment on: Toward Incentive-Based Procedure: Three Approaches for Regulating Scientific Evidence* by E. Donald Elliott, 69 B.U.L. REV. 513, 513 (1989). Peter Huber has emerged as one of the leading critics of the tort system in general, and of the handling of scientific issues in court in particular. See, e.g., P. HUBER, *LIABILITY: THE LEGAL REVOLUTION AND ITS CONSEQUENCES* (1988); Huber, *Junk Science and the Jury*, 1991 U. CHI. LEGAL F. 273.

³ Lloyd & Auxier, *How Science Can Contribute to the Legal Process*, 56 HEALTH PHYSICS 929, 929 (1989). This article was presented at the 114th annual meeting of the American Public Health Association. *Id.* at 929 n.*.

is likely to seem more central. While science has been riding high as a symbol of the success of Western society, American litigation has in many quarters come to represent a failure. Where litigation has conquered, this feat is widely viewed as a bad thing. Suspicion of the litigation process seems particularly pronounced in the scientific community. In large measure, this suspicion is due to what scientists take to be the perversion of science in litigation, reflected in Huber's characterization of the two as "polar opposites." This suspicion is compounded by the unpleasantness of litigation described by the two scientists addressing their assembled brethren.

Despite Snow's devotion to openness, science today often views requests for information for use in litigation with extreme resentment. Given the prominence of scientific theory and scientific findings in certain types of civil litigation—particularly in the growing field of toxic torts—it is understandable that litigants will try to subpoena pertinent data from scientists. Equally understandably, scientists will resist subpoenas in some instances and, like other professionals, claim that they should be privileged to refuse to comply with discovery.⁴ At that point, the courts will be called upon to mediate.

The Second Circuit confronted a heated conflict between a researcher and litigants in *Application of American Tobacco Co.*⁵ Several tobacco companies were sued by asbestos workers suffering from lung cancer. The plaintiffs had been smokers as well as asbestos workers, and they claimed that the tobacco companies were liable for failing to warn them of the peculiar risks of smoking for asbestos workers. They were expected to rely at trial on the research of a prominent professor at New York's Mt. Sinai School of Medicine, who had published several pathbreaking studies concluding that the synergy between exposure to asbestos and smoking produced a geometrical increase in the frequency of lung cancer. The researcher and the school moved to quash the subpoena on the ground that they should be protected

⁴ See Krattenmaker, *Testimonial Privileges in Federal Courts: An Alternative to the Proposed Federal Rules of Evidence*, 62 GEO. L.J. 61, 85 (1973) ("Perhaps the majority of evidence experts . . . [believe] that testimonial privileges are . . . born of competing professional jealousies . . .").

⁵ 880 F.2d 1520 (2d Cir. 1989) (before Lumbard, Feinberg and Kearse, JJ.; opinion per Kearse, J.).

by a researcher's privilege.⁶ The district court enforced the subpoena. The Second Circuit upheld the district court but, as it had in 1984,⁷ skirted the question whether there should be a researcher's privilege.

This Article examines the problem of accommodating the concerns of science and the needs of litigation⁸ in the discovery context. This analysis is particularly timely given the recent amendment to Rule 45 of the Federal Rules of Civil Procedure to provide explicit recognition of the interests of nonparty experts who are subpoenaed.⁹ The tensions involved can be illustrated with two overdrawn scenarios:

Scenario A: Humanitarian Pharmaceutical Co., the maker of pharmaceutical Y, is sued by a plaintiff who claims to have contracted cancer from taking the drug. At trial, plaintiff's expert witness, Dr. Crackpot, tells the jury that, based on studies done by other scientists, it is her conclusion to a reasonable medical certainty that plaintiff's cancer was caused by pharmaceutical Y. Despite the testimony of defendant's experts, who present the generally accepted view of the scientific community that there is no connection, the jury returns a verdict of \$10 million for plaintiff.

Scenario B: After years of patient and inspired effort to develop population studies on the effects of exposure to chemical X, Dr. Humanitarian is nearing completion of the studies and anticipates being able to demonstrate that chemical X causes

⁶ They also argued that the subpoena was unduly burdensome and objected to it on a variety of other grounds, which are considered below.

⁷ See *In re Grand Jury Subpoena Dated Jan. 4, 1984*, 750 F.2d 223 (2d Cir. 1984).

⁸ The focus of this Article is on civil litigation, where the type of science/litigation controversies being examined are likely to occur. In relation to privilege claims, note that "[i]n a criminal case, the need for relevant evidence will weigh much more heavily on the scales than in a civil case." 2 J. WEINSTEIN & M. BERGER, *WEINSTEIN'S EVIDENCE* ¶ 501[03], at 501-41 (1991).

⁹ This amendment, promulgated by the Supreme Court on April 30, 1991, will become effective on December 1, 1991, unless Congress acts to the contrary. As of this writing, it appears Congress will not take such action. As amended, Federal Rule of Civil Procedure 45(c)(3)(B)(ii) will provide that a subpoena may be quashed if it "requires disclosure of an unretained expert's opinion or information not describing specific events or occurrences in dispute and resulting from the expert's study made not at the request of any party . . ." Note that one might contend that even where the researcher's conclusions will be before the court the underlying data are not discoverable under this new provision. However, it seems too great a stretch to conclude that to be discoverable in such circumstances the underlying data must "describ[e] specific events or occurrences in dispute."

cancer. On the eve of this breakthrough, however, her research efforts are disrupted by a subpoena from Oligopoly Chemical Co., the maker of chemical *X*, which has been sued by a plaintiff claiming that exposure to the chemical has caused plaintiff's cancer.

The Article begins with background on the general tension between science and litigation by exploring the mistrust that is caricatured in Scenario *A*, concluding that although science is methodologically different from litigation it is unlikely soon to be insulated from litigation. Thus, litigants will continue to make discovery requests for research data. Accordingly, the Article examines the risks caricatured in Scenario *B* and the ways in which the court system has responded to those concerns. It concludes that a qualified privilege is not warranted and that a better (though similar) approach to the risks posed by Scenario *B* can be crafted based on the federal rules governing discovery. The Article closes with an examination of the factors that should bear on such decisions, providing a context for application of amended Rule 45.

I. THE LITIGATION/SCIENCE INTERFACE

As Huber tersely observes, there seems to be an inherent tension between science and litigation. Some years ago Professors Thibaut and Walker expanded upon this topic as a preface to their theory favoring adversarial procedures for resolving disputes in court:

Disputes that develop in scientific inquiry are the prototype of cognitive conflict in a setting of common interest. Scientists are socialized in an ethic of disinterestedness in the pursuit of widening and deepening their commonly held store of knowledge and understanding. This ethic serves to suppress conflicts of personal or material interest in furtherance of a common stake in the scientific enterprise. In principle, as long as scientists adhere to this idealized role, their conflicts are purely cognitive; competing hypotheses are entertained for the purpose of ascertaining the truth. Typically, in "normal" science, the validity or relative adequacy of rival hypotheses is determined by submitting the question at issue to empirical or formal tests by experiment or mathematical analysis.

At the other extreme of the subject matter continuum is the situation of maximum conflict of interest. In this case the respective interests of the parties are perfectly opposed because a particular solution will maximize the outcome of one of the parties only at the expense of the other. Here the ultimate test of any particular solution

is the character of the distribution of outcomes among the interested parties, and no solution will ultimately be recognized as "correct" by all of them. Hence, the objective of resolving conflicts of interest must frankly be seen as something other than finding the "true" or scientifically valid result. From the time of Aristotle the objective in resolving this kind of dispute has been characterized as "justice."¹⁰

Professors Thibaut and Walker proceeded from this analysis to explore the choice between inquisitorial and adversary methods of resolving disputes, concluding that for scientific cognitive disputes some variant of an inquisitorial autocratic method might be best, but that for the distributive questions brought before courts the adversarial method, with its active involvement of the parties, is superior. Based on the work of Thibaut and Walker, researchers of the "procedural justice" school have examined the ways in which our age-old commitment to the adversarial system serves to promote satisfaction with outcomes in court.¹¹ Nevertheless, the question whether the adversary system's benefits outweigh its costs remains, as it should, a hotly debated topic.¹²

Without trying to sort out that debate at present, it can be said without doubt that the adversary system does not produce satisfaction among scientists when issues of science are presented in court. Scientists are committed to the scientific ideal, in which practitioners of the scientific method assiduously seek to garner information about the true state of affairs in nature. This quest involves experimental evaluations of hypotheses

¹⁰ Thibaut & Walker, *A Theory of Procedure*, 66 CALIF. L. REV. 541, 543-44 (1978); see also Goldberg, *The Reluctant Embrace: Law and Science in America*, 75 GEO. L.J. 1341, 1345 (1987) ("Rather than seeking greater knowledge of the natural world, the law seeks the peaceful resolution of human disputes.").

Thibaut and Walker's image of scientists, though widely shared and assiduously cultivated by scientists, is not universally held. Paul Feyerabend, for example, takes an iconoclastic view that science is an ideology, completely shaped at any moment in time by its historical and cultural context. In his view, scientific disputes are resolved not on their merits but by the theatrical and oratorical skills of their advocates, much as are legal cases. See, e.g., P. FEYERABEND, *AGAINST METHOD* (1975). He also takes comfort in the fact that "[l]awyers show again and again that an expert does not know what he is talking about." *Id.* at 307. While recognizing this dichotomy of views on the scientific method, for purposes of this Article, we may begin by accepting the outlook described by Thibaut and Walker.

¹¹ See, e.g., A. LIND & T. TYLER, *THE SOCIAL PSYCHOLOGY OF PROCEDURAL JUSTICE* (1988).

¹² See, e.g., S. LANDSMAN, *READINGS ON ADVERSARIAL JUSTICE: THE AMERICAN APPROACH TO ADJUDICATION* (1980).

that incrementally build upon the scientific work of others toward greater insights. The bywords are objectivity and caution; whenever possible investigators should be protected from the risks of bias in their observations. Experimental results should be peer-reviewed by others schooled in the discipline before publication.¹³ Published results should be verifiable by replication; if they are not verified the conclusions are called into question.¹⁴ This is the ideal held up by C.P. Snow, and it retains its force today.

To the pursuers of this ideal, the reality of litigation over issues investigated by science is disquieting and sometimes outright embarrassing. Lawyers themselves usually lack meaningful training in science.¹⁵ These lawyers hire witnesses with scientific credentials to present scientific theories helpful to the lawyers' clients. Those theories need not have been published or subjected to peer review, and the scientific credentials of the witnesses may be rather thin. Indeed, some suggest that in litigation there is a sort of Gresham's Law by which marginal science thrives at the expense of good science because it offers the prospect of greater profits in court.¹⁶ This use of expert witnesses may also be highly profitable to the witnesses themselves and even more so to those who traffic in expert witnesses.¹⁷

At trial these hired gun experts propound their marginal theories before jurors who are likely to lack significant understanding of basic scientific principles¹⁸ and who may accordingly

¹³ See, e.g., Monahan & Walker, *Social Authority: Obtaining, Evaluating, and Establishing Social Science in Law*, 134 U. PA. L. REV. 477, 500 (1986).

¹⁴ See, e.g., Faigman, *To Have and Have Not: Assessing the Value of Social Science to the Law as Science and Policy*, 38 EMORY L.J. 1005, 1016-21 (1989).

¹⁵ The growing exception to this rule is the recent tendency of patent firms to hire scientists to assist in handling the complex issues presented by patent cases. In some instances, the firms send the scientists to law school. See London, *New Technology Sends Law Firms Recruiting Scientists To Be Partners*, N.Y. Times, Mar. 22, 1991, at B18, col. 3.

¹⁶ E.g., Elliott, *Toward Incentive-Based Procedure: Three Approaches for Regulating Scientific Evidence*, 69 B.U.L. REV. 487, 492 (1989) ("our current system of litigation creates strong incentives for lawyers to select experts with views outside the mainstream of scientific opinion").

¹⁷ See Richards, *Doctors Seek Crackdown on Colleagues Paid For Testimony in Malpractice Suits*, Wall. St. J., Nov. 7, 1988, at B1, col. 3 (noting that "brokers" for expert witnesses in malpractice cases are paid 20-30% of the total recovery in some instances).

¹⁸ See Huber, *Junk Science and the Jury*, *supra* note 2.

be moved more by the cinematic qualities of the witnesses than the technical force of their testimony. The jurors may even discount the testimony of the expert witnesses altogether on the ground that they are hired guns.

Although this dismal portrait is overdrawn, it can easily be supported with illustrations from real litigation life. Little wonder, then, that many scientists view litigation regarding scientific matters with dismay and seek to keep their dignified distance. To take a prominent, recent example that might be a paradigm for Scenario A, consider the spate of personal injury claims for alleged injuries suffered in utero due to exposure to the anti-nausea drug Bendectin. Evidently in part because litigation was pending,¹⁹ a great deal of scientific investigation was done on the possible link between Bendectin and fetal mutations. The consensus of the scientific community, on the basis of this work, was that no such link could be established. Nevertheless, Bendectin was removed from the market and, as a recent scientific editorial lamented, "the Bendectin cases go on, in spite of what appears to be better evidence for safety than is available for any other substance, including tap water."²⁰ Surely this has been a discouraging episode for scientists.

A commonly proposed solution among scientists for such embarrassing misadventures in litigation is to take science out of the courtroom altogether. The idea is not to deem scientific principles unimportant in the resolution of litigated disputes but to leave their resolution to scientists rather than the hurly-burly of the courtroom, indeed to supplant the adversary method with something more like the refereed approach of true science. One such solution would be to create a sort of "science court" to pass on issues of science.²¹ At least in the personal injury area, the idea of exporting issues of science out of the courtroom has garnered significant support in the legal community.²² Some go further and urge that all issues regarding the safety of new technol-

¹⁹ See note 124 and accompanying text *infra*.

²⁰ Scialli, *Bendectin, Science, and the Law*, 3 REPRODUCTIVE TOXICOLOGY 157, 157 (1989).

²¹ E.g., Martin, *The Proposed "Science Court,"* 75 MICH. L. REV. 1058 (1977) (describing proposals to create a science court to resolve issues of science and technology for public policymakers).

²² See, e.g., Sugarman, *The Need to Reform Personal Injury Law: Leaving Scientific Disputes to Scientists*, 248 SCIENCE 823 (1990).

ogy be removed from the courts and assigned to technocrats who could license innovations found to be safe enough, thereby insulating against liability for resulting injuries.²³

These proposals would obviously be stiff medicine. They cut to the core of the Anglo-American tradition of trial and raise fundamental issues that make their implementation in the near future improbable. Indeed, so embedded is the notion of the adversarial process that, when a "science court" was proposed to resolve issues of science for Congress or the Executive Branch, one of its selling points was that it would involve adversary processes.²⁴ Abandonment of the adversary method for key issues involved in litigation is probably not on the horizon.

Moreover, a fair evaluation of science's claim of exemption from the courtroom calls for mention of some reasons for skepticism about leaving science solely to scientists when the resolution of civil disputes is in question. Despite its shining ideals, science itself is not untarnished. Fraud in science is a problem that has been around for a long time,²⁵ and legitimate concerns about it remain. To take a recent, highly publicized example, Nobel Prize winner David Baltimore had to withdraw a paper owing to the revelation that some of the data on which it was based had apparently been faked.²⁶ To deal with concerns about

²³ See Huber, *Safety and the Second Best: The Hazards of Public Risk Management in the Courts*, 85 COLUM. L. REV. 277 (1985). For criticism of this approach, see Marcus, Book Review, *Apocalypse Now?*, 85 MICH. L. REV. 1267, 1278-81 (1987).

²⁴ Martin, *supra* note 21, at 1058. Professor Martin suggested that "the adversarial process, which is central to the trial process in the common law system, holds promise for supplying provisional answers to scientific questions that must be answered before policy may be set." *Id.* He added that "the use of adversaries has great promise in bringing issues quickly to a head. Nothing in the scientific method guarantees that hypotheses will be tested or when they will be tested, while the adversary process usually guarantees that all points of an opposing position will be raised and decided within the time limits of the litigation." *Id.* at 1064. It must be noted, of course, that Professor Martin was trained as a lawyer, not a scientist, and that he taught in a law school.

²⁵ See W. BROAD & N. WADE, *BETRAYERS OF THE TRUTH* 22-37 (1982) (detailing seeming misconduct by scientists including Ptolemy, Galileo and Newton); A. KOHN, *FALSE PROPHETS: FRAUD AND ERROR IN SCIENCE AND MEDICINE* 35-45 (1986) (similarly questioning work of Ptolemy, Newton and Mendel).

²⁶ Hilts, *Crucial Data Were Fabricated in Report Signed by Top Biologist*, N.Y. Times, Mar. 21, 1991, at A1, col. 1 (17 pages of notebook data were seemingly faked). The scientist against whom the charges were leveled has denied them, although she does admit that there were false statements in the paper and that they should have been corrected. See Hilts, *"I am innocent," Embattled Biologist Says*, N.Y. Times, June 4, 1991, at B5, col. 1. Dr. Baltimore, meanwhile, resigned from his post as President of Rockefeller University because the scientific fraud controversy "created a climate of

fraud in science, the National Institutes of Health (N.I.H.) have set up an Office of Scientific Integrity, dubbed by some the "science police."²⁷ Congress itself has recently held hearings on the problem of improper scientific research, stressing issues of self-interest as well as self-promotion.²⁸

One answer to these concerns is that science will unfoul its own nest by unmasking those who do false science. The Baltimore case at least raises questions about that argument. The junior researcher who unearthed that fraud was fired and banished from science for some years for her troubles.²⁹ Rather than take her questions seriously, many scientists closed ranks in defense of the published paper. As another scientist put it, many "were willing to go to battle with absolute certainty, without bothering to read the paper and think about the likelihood that the paper was wrong."³⁰

While the Baltimore case may have been an isolated incident, it is impossible to determine whether there are many such problems hidden in the annals of modern science.³¹ This and

unhappiness among some in the university that could not be dispelled.'" Hilts, *Nobelists Entangled in Fraud Case Resigns as Head of Rockefeller U.*, N.Y. Times, Dec. 3, 1991, at A1, col. 1. (quoting Dr. Baltimore's letter of resignation).

²⁷ See Leary, *On the Trail of Research Misconduct; Science Police Take the Lighthouse*, N.Y. Times, Mar. 25, 1991, at A13, col. 1. But a district judge has recently held that these N.I.H. investigations rules violate the Federal Administrative Procedures Act. *Abbs v. Sullivan*, 756 F. Supp. 1172 (W.D. Wis. 1990). See London, *Judge Voids Rules on Scientific Fraud Inquiries*, N.Y. Times, May 3, 1991, at B11, col. 1.

More ominously, controversy surrounds the Office of Scientific Integrity. The head of the N.I.H. has forced the agency's chief fraud investigator to resign and has recused herself from any future investigations of alleged scientific misconduct. Representative John Dingell (D. Mich.), chair of a subcommittee inquiring into these matters, expressed concern that "there is an attempt at N.I.H. to dismantle the Office of Scientific Integrity . . ." See Hilts, *Scientist Withdrawing from Misconduct Cases*, N.Y. Times, Aug. 1, 1991, at A14, col. 1. Some see these developments as raising serious questions about whether scientists can seriously investigate and resolve matters of scientific misconduct. See *id.*

²⁸ See HOUSE COMM. ON GOV'T OPERATIONS, ARE SCIENTIFIC MISCONDUCT AND CONFLICTS OF INTEREST HAZARDOUS TO OUR HEALTH?, H.R. REP. NO. 688, 101st Cong., 2d Sess. (1990).

²⁹ See Hilts, *Biologist Who Disputed a Study Paid Dearly*, N.Y. Times, Mar. 22, 1991, at A1, col. 2.

³⁰ *Id.* at A12 (quoting Dr. Mark Ptaschne of Harvard University).

³¹ Some guess that there are many instances of fraud in science. Broad and Wade estimate that "for every case of major fraud that comes to light, a hundred or so go undetected," and they extrapolate that "every major case of fraud that becomes public is the representative of some 100,000 others, major and minor combined, that lie concealed in the marshy wastes of the scientific literature." W. BROAD & N. WADE, *supra* note 25, at 87.

other revelations of scientific fraud³² blunt momentum for the sort of radical change mentioned above. Instead, courts seem increasingly willing to rely upon more vigorous scrutiny of the validity and reliability of scientific testimony.³³ This sort of screening to weed out clearly bad science has been endorsed in the scientific community, which would prefer that the standards of science be applied to screen evidence in court.³⁴ As Judge Weinstein has put it, "when either the expert's qualifications or his testimony lie at the periphery of what the scientific community considers acceptable, special care should be exercised in evaluating the reliability and probative worth of the proffered testimony."³⁵

Here again, Bendectin provides a useful example. In a leading case, the Court of Appeals for the District of Columbia upheld a J.N.O.V. for the defendant in a Bendectin case despite expert testimony that exposure to the drug had caused plaintiff's injuries. Noting that the question of causation is "scientific in nature," the court found that "it is to the scientific commu-

³² See H.R. REP. NO. 688, *supra* note 28, at 10-50 (detailing ten instances of recent fraud in science).

³³ This tendency may be accelerated if a recently proposed amendment to Federal Rule of Evidence 702 is adopted. See *Preliminary Draft of Proposed Amendments to Federal Rules of Civil Procedure and Federal Rules of Evidence*, 137 F.R.D. 53, 156-58 (1991). The amendment directs that expert testimony should be allowed only if "the information is reasonably reliable," will "substantially" assist the trier of fact, and the expert demonstrates proper training to provide the testimony. *Id.* at 156. Although the amendment is not a return to the "general acceptance" standard of *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), the advisory committee notes indicate that "the court is called upon to reject testimony that is based upon premises lacking any significant support and acceptance within the scientific community . . ." *Id.* at 157. This proposal has not been endorsed by the Standing Committee on Rules of Practice and Procedure, much less the Supreme Court. The earliest date on which it might become effective if adopted would be December 1, 1993.

Certainly there are some unduly rigid limitations on expert testimony. See, e.g., *Ralph v. Nagy*, 749 F. Supp. 169 (M.D. Tenn. 1990), in which the court held that a Tennessee state statute limiting expert witnesses from the health care field to those licensed in Tennessee or contiguous states applied in federal court, and that two New York doctors therefore could not testify for plaintiff.

³⁴ See, e.g., Brent, *Improving the Quality of Expert Witness Testimony*, 39 *TERATOLOGY* 215 (1989); Muscat & Huncharek, *Causation and Disease: Biomedical Science in Toxic Tort Litigation*, 31 *J. OCCUPATIONAL MED.* 997 (1989).

³⁵ *In re "Agent Orange" Prod. Liab. Litig.*, 611 F. Supp. 1223, 1242 (E.D.N.Y. 1985), *aff'd*, 818 F.2d 187 (2d Cir. 1987), *cert. denied sub nom. Lombardi v. Dow Chemical Co.* 487 U.S. 1234 (1988).

nity that the law must look for the answer."³⁶ Looking to science, the court rejected the testimony of the plaintiff's expert: "Uniquely in this case, the law now has the benefit of twenty years of scientific study, and the published results must be given their just due."³⁷ The Fifth Circuit has similarly ruled that absent statistically significant epidemiological proof that Bendectin causes birth defects, a plaintiff's proposed proof that the drug caused her birth defects is insufficient to get to the jury.³⁸

But this trend toward more exacting scrutiny of scientific evidence before it is admitted in court stops well short of what scientists would probably prefer. Some courts even continue to allow Bendectin cases to go to juries.³⁹ Moreover, even if they are not an exception that proves the rule that junk science still can find a place in the courtroom, Bendectin cases seem to occupy a special shelf in the litigation/science arena. For instance, a panel of the Fifth Circuit has maintained that proof of causation ordinarily need not depend upon epidemiological studies and that its insistence on such proof in Bendectin cases is "[t]he exception from this rule."⁴⁰ On the other hand, that court's en banc endorsement of critical scrutiny of the expert's "methodology" in the same case may fuel moves toward an approach that could please the scientists.⁴¹

³⁶ *Richardson v. Richardson-Merrell, Inc.*, 857 F.2d 823, 829 (D.C. Cir. 1988), cert. denied, 493 U.S. 882 (1989).

³⁷ *Id.* at 832.

³⁸ *Brock v. Merrell Dow Pharmaceuticals, Inc.*, 884 F.2d 166 (5th Cir. 1989), modified 874 F.2d 307 (5th Cir.), cert. denied, 110 S. Ct. 1511 (1990).

³⁹ *E.g.*, *DeLuca v. Merrell Dow Pharmaceuticals, Inc.*, 911 F.2d 941, 952 (3d Cir. 1990) ("[W]e do not have the authority to create special rules to address the problems posed by continued Bendectin litigation."); *Longmore v. Merrell Dow Pharmaceuticals, Inc.*, 737 F. Supp. 1117 (D. Idaho 1990).

⁴⁰ *Christophersen v. Allied-Signal Corp.*, 902 F.2d 362, 367 (5th Cir. 1990), vacated, 939 F.2d 1106 (5th Cir. 1991) (en banc); see also *Graham v. Wyeth Laboratories*, 906 F.2d 1399, 1407-08 (10th Cir.), cert. denied sub nom. *Wyeth-Ayers Labs Div. of Am. Home Prods. Corp. v. Graham*, 111 S. Ct. 511 (1990) (error to exclude defendant's expert's testimony on causation on ground that expert was not familiar with medical literature concerning endotoxins); cf. *Mason v. Texaco, Inc.*, 741 F. Supp. 1472 (D. Kan. 1990) (plaintiff's expert epidemiologists could testify regarding causation despite defendant's argument that epidemiology does not provide a basis for an opinion about whether the occurrence of disease in a given individual was caused by exposure to a substance).

⁴¹ In *Christophersen v. Allied-Signal Corp.*, 939 F.2d 1106 (5th Cir. 1991) (en banc), the court in a per curiam opinion adopted a test for admissibility of expert opinion evidence that appears to upgrade judicial scrutiny of such testimony significantly by adopting a variant of the famous *Frye* rule. See *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923). The suit in *Christophersen* sought wrongful death damages for a worker at de-

The significance of this background for the litigation/science

defendant's plant on the basis that his regular exposure to fumes containing nickel and cadmium had caused the colon cancer that killed him. Plaintiff proposed to rely at trial on an expert who testified in his deposition that plaintiff's small-cell carcinoma of the colon was associated with exposure to these heavy metals. The expert relied on studies linking exposure to heavy metals to development of small-cell carcinoma in the lungs and asserted that this was a proper analogy. Defendant's experts testified that this analogy "has no support in medical science and is without foundation," *id.* at 1115, and the district court found that the theory advanced by plaintiff's expert was "without precedent in cancer epidemiology and is not scientifically correct." *Id.* at 1116. The district court therefore ruled that the testimony of plaintiff's expert was inadmissible and granted summary judgment to defendant.

A panel of the Fifth Circuit unanimously reversed, ruling that the testimony of plaintiff's expert should be admitted at trial, and therefore that summary judgment for defendant was improper. *Christophersen v. Allied-Signal Corp.*, 902 F.2d 362 (5th Cir. 1990). The court then granted rehearing en banc and, in a per curiam opinion, affirmed the district court's decision in favor of defendant. 939 F.2d 1106.

Much as one might sympathize with the conclusion that breathing fumes containing toxins is more likely to cause lung cancer than colon cancer, the majority of the en banc court held that it was not proper for the district judge to reject the analogy drawn by plaintiff's expert between colon and lung cancer as scientifically wrong, stating that "[t]his finding of what is a scientifically correct conclusion is not for the district court." *Id.* at 1116. It felt, however, that "[a]ll Dr. Miller had was a scientific hunch, which as far as the record shows, no one else shares. This was enough to support further investigation but was inadequate to support a judgment in favor of Christophersen." *Id.* at 1115.

The court explained that this conclusion followed from a three-part test for admissibility of expert testimony. First, a court should ask whether the expert's qualifications are sufficient under Federal Rule of Evidence 702, which it took to be satisfied. *Id.* at 1112-13. Second, the court is to ask whether the facts upon which the opinion are based are of the type that other experts in the field would rely upon within the meaning of Federal Rule of Evidence 703. On this score, the appellate court found the information about dosage and exposure that the expert relied upon "inaccurate and incomplete." *Id.* at 1113-14.

More significant, however, was the court's third step: To these provisions of the Federal Rules of Evidence, the majority of the appellate court added a third criterion based on *Frye*, requiring analysis of "the validity of an expert's methodology . . . to determine whether it connects the facts to the conclusion in a scientifically valid way." *Id.* at 1115. It hastened to explain that "[a]s long as the expert's methodology is well founded, the nature of the expert's conclusion is generally irrelevant, even if it is controversial or unique." *Id.* at 1111. But because plaintiff's expert only had "a scientific hunch," the district court was within its discretion in concluding "implicitly" that his testimony failed to meet the *Frye* test. *Id.* at 1115-16.

This decision sparked several vigorous signed disagreements among the minority of the court. Chief Judge Clark concurred in the judgment on the basis of Federal Rule of Evidence 403 but dissented from the majority's reasoning on admissibility of expert testimony, noting that "[r]ule 703 does not address 'methodology'—how the expert uses the facts or data to form an opinion. Rule 703 does not authorize a court to approve or disapprove the expert's conclusion." *Id.* at 1118.

Judge Reavley (author of the panel opinion), joined by three other dissenters, charged that the majority was "effectively converting judicial chambers into science star chambers," *id.* at 1129, finding that the majority simply decided to accept the defense's

discovery dispute is twofold. First, discovery is likely to be an important method for developing information that will in some cases bear on the admissibility of scientific theories in court. Second, where scientific theories are admissible in court discovery is a likely source of evidence to rebut or support these theories. In either context, discovery will serve its traditional role as a tool that adverse parties use to obtain material to support their cases in the courtroom. But as in so many other contexts, such use of discovery can also have disruptive consequences. Along the litigation/science interface, where large stakes may turn on long-term research, the potential for disruptive consequences is serious.

II. LITIGATION/SCIENCE DISCOVERY WARS

Whatever one's view of the supposed distortion of science in litigation, litigation seems to be more of an embarrassment than a threat to science in Scenario A. Principled scientists may grind their teeth when they learn about the sorts of claptrap others manage to peddle in court, but they can remain aloof and pursue science as it has classically been pursued. C.P. Snow's vision can endure the embarrassment of the litigation sideshow. So long as the adversary presentation of dueling experts prevails in the litigation arena, however, there will be a reason to use discovery in some cases to obtain data from scientists not otherwise affiliated

view of the case:

The only evidence in the record to substantiate the majority's *Frye* holding is the contrary conclusion of the defense experts, who do not even address critical aspects of Dr. Miller's disputed "methodology." And even had they refuted his reasoning with withering particularity, upon what basis can this majority infer the lack of "general acceptance," especially when the district court did not even address that issue? Are the affidavits of experts hired by the defense conclusive proof of "general acceptance"?

Id. at 1134.

Judge King, concurring in Judge Reavley's dissent, added a dissent of his own concluding that "at root this is not a case about the Federal Rules of Evidence, albeit that two of them may have been mangled in the process. It is instead about the outcomes in toxic tort cases." *Id.* at 1136. He accused the majority of "an intellectual elitism that prefers to entrust scientific evaluation to a judge, trained in law, rather than the good sense of the community . . ." *Id.* at 1137.

It is unclear whether the en banc decision represents a new wave of restriction on expert testimony. If it does, scientists will probably be somewhat comforted that judges are interposing their views in a more substantive way between the scientific community and juries.

with the litigants. Such discovery efforts may impact much more directly on science as science.⁴²

At the outset, it is important to recognize that this is not the only way in which litigation may warp scientific activities. Recently, for example, scientists examining the effects of the Exxon Valdez spill in Prince William Sound have complained that litigation has shifted scientific efforts away from those that pure science would endorse.⁴³ Similarly, courts presiding over toxic tort cases worry that the limitations protective orders place on dissemination of information scientists receive through discovery may conflict with the ordinary presumption of openness in scientific research.⁴⁴ Where science and the litigation process interact, therefore, science confronts new and troubling tensions.

Tensions between litigation and science can become particularly acute when discovery is directed at a nonparty scientist. It is hard to know how often such discovery efforts occur. In the late 1960s and early 1970s the main concern about discovery of scholarly research involved the social sciences, with a particular emphasis on the criminal justice system's incursion into research on subcultures in which criminal activity might be involved.⁴⁵ A 1976 study reported fifty instances of subpoenas directed at university researchers over the prior ten years.⁴⁶ More recently it has been asserted that researchers' records are subpoenaed

⁴² Science as science is getting bashed from a number of directions. Thus, Time Magazine recently published a cover story on the many pressures on scientific research. See Jaroff, *Crisis in the Labs*, TIME, Aug. 26, 1991, at 45. The article quotes one scientist who is now enrolled in law school: "Well, I didn't get a single job offer from 20 universities—and I got into every law school I applied to. So I decided to go where I was wanted" See *id.* at 49.

⁴³ See Cushman, *Legal Ripples of Spill Are Said to Distort Big Picture of Damage*, N.Y. Times, May 1, 1990, at C4, col. 1; see also notes 124-26 and accompanying text *infra* for a discussion of research on Bendectin.

⁴⁴ *E.g.*, *Anderson v. Cryovac, Inc.*, 805 F.2d 1 (1st Cir. 1986) (court modified protective order allowing experts who had access to material through discovery to mention it in scholarly publications); *In re Upjohn Co. Antibiotic Cleocin Prods. Liab. Litig.*, 81 F.R.D. 482, 483-84 (E.D. Mich. 1979), *aff'd*, 664 F.2d 114 (6th Cir. 1981) ("it might well result in a violation of medical ethics if a court were to require an expert acquainted with the hazards or potential hazards of a drug to conceal that knowledge from the public in general or particular patients").

⁴⁵ Nejeliski & Lerman, *A Researcher-Subject Testimonial Privilege: What to do Before the Subpoena Arrives*, 1971 WIS. L. REV. 1085.

⁴⁶ See O'Neil, *Scientific Research and the First Amendment: An Academic Privilege*, 16 U.C. DAVIS L. REV. 837, 842 (1983).

"fairly often" in connection with civil litigation.⁴⁷ There are certainly several reported examples of such efforts.

*Application of American Tobacco Co.*⁴⁸ presents one such instance. Oddly, it seems to be an offshoot of successful defense tactics used in asbestos litigation, a litigation colossus whose radiations are felt throughout the court system.⁴⁹ As asbestos defendants confronted increasingly grim prospects in court, one bright spot for them was to blame the cigarette smoking of asbestos workers as the cause of the plaintiffs' lung problems. According to one leading plaintiffs' attorney, this was "far and away the most difficult defense to overcome."⁵⁰

Plaintiffs' lawyers are also resourceful; one way they turned this problem into a potential advantage was to sue the tobacco companies, charging them with failing to warn about the special dangers of smoking for persons exposed to asbestos.⁵¹ Not only might this strategy blunt the tobacco defense raised by the asbestos companies, it could also solve a very practical problem

⁴⁷ Holder, *Researchers and Subpoenas: The Troubling Precedent of the Selikoff Case*, 11 *INST. REV. BN.* 8 (1989).

⁴⁸ 880 F.2d 1520 (2d Cir. 1989).

⁴⁹ See, e.g., Report of the Judicial Conference Ad Hoc Committee on Asbestos Litigation (March 1991). This report, written by a committee of federal judges appointed by Chief Justice Rehnquist, describes the "impending disaster" facing the court system due to growing asbestos caseloads as follows:

[T]he worst is yet to come. The committee believes it to be inevitable that, unless Congress acts to formulate a national solution, with the present rate of dissipation of the funds of defendant producers due to transaction costs, large verdicts, and multiple punitive damage awards, all resources for payment of these claims will be exhausted in a few years.

Id. at 27.

⁵⁰ See P. BRODEUR, *OUTRAGEOUS MISCONDUCT* 234 (1985) (quoting attorney Ronald Motley). This is not to say that the defense always works for the asbestos companies. Consider the court's treatment of the smoking defense in *Cimino v. Raymark Indus.*, 751 F. Supp. 649 (E.D. Tex. 1990): "For smoking to be considered contributory negligence, it must be shown that the plaintiff had subjective knowledge of the synergistic relationship between the asbestos-related disease and smoking and appreciated the danger of continued smoking." *Id.* at 658.

⁵¹ This tactic may be scotched if the Supreme Court holds that tobacco companies that complied with federal labelling requirements are immune to civil liability. See *Cipollone v. Liggett Group, Inc.*, 893 F.2d 541 (3d Cir. 1990), *cert. granted*, 111 S. Ct. 1386 (1991). Whatever the fate of the preemption defense, it should be noted that one recent suit suggests that there may be liability for supplying cigarettes that come with their own asbestos. A former Kent smoker has sued the manufacturer for selling cigarettes with filters the company advertised as safer but which actually contained asbestos. See Margolick, *Ex-Kent Smoker Blames Filter of Past for Illness*, *N.Y. Times*, Aug. 30, 1991, at B7, col. 3. It is unclear what the courts should do with such a double whammy.

confronted by plaintiffs' lawyers, who have good reason to worry about the asbestos companies' ability to continue paying judgments.⁵² Surely attorneys with a large supply of plaintiffs would look hungrily at an industry that has thrived on "the most profitable consumer product ever sold—the cigarette."⁵³

Both the asbestos companies' defense and the plaintiffs' claims against the tobacco companies seem to turn on epidemiological research which indicates that smoking and asbestos exposure have a multiplicative rather than only an additive effect on the likelihood of contracting lung cancer. Given the stakes involved, and the centrality of this research, discovery wars seemed inevitable.

In *Application of American Tobacco Co.* several tobacco companies served subpoenas on Mount Sinai School of Medicine in New York seeking data used to prepare three articles written by Dr. Irving Selikoff, a professor at Mt. Sinai.⁵⁴ In these articles, published between 1968 and 1979, Dr. Selikoff and his collaborators reported on the frequency and cause of death among those exposed to neither asbestos nor tobacco, those exposed to one but not the other, and those exposed to both.⁵⁵ The data were drawn from studies of thousands of individual cases. The published conclusion was that those exposed to both asbestos and cigarette smoke faced a far greater danger of contracting lung cancer than those exposed to only one of the substances. The tobacco companies sought access to the underlying data.

All parties agreed that Dr. Selikoff's work was important to the issues presented by the asbestos plaintiffs' claims against the tobacco companies. The tobacco companies asserted that the plaintiffs in their cases would call experts who would rely on Selikoff's studies. Resisting enforcement of the subpoenas, Mt. Sinai's attorney described one of Selikoff's articles as "one of the 50 most significant articles in the history of medicine."⁵⁶ Selikoff

⁵² See note 49 *supra*.

⁵³ Gray, *Tobacco Firms Defend Smoker Liability Suits With Heavy Artillery*, Wall St. J., Apr. 29, 1987, at 1, col. 6 (quoting Bear, Stearns & Co. litigation analyst).

⁵⁴ 880 F.2d at 1525.

⁵⁵ Selikoff, Hammond & Churg, *Asbestos Exposure, Smoking, and Neoplasia*, 204 J. A.M.A. 104 (1968); Hammond, Selikoff & Seidman, *Asbestos Exposure, Cigarette Smoking and Death Rates*, 330 ANNALS N.Y. ACAD. SCI. 473 (1979); Selikoff, Seidman & Hammond, *Mortality Effects of Cigarette Smoking Among Amosite Asbestos Factory Workers*, 65 J. NAT'L CANCER INST. 507 (1980).

⁵⁶ Appendix, *Application of American Tobacco Co.*, 880 F.2d 1520 (2d Cir. 1989)

himself characterized his studies as "authoritative."⁵⁷ That, of course, was a proposition that the tobacco companies were hoping to challenge on the basis of the research data.

Citing "literally hundreds" of subpoenas for this material, Mt. Sinai moved to quash the subpoenas. It claimed that the tobacco companies were "interested in harassing Mt. Sinai and Dr. Selikoff"⁵⁸ and assembled a formidable cast of supporters for its motion to quash, including a former Surgeon General of the United States,⁵⁹ the President of the American Association of University Professors⁶⁰ and the Dean of Yale Medical School.⁶¹ Mt. Sinai argued that the courts should recognize a qualified researchers' privilege because the proposed discovery would deter researchers from investigating controversial matters and would improperly compromise the confidentiality of research subjects. It added that complying with the subpoenas would be unduly burdensome because they sought an enormous amount of detailed data on thousands of research subjects. The tobacco companies energetically joined issue.

Mt. Sinai succeeded in quashing subpoenas issued by New York state courts on the ground that they were overburdensome.⁶² It failed, however, to persuade Judge Duffy of the Southern District of New York to quash a narrower subpoena issued by the federal court, and he ordered production of a computer

(No. 88-7879) [hereinafter "Appendix"], at A59-60 (oral argument on Motion to Quash Subpoena in New York state court (*In re R.J. Reynolds Tobacco Co.*, 136 Misc. 2d 282, 518 N.Y.S.2d 729 (Sup. Ct. 1987))). The Appendix in this case was actually the record on appeal from a separate proceeding, *In re American Tobacco Co.*, 866 F.2d 552 (2d Cir. 1989), in which the court held that Mt. Sinai could not appeal the document production subpoena order before it had been held in contempt. Mt. Sinai was later held in contempt by Judge Duffy. 880 F.2d at 1522.

⁵⁷ Appendix, *supra* note 56, at A182 (Affidavit of Irving Selikoff).

⁵⁸ Appendix, *supra* note 56, at A300, A305 (Affidavit of Nathan Kase, Dean of Mt. Sinai Hospital).

⁵⁹ Appendix, *supra* note 56, at A473-76 (Affidavit of Julius B. Richmond, Director of Harvard University's Division of Health Policy Research and Education, and Surgeon General of the United States from 1977 to 1981).

⁶⁰ Appendix, *supra*, note 56, at A353-59 (Affidavit of Paul H. Walter).

⁶¹ Appendix, *supra* note 56, at A348-52 (Affidavit of Leon E. Rosenberg).

⁶² See *In Re R.J. Reynolds Tobacco Co.*, 136 Misc. 2d 282, 518 N.Y.S.2d 729 (Sup. Ct. 1987). In federal court, Mt. Sinai argued that this decision should estop the tobacco companies from relitigating their right to subpoena the research data related to Dr. Selikoff's studies. Problems with relitigation of issues of this sort are endemic in much complex litigation, see generally R. MARCUS & E. SHERMAN, *COMPLEX LITIGATION* 148-232 (1985), but are beyond the scope of this article.

tape containing research data with the names of the subjects redacted.⁶³ Mt. Sinai appealed.

The Second Circuit affirmed, but without definitively determining whether there should be a research scholar's privilege as a matter of New York law. Instead, the Second Circuit noted that Judge Duffy's analysis showed that he would have refused to quash the subpoena even if such a privilege existed, and summed up its attitude by invoking the classic purposes of discovery:

Since Dr. Selikoff is acknowledged to be the preeminent authority in the area and it is anticipatable that the expert witnesses to be called by the plaintiffs in the underlying suits will rely on his findings, the district court was not required to relegate the tobacco companies to undertaking independent studies rather than pursuing the most direct method of attack on the Selikoff findings.

We are unpersuaded that a contrary result is required by the fact that the medical researchers have no direct interest in the underlying lawsuits. The publication of their findings and conclusions invites use by persons whom the findings favor and invites reliance by the finders of fact. The public has an interest in resolving disputes on the basis of accurate information.⁶⁴

Thereafter, Mt. Sinai did produce certain materials to the tobacco companies, but these materials have not been used in the cases for which the subpoenas were issued because those cases have not gone to trial.⁶⁵

Aligning this case in the spectrum from Scenario A to Scenario B suggests that it is much closer to the latter. Certainly Dr. Selikoff is no Dr. Crackpot, and Mt. Sinai is, as trumpeted by its Dean, "one of the preeminent medical research institutions in the country."⁶⁶ From the perspective of the defendants, however, Dr. Selikoff may appear to be something of a zealot. A reporter has written that "only the uncompromising commitment of Dr. Selikoff, who has worked tirelessly for more than twenty years to make his findings known, and the dedication of . . . plaintiff lawyers who, following his lead, carried on . . . have brought to light the truth about the suffering wrought by the

⁶³ *American Tobacco*, 880 F.2d at 1525.

⁶⁴ *Id.* at 1529.

⁶⁵ Telephone conference with Garyowen Morrisroe, of the law firm of Chadbourne & Parke (New York), attorney for American Tobacco Co. (Apr. 5, 1991).

⁶⁶ See Appendix, *supra* note 56, at A298 (Affidavit of Nathan Kase).

asbestos industry."⁶⁷ In papers filed in opposition to the subpoenas, Dr. Selikoff, though in his seventies, reported that he typically works ten hours a day, six days a week.⁶⁸ If he is a crusader, Dr. Selikoff may resemble Dr. Humanitarian in Scenario B.

Even where a researcher's privilege is found to exist, courts will not necessarily protect Dr. Humanitarian, as illustrated by the other leading case in the area. In *Deitchman v. E.R. Squibb & Sons, Inc.*⁶⁹ the plaintiff sought damages for in utero exposure to diethylstilbestrol (DES). The defendant manufacturer subpoenaed all documents in the Registry for Hormonal Transplacental Carcinogenesis at the University of Chicago. The Registry had been maintained for more than ten years by Dr. Herbst, a University of Chicago medical professor. It contained over five hundred case files and was the only centralized repository of data on the disease. Dr. Herbst had published more than a dozen articles regarding this material and was engaged in ongoing research activities on the subject. Having promised to keep all information he obtained confidential, he moved to quash the subpoena, arguing that his sources would dry up if confidentiality were breached. The district court granted the motion, noting that to enforce the subpoena would harm the Registry and that, as a result, "all society will be the poorer . . . [and] a unique and vital resource for learning about the incidence, causes and treatment of adenocarcinoma will be lost."⁷⁰

The Seventh Circuit vacated. It found that concerns about confidentiality could be solved by some sort of redaction and viewed the principal dispute to be whether discovery should be denied on grounds of privilege.⁷¹ Assuming *arguendo* that such a qualified privilege applied, the court found that the defendant had shown an "absolute necessity" to justify discovery.⁷² It

⁶⁷ P. BRODEUR, *supra* note 50, at 180. Mr. Brodeur likens this effort to Emile Zola's publication of *J'Accuse*, which focused much attention on the injustice done to Captain Dreyfus in France in the late 19th century.

⁶⁸ Appendix, *supra* note 56, at A189 (Affidavit of Irving Selikoff). Dr. Selikoff's point was that he already had too much to do without spending time reviewing research data to prepare it for production to the tobacco companies.

⁶⁹ 740 F.2d 556 (7th Cir. 1984).

⁷⁰ *Andrews v. Eli Lilly & Co.*, 97 F.R.D. 494, 500 (N.D. Ill. 1983), *vacated sub nom. Deitchman v. E.R. Squibb & Sons, Inc.*, 740 F.2d 556 (7th Cir. 1984).

⁷¹ 740 F.2d at 560.

⁷² *Id.* at 561. The court cited *Branzburg v. Hayes*, 408 U.S. 665, 709-10 (1972) (Pow-

found that the plaintiffs' experts were likely to rely exclusively on Dr. Herbst's publications⁷³ and therefore that the defendant's opportunity to challenge plaintiffs' experts was unfairly compromised:

What Squibb is threatened with is having Dr. Herbst as a potent expert witness against it without his ever taking the stand or being subject to cross-examination. The situation is unique because there is placed in the hands of a nonwitness the capability of influencing the verdict far beyond that enjoyed normally by the most qualified expert witness who does take the stand. It appears likely that any expert who challenges Dr. Herbst's views can be refuted by the argument that this witness does not know the most pertinent evidence, the contents of the Registry files, and Dr. Herbst does know that.⁷⁴

Thus, discovery can be justified as a tool to further the adversary process, even in Scenario B.

This invocation of the adversary process nicely frames the two basic questions to be addressed in coping with discovery problems: (1) whether to treat research data as privileged, and (2) how to evaluate the factors that bear on ordering such data to be turned over. We turn to these now.

III. TO PRIVILEGE OR NOT TO PRIVILEGE?

From the perspective of scientists, the preferred solution to discovery wars involving scientific data would be to create a researcher's privilege. Those seeking access to research data, equally predictably, would invoke the general proposition that discovery is allowed as to any relevant matter that is not privileged⁷⁵ and point out that there is no generally recognized privilege for scientific research. A basic question therefore seems to be whether such a privilege should be recognized.

Without unduly downplaying this basic question, particularly given the amendment to Rule 45⁷⁶ it appears that the resolution of the privilege question will not substantially affect the outcome of litigation/science discovery wars. Outside the traditional privileges, there has been a debate about whether recur-

ell, J., concurring), for the proposition that qualified privileges "must yield if to enforce them would produce a miscarriage of justice." *Id.*

⁷³ 740 F.2d at 562.

⁷⁴ *Id.* at 561.

⁷⁵ FED. R. CIV. P. 26(b)(1).

⁷⁶ See note 9 and accompanying text *supra*.

rent immunities to discovery should be so labeled. When the Supreme Court first embraced work product, for example, it was careful to state that it was not creating a new privilege, yet there ensued a debate over whether this protection from discovery should be called a privilege.⁷⁷ A similar debate might ensue about the proper characterization of the protections Rule 45 now authorizes for nonparty expert witnesses.

This debate has limited relevance for the issues before us, however. If a privilege is indeed allowed, all seem to concede that it would not be absolute. The prospect of abrogation based on a showing of need hardly offers the sanctity of classic privilege—at least that of the attorney-client privilege. But the ad hoc flavor of newer privileges is consistent with the Supreme Court's recent analysis of requests for new privileges, which is to adopt a frank balancing approach. Intoning the public's "right to every man's evidence," the Court is likely to ask whether a proposed privilege "promotes sufficiently important interests to outweigh the need for probative evidence."⁷⁸ Privilege protection has therefore become more of a slippery slope than some may recall from their law school days.

At the same time, in the discovery area the public's right to every man's evidence has come in for some hard knocks as a result of perceived abuse and overuse of discovery. The 1980 and 1983 amendments to Rule 26 of the Federal Rules of Civil Procedure move away from untrammelled access to all arguably relevant material and toward a regime of greater restraint by the court.⁷⁹ Although privileges may not be as solid as they once were, therefore, neither is broad discovery quite as broad as it once was. One tool courts use to curtail undesirable consequences of broad discovery is to order that discovery not take

⁷⁷ See Marcus, *The Perils of Privilege: Waiver and the Litigator*, 84 MICH. L. REV. 1605, 1623-24 (1986).

⁷⁸ *Trammel v. United States*, 445 U.S. 40, 50-51 (1980) (citations omitted); see J. WEINSTEIN & M. BERGER, *supra* note 8, ¶ 501[03], at 501-40 ("reason and experience" dictate balancing the public's need for the full development of relevant facts in federal litigation against the countervailing demand for confidentiality").

⁷⁹ It has recently been proposed that Federal Rule of Civil Procedure 26 be amended again to require initial disclosures of evidence informally before formal discovery gets underway. See *Preliminary Draft of Proposed Amendments*, *supra* note 33, at 87-91. These proposals have not been approved by the Standing Committee on the Rules of Practice and Procedure, and could not take effect before December 1, 1993, at the earliest.

place. This discovery management approach, which is reinforced by the recent amendment to Rule 45, affords a competing model of protection. It is keyed to the specifics of a given case that may turn on similar concerns and provides protection a great deal like a qualified privilege.

For scientists, the choice between these models is easy. Disregarding the uncertainty of qualified privileges, they are likely to deplore the ad hoc treatment they have received from courts because "[t]he unfortunate result is that courts are asked to resolve data-sharing issues on a case-by-case basis, thereby offering little guidance for future controversies."⁸⁰ Some legal commentary also favors recognition of a privilege,⁸¹ but others favor a protective order approach.⁸²

Against this background, it is not surprising that the researcher's privilege has a spotty record in reported cases emanating from litigation/science discovery wars. In *American Tobacco* the Second Circuit expressed uncertainty about whether there is any such privilege under New York law.⁸³ In 1984 the court reversed a decision by Judge Weinstein that recognized such a privilege because the witness raising the issue had not made a sufficient showing that a privilege should apply to him.⁸⁴ Although the *American Tobacco* court did assert that the Seventh Circuit "has recognized such a qualified privilege,"⁸⁵ the Seventh Circuit's decisions are less definite. In *Deitchman* the Seventh Circuit said only that "[w]e agree *arguendo* that the Registry files may enjoy a qualified privilege," but promptly held that they had to be produced anyway.⁸⁶ That decision rested in turn on a 1982 case which discussed the importance of maintaining academic freedom in upholding a district court's re-

⁸⁰ Yolles, Connors & Grufferman, *Obtaining Access to Data from Government-Sponsored Medical Research*, 315 NEW ENG. J. MED. 1669, 1669 (1986).

⁸¹ E.g., O'Neil, *supra* note 46; Nejeski & Lerman, *supra* note 45.

⁸² E.g., Note, *Forced Disclosure of Academic Research*, 37 VAND. L. REV. 585, 615-17 (1984); Note, *Free Press, Privacy, and Privilege: Protection of Researcher-Subject Communications*, 17 GA. L. REV. 1009, 1043 (1983).

⁸³ See 880 F.2d at 1528.

⁸⁴ *In re Grand Jury Subpoena* dtd. January 4, 1984, 750 F.2d 223 (2d Cir. 1984), *reversing* 583 F. Supp. 991 (E.D.N.Y. 1984).

⁸⁵ 880 F.2d at 1528.

⁸⁶ 740 F.2d 556, 560-61 (7th Cir. 1984) (construed in *American Tobacco*, 880 F.2d at 1528); cf. *Deitchman*, 740 F.2d at 565 ("Anything not necessary must be viewed as covered by the privilege.").

fusal to enforce a subpoena.⁸⁷ Although the 1982 decision seems to fall far short of creating a privilege, the reliance on academic freedom did provoke disagreement from one member of the panel.⁸⁸ Others claim that a 1976 district court decision refusing to order revelation of research results by a social scientist⁸⁹ recognizes a privilege,⁹⁰ but the court there averred that "[t]he result reached here is not based upon any privilege."⁹¹ Other courts, meanwhile, have explicitly refused to recognize such a privilege.⁹²

There are reasons to be circumspect about handling the litigation/science discovery wars under the privilege rubric. Federal Rule of Evidence 501 directs federal courts to apply state law privileges when evidence is sought with respect to claims or defenses to be decided under state law. This requirement reflects Congress's insistence that privilege issues remain matters of state law.⁹³ Much of the litigation provoking discovery of research data, particularly personal injury litigation, is likely to be based on state law. But there is little state law to apply,⁹⁴ and federal courts asked to find it may also confront sticky choice of law questions.⁹⁵ In *American Tobacco*, for example, the Second Circuit seemed somewhat uncertain about whether New York might adopt such a privilege even though there had been a pre-

⁸⁷ *Dow Chemical Co. v. Allen*, 672 F.2d 1262 (7th Cir. 1982).

⁸⁸ *Id.* at 1278-80 (Pell, J., concurring).

⁸⁹ *Richards of Rockford, Inc. v. Pacific Gas & Elec. Co.*, 71 F.R.D. 383 (N.D. Cal. 1976).

⁹⁰ See Kaplan & Cogan, *The Case Against Recognition of a General Academic Privilege*, 60 U. DET. J. URBAN L. 205, 209 (1983); cf. J. WEINSTEIN & M. BERGER, *supra* note 8, ¶ 501[03], at 501-39 n.21.

⁹¹ 71 F.R.D. at 389 n.2.

⁹² *E.g.*, *Solarex Corp. v. Arco Solar, Inc.*, 121 F.R.D. 163, 164, 169-70 (E.D.N.Y. 1988), *aff'd*, 870 F.2d 642 (Fed. Cir. 1989).

⁹³ See generally 23 C. WRIGHT & K. GRAHAM, *FEDERAL PRACTICE AND PROCEDURE* § 5421 (1980) [hereinafter *FEDERAL PRACTICE AND PROCEDURE*].

⁹⁴ "No state has yet recognized a privilege for research sources." *Id.* § 5430, at 822. This is not to say that state law may never provide a pertinent privilege. See *Board of Trustees of Leland Stanford Jr. Univ. v. Superior Court*, 119 Cal. App. 3d 516, 174 Cal. Rptr. 160 (Ct. App. 1981) (refusing to order research materials turned over because they have no "direct relevance" and revelation would infringe privacy rights guaranteed by the state constitution).

⁹⁵ In a case such as *American Tobacco*, where litigation has occurred across the nation, and the researcher has gathered material nationwide, interesting arguments might be made about how to identify the state whose law should be applied to determine whether a privilege should be found. For a discussion of these choice of law problems, see *FEDERAL PRACTICE AND PROCEDURE*, *supra* note 93, § 5435.

vious confrontation regarding similar subpoenas between the tobacco companies and Mt. Sinai in state court. In the face of this thin record, federal judges may be tempted to rely on "general" principles of law and disregard state law. Thus, in *Deitchman* the Seventh Circuit cited no state law in its discussion of privilege. In other cases, the federal courts have acknowledged that there is no privilege under state law but have entered protective orders anyway.⁹⁶ On balance, the need to rely on state law is likely to retard the development of a privilege approach.

Beyond that, the path to creation of a new privilege would not be easy even if the question were controlled by federal law. Federal Rule of Evidence 501 allows the federal courts to create new privileges on the basis of "reason and experience." Although the lower courts have developed some new privileges,⁹⁷ the Supreme Court has taken a restrictive attitude and has recently rejected privilege arguments quite similar to those advanced for a researcher's privilege. In *University of Pennsylvania v. EEOC*,⁹⁸ a 1990 decision, the Court refused to find a qualified academic freedom privilege for peer review materials in tenure files. Responding to a complaint of discrimination in denial of tenure, the Equal Employment Opportunity Commission subpoenaed tenure files on the complainant and five other people. The university argued that courts should "require more than relevance in order to protect tenure review documents"⁹⁹ to protect academic freedom. The Court disagreed.

In large measure the *University of Pennsylvania* decision rested on the legislative history of Title VII, which Congress had amended to cover educational institutions despite arguments for immunity based on similar academic freedom notions.¹⁰⁰ But the university also advanced a First Amendment claim akin to arguments made by commentators for a researcher's privilege.¹⁰¹ The university began by invoking precedents that emphasized the

⁹⁶ *E.g.*, *Richards of Rockford, Inc. v. Pacific Gas & Elec. Co.*, 71 F.R.D. 388 (N.D. Cal. 1976).

⁹⁷ A prominent example is the privilege for self-critical analysis. *See Bredice v. Doctors Hospital, Inc.*, 50 F.R.D. 249 (D.D.C. 1970), *aff'd*, 479 F.2d 920 (D.C. Cir. 1973); Note, *The Privilege of Self-Critical Analysis*, 96 HARV. L. REV. 1083 (1983). The viability of this privilege is still open to debate.

⁹⁸ 493 U.S. 182 (1990).

⁹⁹ *Id.* at 188.

¹⁰⁰ *See id.* at 187-90.

¹⁰¹ *E.g.*, O'Neil, *supra* note 46, at 845-53.

need to insulate the university against state regulation, including regulation of selection of faculty.¹⁰² This protection depends on the tenure system, the university asserted, and that in turn relies on the peer review process. Hence, the university concluded, granting access to peer review materials would erode the linchpin of academic freedom because that would have a chilling effect on candid peer evaluation.

The Court was not moved, finding that the cases the university relied upon were different because they involved efforts "to control or direct the *content* of the speech engaged in by the university or those affiliated with it."¹⁰³ On this occasion, however, the university asserted only that discovery would have an adverse effect on the quality of instruction and scholarship, and not that the subpoenas "[were] intended to or [would] in fact direct the content of university discourse toward or away from particular subjects or points of view."¹⁰⁴ Moreover, except to the extent such inquiry would restrain the university's ability to discriminate on forbidden grounds, there was no governmental effort to second-guess legitimate academic judgments.¹⁰⁵ Hence, the university sought "an *expanded* right of academic freedom."¹⁰⁶ Because similar chill arguments are made in favor of a researcher's privilege,¹⁰⁷ the Court's resistance to them in *University of Pennsylvania* augurs a poor reception for the researcher.

In a related area, the Court resisted First Amendment arguments for a privilege allowing reporters to withhold the identity of sources in *Branzburg v. Hayes*.¹⁰⁸ The Court was closely divided, however, and the lower courts have recognized a qualified reporter's privilege to protect sources.¹⁰⁹ Indeed, Professor O'Neil has found that the lower courts' treatment of the problem "has left *Branzburg* almost more the exception than the rule."¹¹⁰ In addition, many states have created such reporters'

¹⁰² See 493 U.S. at 190-91 (quoting, *inter alia*, *Sweezy v. New Hampshire*, 354 U.S. 234, 263 (1957)).

¹⁰³ 493 U.S. at 191 (emphasis in original).

¹⁰⁴ *Id.* at 192.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.* (emphasis in original).

¹⁰⁷ See text accompanying notes 114-17 *infra*.

¹⁰⁸ 408 U.S. 665 (1972).

¹⁰⁹ See FEDERAL PRACTICE AND PROCEDURE, *supra* note 93, § 5426, at 745-47.

¹¹⁰ See O'Neil, *supra* note 46, at 847; see also FEDERAL PRACTICE AND PROCEDURE,

privileges by statute, or under the state constitution, often affording very broad protection.¹¹¹ Despite this ambiguous reception in the lower courts, the Court invoked *Branzburg* in *University of Pennsylvania* as "similar" because *Branzburg* rejected a constitutional argument for protection against "incidental burdening" due to enforcement of civil or criminal statutes of general applicability.¹¹²

At the constitutional level, then, the Supreme Court precedents do not augur well for a researcher's privilege against civil discovery, and the arguments for a common law privilege via a balancing process similarly confront real difficulties. Balanced against the creation of such a privilege is the customary justification for discovery, one that becomes especially forceful when the researcher's work product will be used in one manner or another at trial.¹¹³ Given the Court's commitment to access to evidence, it seems difficult to justify the sort of privilege researchers want even in those cases where federal common law may be applied under Federal Rule of Evidence 501.

The first argument for a privilege stresses the risk that allowing discovery may chill research in areas that are likely to be pertinent to litigation. As a threshold matter, this seems a curious reason for a privilege because privileges are usually keyed to protecting communications. Some courts have rejected researchers' arguments on this ground,¹¹⁴ but this objection may not be fatal. Other privilege claims, such as the privilege for self-critical inquiry, look beyond protecting communications and focus on

supra note 93, § 5426, at 745-46 ("The ink was scarcely dry on Justice White's majority opinion [in *Branzburg*] when the process of distinguishing it began.").

¹¹¹ For example, the California Constitution and Evidence Code has been found to afford very broad protection to the media in civil and even in connection with criminal cases. CAL. CONST. art. I, § 2, subdiv. (b); CAL. EVID. CODE § 1070 (West Supp. 1991) See, e.g., *New York Times Co. v. Superior Court*, 51 Cal. 3d 453, 796 P.2d 811, 273 Cal. Rptr. 98 (1990) (newspaper could refuse to turn over unpublished photographs of accident that gave rise to products liability action); *Delaney v. Superior Court*, 50 Cal. 3d 785, 789 P.2d 934, 268 Cal. Rptr. 753 (1990) (reporter did not have to disclose unpublished non-confidential eyewitness information unless defendant demonstrated reasonable likelihood that information would be helpful in defense).

¹¹² 493 U.S. at 193.

¹¹³ See text accompanying notes 54-55 & 74 *supra* (regarding likely use of researchers' work at trial in *American Tobacco* and *Deitchman*).

¹¹⁴ E.g., *Solarex Corp. v. Arco Solar, Inc.*, 121 F.R.D. 163, 168 (E.D.N.Y. 1988), *aff'd*, 870 F.2d 642 (Fed. Cir. 1989) ("the Society's proposed privilege is apparently not testimonial in nature but rather a form of qualified immunity from discovery").

the possibility that discovery will deter people from investigating thoroughly.¹¹⁵ Moreover, this prospect raises risks that discovery might become a tool to shape the content of academic research, which the Supreme Court suggested could implicate constitutional values.¹¹⁶ Thus, some courts have worried about Scenario *B*—that subpoenas could be used with the intent to frustrate research that was viewed as threatening.¹¹⁷

The abstract possibility of deterrence does not, of itself, warrant the creation of a new privilege. Instead, there should be a concrete showing that such a threat exists. In *American Tobacco Mt. Sinai* tried to demonstrate that the tobacco companies were using discovery to interfere with research, stressing that over two hundred subpoenas had been made for Dr. Selikoff's data, and that it had received multiple subpoenas from tobacco companies for that data.¹¹⁸ Given their resources, and their efforts in other contexts to prevent disclosure of potentially injurious material,¹¹⁹ the tobacco companies seem to have earned our suspicion in this regard.¹²⁰

It is nevertheless hard to conclude that this concern warrants creation of a privilege.¹²¹ The basic argument is that re-

¹¹⁵ Thus, it has been suggested that this privilege is justified in part to avoid the chilling effect of discovery:

[I]f a plaintiff obtains discovery, there may be a direct chilling effect on the institutional or individual self-analyst; this effect operates to discourage the analyst from investigating thoroughly and frankly or even from investigating at all.

Note, *supra* note 97, at 1091-92. The idea, then, is to encourage institutional introspection, not just communication.

¹¹⁶ See text accompanying notes 104-05 *supra*. Note, however, that the government's power to influence the content of academic research through funding decisions far exceeds any impact that discovery could have.

¹¹⁷ See *Dow Chemical Co. v. Allen*, 672 F.2d 1262 (7th Cir. 1982):

It is not unduly speculative to imagine that a large private corporation, through repeatedly securing broad-based subpoenas requiring total disclosure of all notes, reports, working papers, and raw data relating to on-going studies, could make research in a particular field so undesirable as to chill or inhibit whole areas of scientific inquiry.

Id. at 1276 n.25.

¹¹⁸ See text accompanying note 58 *supra*.

¹¹⁹ See, e.g., *Cipollone v. Liggett Group, Inc.*, 785 F.2d 1103 (3d Cir. 1986) (tobacco companies made effort to use protective orders to prevent plaintiff from disclosing material they turned over through discovery to other plaintiffs).

¹²⁰ See note 146 *infra* (regarding tobacco company efforts to discredit research on the dangers of smoking).

¹²¹ See *Developments in the Law—Privileged Communications*, 98 HARV. L. REV.

searchers will avoid controversial areas because they want to avoid controversy. But controversy is often a magnet for attention to academic work. Although there are undoubtedly some researchers who eschew the limelight, there are certainly others who flock to it. So controversy alone is not sufficient to justify a privilege. Moreover, controversy may attract the lifeblood of much academic research—funding—and thereby alter the academic research agenda.¹²² With regard to governmental funding, such decisions may become more overtly the subject of lobbying or political pressure. The success of AIDS advocates in promoting funding for AIDS research seems to have generated a new kind of advocacy; some women's groups now intend to emulate AIDS advocates to pry loose more funding for research regarding breast cancer.¹²³ Controversy alone therefore seems insufficient to justify a new privilege; for every scientist who is deterred by controversy, it is reasonable to expect that another will be attracted, particularly if funding comes in the wake of controversy.

Controversy involving litigation might be another matter, however. The current litigation phobia that afflicts broad sectors of our nation, and particularly the professional classes, could provide a reason for treating such situations differently. Certainly the capacity of litigants to activate the long arm of the law through discovery could make controversial areas involving litigation different and more daunting than others. The jaded might say that no area is litigation-proof, but that does not dispel the possibility that many scientists would see certain research topics as presenting a greater risk of involvement in litigation.

But we do not have evidence to support the conclusion that litigation is an especially daunting type of controversy for researchers. To the contrary, there is reason to doubt this. Again Bendectin provides an example. If the theory were correct, one would expect researchers to shun Bendectin research when the prospect of litigation reared its head. As Professor Sanders' ex-

1450, 1610 (1985) ("No special considerations dictate the creation of a general privilege for all academic researchers . . .").

¹²² E.g., Eisenberg, *Academic Freedom and Academic Values in Sponsored Research*, 66 *TEX. L. REV.* 1363, 1376-77 (1988) (the risk that researchers will gravitate to topics for which funding is available is an intractable problem).

¹²³ Gross, *Turning Disease Into Political Cause: First AIDS, and Now Breast Cancer*, *N.Y. Times*, Jan. 7, 1991, at A12, col. 1.

haustive study of Bendectin litigation shows, however, precisely the reverse seems to have happened:

[In connection with the Bendectin litigation,] it is clear that science was driven by the law. The study of Bendectin became a hot topic and substantial resources were mobilized to study it. This mobilization can be understood at several levels. Because Bendectin was a hot topic, articles on the subject would be relatively likely to find their way into print. Careerist concerns might cause academics to select topics that would produce published articles in prestigious journals. Moreover, the government, through the FDA, encouraged research by holding out the potential to get grants to study Bendectin's effects. Finally, the litigation itself generated research, as the parties to the litigation encouraged work on Bendectin. If, ultimately, the fate of the Bendectin cases rested in large part on the epidemiological findings, the causal effects ran in both directions. Legal needs gave shape and direction to the epidemiological study of teratogenic effects. The volume and sophistication of studies specifically on Bendectin was in large part the result of the litigation.¹²⁴

We have already seen that litigation may distort the research agenda of science;¹²⁵ at least one editorial in a scientific journal raised eyebrows about the expenditure of research time on Bendectin, even after it had been withdrawn from the market.¹²⁶ The Bendectin experience suggests that there is little reason to fear that litigation will, on balance, deter researchers from entering an area.

This experience seems to have been repeated in connection with the research involved in *American Tobacco*. Despite the supposed barrage of discovery directed toward him, Dr. Selikoff has persevered. And other research on the link between cigarettes and lung cancer continues as well.¹²⁷ Whether or not litigation unduly attracts scientific research, it does not seem to have a provable chilling effect.

The other basic argument is that a privilege is essential to persuade potential research subjects to agree to submit to the

¹²⁴ Sanders, *The Bendectin Litigation: A Case Study in the Life-Cycle of Mass Torts*, 43 HASTINGS L.J. (forthcoming 1992).

¹²⁵ See text accompanying note 43 *supra*.

¹²⁶ Scialli, *supra* note 20, at 157 ("The filling of a gap in knowledge is unquestionably an appropriate use of science, but clinicians may be curious about the expenditure of time and energy on Bendectin, a formulation which is no longer marketed.")

¹²⁷ See Angier, *Cigarettes Trigger Lung Cancer Gene, Researchers Find*, N.Y. Times, Aug. 21, 1990, at C3, col. 2.

study. This comes closer to a traditional focus on communications in privilege law, and can be analogized to the reporters' privilege recognized by many lower federal courts.¹²⁸ But for many reasons it does not justify the sort of privilege researchers have claimed. First, it is too broad because research does not always involve human subjects. Laboratory animals may be used,¹²⁹ and for the present there is no requirement that their consent be obtained.¹³⁰ Other studies may not involve any live subjects.

Second, broad assertions about the need for confidentiality need to be scrutinized. True, there is little empirical basis for the assumed necessity of such confidentiality under traditional privileges such as the attorney-client privilege.¹³¹ Yet the courts cannot and do not credit all arguments about the need for confidentiality that can be imagined in the abstract. Even researchers recognize that promises of confidentiality are made when they are not necessary.¹³² There is surely ground to doubt that confidentiality is always essential.

Third, and most important, the confidentiality argument does not go far enough to support a general researcher's privilege. Protection of subjects' identities where there is reason to fear disclosure need not depend upon creation of a privilege for researchers, as the treatment of confidentiality below demon-

¹²⁸ See text accompanying notes 108-11 *supra*; FEDERAL PRACTICE AND PROCEDURE, *supra* note 93, § 5430, at 821 ("The arguments favoring a privilege for scholarly research sources are often based on the premise that supports the newsmen's privilege . . .").

¹²⁹ *E.g.*, *Dow Chemical Co. v. Allen*, 672 F.2d 1262 (7th Cir. 1982) (rhesus monkeys).

¹³⁰ Legal limitations have been imposed on the use of animals in laboratory research. See generally Dresser, *Assessing Harm and Justification in Animal Research: Federal Policy Opens the Laboratory Door*, 40 RUTGERS L. REV. 723 (1988). The new approach relies on humans to evaluate the propriety of research, not on informed consent of the research subjects. See *id.* at 728-31.

¹³¹ *E.g.*, Louisell, *Confidentiality, Conformity and Confusion: Privileges in Federal Court Today*, 31 TUL. L. REV. 101, 112 (1956) (disclosure promotion theory underlying attorney-client privilege based on "sheer speculation"); Saltzburg, *Corporate Attorney-Client Privilege in Shareholder Litigation and Similar Cases: Garner Revisited*, 12 HOFFSTRA L. REV. 817, 822 (1984) (privilege based on "an educated guess about behavior"); Note, *Functional Overlap Between the Lawyer and Other Professionals: Its Implications for the Privileged Communications Doctrine*, 71 YALE L.J. 1226, 1236 (1962) ("The mythical average American is, as likely as not, either misinformed or uninformed about the attorney-client privilege.").

¹³² Holder, *supra* note 47, at 9 ("Promises of confidentiality are routinely included in consent forms, even about information that reasonable people would probably not consider necessary to hide.").

strates.¹³³ Indeed, as suggested by the idea that data sharing is an ethical obligation of researchers,¹³⁴ there are ways to protect confidentiality while allowing sufficient access to the data to permit evaluation of the research conclusions. Hence, the customary response to this problem is to craft some sort of protective order.

In sum, the requisites for creation of a new privilege do not appear to be satisfied, and the discovery management route is therefore likely to continue to prevail under amended Rule 45. This approach avoids disputes about who is eligible for privilege protection¹³⁵ and focuses instead on the competing interests.

IV. TOWARD A BALANCED RESOLUTION OF LITIGATION/SCIENCE DISCOVERY TENSIONS

[I]n this context, we cannot apply a *per se* rule; instead we must balance the competing interests.

*Judge Jack Weinstein*¹³⁶

Whatever the rubric under which it is done, the task of reconciling litigation and science when discovery is contested requires evaluation of the contending concerns. This Part examines these concerns and provides perspectives for future evaluation that should be used under amended Rule 45.¹³⁷ The general starting points are derived from the current climate for discovery: Access should be allowed to permit full preparation for trial and, at the same time, scientific research should not be

¹³³ See text accompanying notes 184-90 *infra*.

¹³⁴ See text accompanying notes 138-47 *infra*.

¹³⁵ Second Circuit case law already contains an example of such a conundrum that sounds like a law professor's invention. Police investigating possible arson in connection with a restaurant fire questioned the restaurant's waiters. One of them, a Ph.D. candidate at the State University of New York at Stony Brook, claimed a researcher's privilege for a journal he kept of his observations at work. He explained that his job waiting tables was actually field work for his dissertation on "The Sociology of the American Restaurant." Analogizing this situation to the news reporter's privilege, Judge Weinstein partially upheld the waiter's claim. *In re Grand Jury Subpoena*, 583 F. Supp. 991 (E.D.N.Y. 1984). The Second Circuit reversed, however, without ruling whether there ever should be such a privilege, because the waiter had not made a sufficient showing of the nature and methodology of his scholarship or of the need for assurances of confidentiality to conduct the study. *In re Grand Jury Subpoena*, 750 F.2d 223 (2d Cir. 1984). Although these definitional problems can also arise with the reporters' privilege that the lower courts have devised, the discovery management approach seems suited to avoid preoccupation with them.

¹³⁶ *Apicella v. McNeil Laboratories, Inc.*, 66 F.R.D. 78, 82 (E.D.N.Y. 1976).

¹³⁷ See note 9 and accompanying text *supra*.

unduly impeded by the discovery. Both Scenario A and Scenario B must be kept in mind.

A. *Data Sharing in Science*

A suitable starting point is to consider access to research data within the scientific community. This was the form of openness that C.P. Snow had in mind when he wrote that science was done in the open. If access is granted to further the purposes of science, that provides a notable analogy when access is sought to further the purposes of litigation. As we shall see, the themes that emerge in connection with sharing among scientists recur when access is sought for purposes of litigation.

There is broad expressed support for data sharing. A 1985 study by the National Academy of Sciences concluded with a number of recommendations, of which the first was: "Sharing data should be a regular practice."¹³⁸ Such sharing furthers the goals of science by affording opportunities for a variety of further uses of the data. Needless to say, where sharing obviates costly data collection by later researchers, it saves scientists time and money. Among other things, sharing also allows reanalysis that can serve as verification of the original researcher's conclusions.¹³⁹ Moreover, with the emergence of computers to store and retrieve data, sharing has in many instances become much easier than it was when scientists used less sophisticated technology.¹⁴⁰ At least at the level of ideals, Snow's enthusiasm for openness receives widespread support and benefits from enhanced technology.

There are counterpressures, however. One continuing source of friction is the desire of some who fund research to keep the results secret. Classified research strikes at the core of the tenet that scientists should be able to build on the work of others. Recently, for example, Stanford University sued a federal agency when it awarded a research contract to another university after Stanford refused to accept a requirement that agency approval be required before any results could be published, and

¹³⁸ NATIONAL ACAD. PRESS, SHARING RESEARCH DATA 25 (S. Feinberg, M. Martin & M. Straf eds. 1985).

¹³⁹ *Id.* at 10.

¹⁴⁰ See, e.g., Sterling & Weinkam, *Sharing Scientific Data*, 33 COMMUNICATIONS OF ASS'N FOR COMPUTING MACHINERY 112, 113 (1990).

a district judge decided in Stanford's favor.¹⁴¹

Even where there are not outside restraints of this character, nobody knows whether most scientists live up to their ideals.¹⁴² Although some federal funding agencies have come to insist increasingly on sharing, knowledgeable observers perceive a decline in the willingness of scientists to share their data.¹⁴³ In large measure, this situation results from the reality that "[s]haring data primarily benefits science and society; the costs are borne mostly by the initial investigators."¹⁴⁴

The costs that sharing can impose on the initial researcher resemble the objections scientists have to turning over their data through discovery. This overlap suggests a reason for some skepticism about the scientists' objections; in resisting disclosure scientists are to a certain extent resisting a central tenet of science. It is certainly true that use of research data in litigation is not one of the purposes for which scientists extol data sharing. Litigants like the tobacco companies cannot easily claim to be anxious to further the goals of science when they seek data through discovery. Thus, there is at least the prospect of some reciprocal advantage for the scientist who shares data; she may later get some in return. As a result, the costs tend to look quite different from the vantage point of science.

Worse yet, as Mt. Sinai urged in *American Tobacco*, some litigants seem to have purposefully pursued a course of conduct that contradicts the goals of science by refusing to reveal the results of research they commissioned,¹⁴⁵ and by organizing a

¹⁴¹ Board of Trustees Leland Stanford Junior Univ. v. Sullivan, 19 Media L. Rep. (BNA) 1345 (D.D.C. Sept. 26, 1991). See Perlman, *Stanford Wins Censorship Case*, S.F. Chron., Sept. 27, 1991, at A3, col. 3; Sturgess, *Stanford Battles NIH Over Confidentiality Pledge*, Legal Times, Feb. 18, 1991, at 12; Perlman, *Stanford Sues Heart Agency Over Contract*, S.F. Chron., Oct. 30, 1990, at A2, col. 4.

¹⁴² See *Agencies, Journals Set Some Rules*, 248 SCIENCE 954 (1990) ("There are no objective data on data sharing . . .").

¹⁴³ See *Data Sharing: A Declining Ethic?*, 248 SCIENCE 952 (1990).

¹⁴⁴ SHARING RESEARCH DATA, *supra* note 138, at 18.

¹⁴⁵ See Appendix, *supra* note 56, at A848-51 (describing tobacco industry funding of research whose results were not disclosed). The tobacco companies are hardly unique offenders in this regard. According to reports, the companies that marketed asbestos products recruited scientists to study risks of the product but hushed up the results of the study. Consider the following description of a 1952 conference on the dangers of asbestos:

If a significant number of the fifty-odd medical doctors who attended the Seventh Symposium had spoken out or had insisted that its papers and discus-

campaign of scientific misinformation to discredit scientists whose research revealed the hazards of smoking.¹⁴⁶ Since a researcher may legitimately balk at turning over data to one who lacks the competence or inclination to use it properly, resisting such malign forces may seem, to the researcher, to be entirely consistent with generally endorsing data sharing to further the interests of science.

From the perspective of the litigation system, however, this

sions be made public, they might well have blown the lid off the asbestos coverup and saved thousands of lives, untold pain and suffering, and millions of dollars. Instead . . . the conference simply marked the nadir of a year in which the asbestos industry, with the tacit approval of its insurers, successfully suppressed information about the most important industrial carcinogen the world has ever known.

P. BRODEUR, *supra* note 50, at 179-80.

One reaction to this problem would be to condition discovery of research data on the revelation of such industry research. In general, however, where the litigation has erupted, such revelation may follow. In tobacco litigation, for example, it seems that plaintiffs have already obtained much of such information from the tobacco companies through discovery. See Appendix, *supra* note 56, at A913-39 (deposition of Dr. James Mold, former assistant director of research of Liggett & Myers). Thus, Judge Sarokin noted in a prominent tobacco case:

Plaintiff offered evidence demonstrating that adverse results generated by research eventually conducted by the cigarette companies themselves were suppressed and concealed. At least one scientist testified as to threats made to him if he published his findings, and there was other evidence of attempts to suppress or coerce others.

Cipollone v. Liggett Group, Inc., 683 F. Supp. 1487, 1491 (D.N.J. 1988).

¹⁴⁶ See *Cipollone*, 683 F. Supp. at 1490:

Evidence presented by the plaintiff, particularly that contained in documents of the defendants themselves, indicates the development of a public relations strategy aimed at combating the mounting adverse scientific reports regarding the dangers of smoking. The evidence indicates further that the industry of which these defendants were and are a part entered into a sophisticated conspiracy. The conspiracy was organized to refute, undermine, and neutralize information coming from the scientific and medical community and, at the same time, to confuse and mislead the consuming public in an effort to encourage existing smokers to continue and new persons to commence smoking.

In this regard plaintiff has presented evidence, again, mainly from the files of the defendants themselves, which demonstrates a deliberate intent and purpose to challenge all adverse medical and scientific evidence regarding smoking, irrespective of its truth or validity. Indeed, the strategy to meet the claims of the scientific community was formulated before the contents of the scientific evidence were known. Defendants determined that if a report was publicized which demonstrated the dangers of cigarette smoking, attempts would be made to offset it, and even attack the qualifications of the researcher, if necessary.

The asbestos industry similarly tried to discredit scientific reports on the dangers of the product. See P. BRODEUR, *supra* note 50, at 124-27.

scruple is not persuasive. Almost nobody is pleased to be on the receiving end of nonparty discovery. Whether or not scientists believe use of data in litigation is a valid reason for access, where the data appear important to proper resolution of the litigation, it is fundamental to the whole idea of discovery that access be allowed. So the analogy from litigation to ordinary data sharing among scientists will be a strong one for judges. They will also be concerned that scientists' revulsion at litigants like the tobacco companies could color their research practices and conclusions. Even scientists recognize this problem:

Many scientists take an activist role in various issues and some may use their position and acknowledged expertise to present findings that are relevant to a contentious public issue. But sometimes conclusions publicized by scientists who also play a role as advocates, rest on stubborn belief rather than acceptable analysis of data.¹⁴⁷

Hence the problems caricatured in Scenario A may be most severe in such cases; thus may Dr. Humanitarian turn into Dr. Crackpot.¹⁴⁸ Faced with such a possibility, a judge will be impatient with the scientist's argument that use of data in litigation is not as valid as use in science.

B. *Scientists' Proprietary Interests*

One type of concern courts should consider when research data are sought can be labeled proprietary interests. In one sense, these might include protection of financial gain that could flow from disclosures.¹⁴⁹ This concern was the stimulus behind amended Rule 45, which is addressed to the problem of the "drafted expert."¹⁵⁰ Where an expert is compelled by discovery to use her expertise to provide an opinion for litigation, forceful arguments that there has been a taking can be made.¹⁵¹ But

¹⁴⁷ Sterling & Weinkam, *supra* note 140, at 118.

¹⁴⁸ Recall that even Dr. Selikoff might be perceived as a crusader. See text accompanying notes 67-68 *supra*.

¹⁴⁹ Cf. *Data Sharing*, *supra* note 143, at 952 (boom in commercial biotechnology prompted efforts to guard data to capitalize on its value in the marketplace).

¹⁵⁰ Thus, the advisory committee's notes explain that the rule as amended "provides appropriate protection for the intellectual property of the non-party witness."

¹⁵¹ See, e.g., *Plummer v. R.H. Macy & Co.*, 69 A.D.2d 765, 414 N.Y.S.2d 921 (1st Dep't 1979) (doctor subpoenaed to testify after refusing to provide medical report for free). See generally Gelfand, "Taking" *Informational Property Through Discovery*, 66 WASH. U.L.Q. 703 (1988) (characterizing discovery as an unconstitutional taking where

these concerns are not analogous to the situation presented here; a subpoena could not be used to force Dr. Selikoff to undertake the study he actually made if he in fact had chosen not to pursue it. When Mt. Sinai invoked the New York rule that an expert could not be compelled to render an opinion in *American Tobacco*, the court properly rejected it.¹⁵² Far from asking Dr. Selikoff to prepare or render an opinion, the tobacco companies were seeking data because he had already given his opinion, and they wanted to be able to argue that this opinion should be qualified or rejected.

In a related vein, where scientific research has a market value, protection may be warranted, and a taking argument could be made if protection were not forthcoming. Even where that argument can be made, however, use of the fruits of such research in court may give rise to the risks presented in Scenario A since the Dr. Crackpots of this world may premise peculiar opinions on the research.¹⁵³ More often, however, Scenario A will not involve this concern, and it was not involved in *American Tobacco*. Certainly Mt. Sinai was not resisting discovery because it hoped to market Dr. Selikoff's data for a profit. That would hardly jibe with the academic freedom mantle it assumed in support of its request for a researcher's privilege; researchers do not oppose discovery because they want to use the data to make money.

Thus, the conventional proprietary interest thrust of amended Rule 45 misses the mark for the situations that concern us. Instead, the focus in such cases will be on what might be called a scholarly proprietary interest. This is more in tune with science's longstanding goals: Scientists who have laboriously gathered data have a legitimate interest in mining the data for insights. Anyone who has been involved in American higher education will know that recognition flows to those who publish while others perish. Not surprisingly, exactly this concern has been cited as a reason scientists will not share data freely with

the party required to provide information is in the business of selling such information and the party seeking discovery ordinarily would have to pay to obtain the information in the marketplace).

¹⁵² 880 F.2d at 1528-30.

¹⁵³ A possible example is presented by the use of DNA typing for identification in criminal cases. See note 173 *infra*.

other scientists.¹⁵⁴ To take away this incentive by granting others access via litigation could seriously erode the motivation to undertake thorough data collection.¹⁵⁵

But this scholarly proprietary interest can easily be taken too far. It is one thing to afford the initial researcher a good first chance to mine the data. Particularly given the prospect that other insights could be gleaned from the data,¹⁵⁶ however, it is quite another to give the initial researcher a permanent veto on access, at least where access is legitimately needed for use in litigation. Purely in terms of science, the penchant for secrecy of some scientists can be criticized. Scientific journals often insist that data and conclusions be kept under wraps until published in articles, but some scientists have begun to question these delays in the release of information.¹⁵⁷ The justification offered for continued secrecy is that peer review is necessary to scrutinize work before it is reported and that premature release of possibly unfounded conclusions would be dangerous. But some suggest that insistence on delay is unjustified and that it partly serves to increase the profits of the journals.¹⁵⁸ Resolving this debate is well beyond the scope of this Article, but the fact that it is occurring indicates that courts should be uneasy about leaving the timing of access entirely to scientists in the thrall of scientific journals.

At the least, once the research results are published this

¹⁵⁴ Clubb, Austin, Geda & Traugott, *Sharing Research Data in the Social Sciences*, in *SHARING RESEARCH DATA*, *supra* note 138, at 39, 69 (“[R]esearchers place such a high premium on being the first to publish a particular finding and are in such competition with each other to do so that most would be unwilling to make basic research data available to other potentially competitive researchers.”); *see also* A. KOHN, *supra* note 25, at 5 (“Scientists seek recognition: they want to publish and to see their names in print; they wish to be recognized by their fellow scientists Scientists fight fiercely for priority of their discoveries.”).

¹⁵⁵ *See* *SHARING RESEARCH DATA*, *supra* note 138, at 26:

Analyzing data and reporting discoveries are clearly more glamorous tasks to many scientists than collecting data. The motivation of possible discoveries is needed even to contemplate data collection, and science is served well by this motivation. Thus, initial investigators are entitled to be the first to examine, summarize, and analyze their data.

¹⁵⁶ *See* text accompanying notes 176-77 *infra*.

¹⁵⁷ *See* Altman, *With Lives At Stake, Issue Is Secrecy of Data*, *N.Y. Times*, Jan. 15, 1991, at C3, col. 1.

¹⁵⁸ *See id.* (“One area of contention is that embargoes have helped scientific journals reap large profits.”).

proprietary rights argument would have minimal force.¹⁵⁹ In *American Tobacco*, for example, Dr. Selikoff's studies were ongoing but his articles had already been in the literature for almost two decades. Insistence on access to the data underlying published conclusions accords with the policy of some scientific journals that data underlying published conclusions be made available.¹⁶⁰ Where publication has not yet occurred but is contemplated, more circumspection is in order. If there is no prospect of further publication, however, the mere desire of the researcher to keep data under wraps seems entitled to little weight.¹⁶¹ In sum, as the scientific community's endorsement of data sharing suggests, the proprietary interests of the researcher have very limited force as to research data on which published results are based.

C. Burden

Quite different concerns are pertinent where compliance with the subpoena will be an onerous task; such problems are a central feature of Scenario B. As an initial matter, indications that the subpoena is designed to harass the scientist or impede research provide strong reasons for quashing it. The Federal Rules of Civil Procedure direct the judge to limit discovery that is unduly burdensome and suggest that indications of harassment are pertinent to that question;¹⁶² surely amended Rule 45 calls for such treatment. Besides the breadth of the subpoena, indications that the party really has little need for the information in connection with the lawsuit¹⁶³ suggest that there may be some such malign purpose. Cases in which courts find that dis-

¹⁵⁹ It is worth noting here that it is likely that publication will usually be essential to show a need for access. See text accompanying notes 179-80 *infra*.

¹⁶⁰ See *Sharing Research Data*, 24 MED. CARE 879, 879 (1986) ("It is the expectation of the editors that the authors of papers published in MEDICAL CARE will allow access to their data."); see also SHARING RESEARCH DATA, *supra* note 138, at 31 ("Recommendation 13. Journals should strongly encourage authors to make detailed data accessible to other researchers.").

¹⁶¹ Note that more difficult problems are presented when the researcher has not published anything, and perhaps has aborted the data-collection effort. These circumstances bear directly on the need for access, see text accompanying notes 179-80 *infra*, but might be said to impinge on the scholarly proprietary interest if disclosure of the research would somehow embarrass the researcher.

¹⁶² See FED. R. CIV. P. 26(b)(1), 26(g)(2).

¹⁶³ See text accompanying notes 171-83 *infra* for discussion of need for access.

covery has been pursued for an ulterior motive and impose sanctions reflect such an evaluation.¹⁶⁴

The fact that the litigant has served a blunderbuss subpoena does not compel a finding of abuse, however. As the Seventh Circuit explained in *Deitchman*:

Such a sweeping subpoena means about as much as the asking price for a rug in an Oriental bazaar. It is normally just a means of opening discussion between discoverer and discoveree. The discoverer asks for too much because he is not, until he is told, aware of the discoveree's problems. When a court is confronted with a motion to quash such a subpoena, its duty is not to deny any discovery, but to reduce the demand to what is reasonable, considering the discoverer's needs and the discoveree's problems.¹⁶⁵

Ordinarily, the focus is therefore on narrowing the subpoena, not forbidding discovery altogether.¹⁶⁶

A court confronted with burden arguments by a scientist should implement the cost/benefit approach generally applicable to discovery. As it does so, it may refer as well to what might reasonably be expected of scientists outside the discovery context, keeping in mind the push for data sharing as an ethic of science. In the scientific community researchers are encouraged to design their procedures to facilitate such sharing. Thus, the National Academy of Sciences study urged that accommodation of data sharing be built into research programs.¹⁶⁷ To implement this proposal, the study suggested further that grant applications include in the budget a component for the costs associated with data sharing, and that granting agencies take account of that cost in making awards.¹⁶⁸ The prospect of subpoenas may prompt further foresight. For example, one researcher reacted to

¹⁶⁴ *E.g.*, Appeal of Licht & Semonoff, 796 F.2d 564, 567 (1st Cir. 1986) (Deposition answers were used in proxy fight; court imposed sanctions because lawyer's "primary purpose" was "to gain information to disseminate to shareholders, not to advance the legal action.").

¹⁶⁵ 740 F.2d at 560.

¹⁶⁶ Consistent with this focus, in many districts the parties are required to meet to resolve or narrow discovery disputes before bringing discovery motions before the court. *E.g.*, N.D. Cal. Local Rule 230-4(a) ("The court will entertain no motion pursuant to Rules 26 through 37 . . . unless counsel shall have previously conferred concerning all disputed issues.").

¹⁶⁷ See SHARING RESEARCH DATA, *supra* note 138, at 27 ("Recommendation 4. Plans for data sharing should be an integral part of a research plan whenever data sharing is feasible.").

¹⁶⁸ *Id.* at 29.

American Tobacco by suggesting that, if it will be important to remove identifiers to protect the confidentiality of subjects, the identifiers should be removed at the outset to avoid a heavy burden later should there be a subpoena.¹⁶⁹ In other contexts, courts have been skeptical about discovery burdens that seem to result from the record-keeping practices of the party resisting discovery,¹⁷⁰ and the practices of the scientific community seem relevant to assessing burden arguments by researchers.

Courts will have to proceed sensibly in this area. *American Tobacco* illustrates the kind of accommodation that is possible. Initially the tobacco companies sought a much broader array of data than they asked for in their later federal subpoenas. Dr. Selikoff responded by asserting that it would take him thousands of hours to redact this large volume of material to protect the confidentiality of research subjects. Eventually, the court ordered production of computer-readable materials that could be stripped of identifiers with relative ease, and the burden issue essentially dropped out of the dispute.

D. *Need for Access*

The hallmark of a qualified privilege is focus on the discovering party's need for access to the material claimed to be privileged. Amended Rule 45 similarly relies on the analogous showing of need required for discovery of work product.¹⁷¹ That does

¹⁶⁹ See Holder, *supra* note 47. Thus, in discussing proper procedures for Institutional Review Boards (IRB), which approve research on human subjects (see 45 C.F.R. § 46.102(h) (1981)), Holder suggests as follows:

Where a protocol indicates that identifiers are going to be removed from data sheets, the IRB should insist that such removals be done as the data are accumulated. The researchers should not be permitted to gather all the data and then, years after the first subject was contacted, remove all the identifiers at one time. The time and effort to be spent doing so after a subpoena has been received may be so great as to disrupt many people's lives.

Holder, *supra* note 47, at 9.

¹⁷⁰ E.g., *Kozlowski v. Sears, Roebuck & Co.*, 73 F.R.D. 73 (D. Mass. 1976), in which defendant asserted that responding to plaintiff's discovery would be "the equivalent of an impossible task." The court ordered discovery nevertheless, reasoning that "[t]he defendant may not excuse itself from compliance with Rule 34, Fed. R. Civ. P., by utilizing a system of record-keeping which conceals rather than discloses relevant records." *Id.* at 76.

¹⁷¹ The advisory committee notes to amended Rule 45 explain that the need requirement it imposes "is the same as that necessary to secure work product under Rule 26(b)(3)."

not mean, however, that need will rarely be demonstrated, at least in regard to data upon which published studies are based. As Judge Weinstein has observed, in mass tort cases "epidemiologic studies on causation assume a role of critical importance."¹⁷² More generally, where a researcher's conclusions will be relied upon by witnesses at trial, as in *American Tobacco*, there are strong reasons for allowing reasonable access to the data on which they are based.¹⁷³ We have already seen such a situation; in *Deitchman* the Seventh Circuit directed access to ongoing research materials because otherwise the defendant would be unable to challenge the researcher's published conclusions.¹⁷⁴ As a counterpoint to this need factor, some courts have denied discovery of research data on the strength of assurances that the research conclusions will not be used at trial.¹⁷⁵

Somewhat different issues arise when the party seeking dis-

¹⁷² *In re Agent Orange Prods. Liab. Lit.*, 611 F. Supp. 1223, 1239 (E.D.N.Y. 1985), *aff'd*, 818 F.2d 187 (2d Cir. 1987), *cert. denied*, 487 U.S. 1234 (1988).

¹⁷³ See Graham, *Expert Witness Testimony and the Federal Rules of Evidence: Insuring Adequate Assurance of Trustworthiness*, 1986 U. ILL. L. REV. 43, 78-84. Professor Graham discusses the general problem of the "second tier expert," the person whose out-of-court opinion forms the basis for the in-court opinion testified to by another expert. He concludes that the opposing party needs "full discovery of the second tier expert" because, "[t]o effectively cross-examine the testifying expert, the attorney may have to dispute the facts, data, or opinions on which the testifying expert bases his or her opinion." *Id.* at 79; see also Kaplan & Cogan, *supra* note 90, at 223-24.

Comparable problems can arise in connection with determining whether to allow new scientific methods to serve as the basis for opinion testimony in court. The most prominent current example is the increasing popularity of DNA "typing" as a means of identification in criminal cases. Those challenging the reliability of such techniques have had difficulty obtaining information for use in court due to trade secret claims, which are another form of proprietary interest:

Efforts to evaluate scientific acceptance of a particular implementation of DNA typing technology may be hindered, however, by the desire of commercial laboratories to keep their laboratory protocols confidential in order to protect alleged trade secrets. . . . Only two small groups of scientists have actually reviewed these procedures: those chosen and approved by the companies themselves and a handful of independent experts retained by parties against whom DNA evidence has been offered (who have obtained the laboratory protocols by subpoena or court order). The independent experts have typically been bound by court order not to disclose any of the confidential information or make any public comment on it. Hence, the procedures employed by these companies are shielded from scrutiny by the scientific community at large.

Thompson & Ford, *DNA Typing: Acceptance and Weight of the New Genetic Identification Tests*, 75 VA. L. REV. 45, 59-60 (1989).

¹⁷⁴ See text accompanying note 74 *supra*.

¹⁷⁵ *E.g.*, *Apicella v. McNeil Laboratories, Inc.*, 66 F.R.D. 78, 84-86 (E.D.N.Y. 1975); *Plough, Inc. v. National Academy of Sciences*, 530 A.2d 1152 (D.C. 1987).

covery wants to go beyond the published conclusions and delve into new areas unexplored by the original researcher. In *American Tobacco*, for example, Mt. Sinai stressed that much of the data sought by early subpoenas had not been relied upon by Dr. Selikoff in his published studies. Purely as a matter of admissibility, an expert need not agree with another researcher's conclusions derived from certain data to rely on such data while testifying.¹⁷⁶ Moreover, "[t]he research potential of a well-designed data collection is rarely exhausted by the original data collector, and data collections usually have value beyond those for which they were originally designed."¹⁷⁷ In *American Tobacco* for example, the tobacco companies asserted that one reason they wanted access to the data was to perform more refined analyses that had not been possible under the computer technology available at the time Dr. Selikoff performed his studies.

This possibility of mining the data for other purposes might unduly intrude on the scholar's proprietary interest in a fair chance to be the first to announce the discoveries that can be derived from her data. In *American Tobacco*, this concern seemed fairly weak given the time lag since Dr. Selikoff's last publication and the relative indistinctness of his ongoing research interests. Moreover, where a litigant can show specific applications to this litigation that could result from alternative analyses of the data, it would seem that a researcher relying on this proprietary interest could be expected to indicate whether she intends to perform the same analyses. If not, the proprietary interest concern abates. If so, the court might well be able to await the completion of that analysis.¹⁷⁸

¹⁷⁶ Again, Bendectin provides an example. In *DeLuca v. Merrell Dow Pharmaceuticals, Inc.*, 911 F.2d 941 (3d Cir. 1990), a plaintiff's expert witness sought to premise his opinion that Bendectin could cause birth defects on data that reached other conclusions. The district court refused to allow such testimony even though the data was largely the same as that relied upon by defendant's expert for a reverse conclusion. The appellate court reversed:

Implicit in the district court's decision . . . is the principle that [Federal] Rule [of Evidence] 703 requires an expert to accept the conclusions reached by the authors of studies if the expert wishes to utilize the data underlying those studies as a basis for testimony. However, the Federal Rules of Evidence contain no requirement that an expert's testimony be based upon reasoning subjected to peer review and published in the professional literature.

Id. at 954.

¹⁷⁷ Clubb, Austin, Geda & Traugott, *supra* note 154, at 45.

¹⁷⁸ This situation would not be akin to the "drafted expert" problem that would

The difficulty with this analysis is that it could become a slippery slope toward routinely allowing access to uncompleted research not otherwise pertinent to the litigation. Sliding too far down this slope brings into play the risks caricatured in Scenario *B* in which a subpoena seriously disrupts scientific research while it is in progress. Our starting point was that discovery should be allowed despite the risks of Scenario *B* to enable the litigation system to react to the risks of Scenario *A*. But those risks disappear if the research won't have any bearing on the litigation unless discovery is allowed. Consistent with the cases that deny discovery if the research results will not be offered at trial,¹⁷⁹ the normal response should probably be to deny discovery unless the party makes an extraordinary showing that the data is likely to produce important information bearing on important issues in the case, and that no alternative source of data exists.¹⁸⁰

This analysis bears on the other factor pertinent under amended Rule 45—whether this need can be satisfied in some way other than by ordering discovery. In the “drafted expert” situation, the question would be whether the subpoenaed expert is unique, and the normal assumption would be that others could be found. Similar arguments might be made about research data. In *American Tobacco*, for example, Mt. Sinai argued that the tobacco companies should do their own research if they wanted to make a showing about the relation between smoking and exposure to asbestos in causing lung cancer.¹⁸¹ But it is likely that, as the tobacco companies were able to do, parties seeking discovery of the data underlying published results will be able to show that replicating research is unduly costly and time-consuming. More to the point, the “do it yourself” argument may often miss the mark because another study would

exist if one could by subpoena compel a researcher to undertake certain data gathering and analysis. Here the assumption is that the researcher intends to perform the analysis, and in that sense is a volunteer, although the subpoena may hurry that process up.

¹⁷⁹ See note 175 *supra*.

¹⁸⁰ In such instances, if the discovering party has itself done similar research, as was evidently true of the tobacco companies (see note 145 *supra*), that fact would weigh heavily against discovery.

¹⁸¹ Appendix, *supra* note 56, at A32 (Affidavit of Michael Cardozo, Mt. Sinai's counsel) (“there is no reason why [R.J.] Reynolds could not have conducted its own studies comparable to those undertaken by Dr. Selikoff”).

not produce the substantial equivalent¹⁸² of the data underlying the study that will be presented in court. If Dr. Selikoff's findings are central to the underlying personal injury cases, his data assume an importance that probably cannot be duplicated by any other. As the Seventh Circuit put it, in that circumstance the original researcher's data are "the most pertinent evidence."¹⁸³ Thus, the need criterion is likely to satisfy the undue hardship test as well.

E. *Protecting Subjects' Confidentiality*

In individual cases courts have to determine whether there is a need for confidentiality to protect communications between researchers and research subjects. Insistence that such confidentiality is always needed may be too broad, whether or not a pledge of confidentiality has been made.¹⁸⁴ Nevertheless, even in the absence of a pledge of confidentiality, it may often be true that the nature of the information is such that confidentiality is implicit.¹⁸⁵

If there is a ground for ensuring the subjects' confidentiality in connection with certain research, the courts properly resist efforts to broach that confidentiality. For example, Procter & Gamble Co., a defendant in a number of toxic shock syndrome (TSS) cases, sought discovery of the identities of subjects in a study done by the Center for Disease Control that linked TSS to

¹⁸² This idea is drawn from Federal Rule of Civil Procedure 26(b)(3) ("the party is unable without undue hardship to obtain the substantial equivalent of the materials by other means").

¹⁸³ 740 F.2d 556, 561 (7th Cir. 1984). See text accompanying note 74 *supra*.

¹⁸⁴ See text accompanying note 132 *supra*; but see *Richards of Rockford, Inc. v. Pacific Gas & Elec. Co.*, 71 F.R.D. 388, 390 (N.D. Cal. 1976) ("Much of the raw data on which research is based simply is not available except upon a pledge of confidentiality. Compelled disclosure of confidential information would without question severely stifle research into questions of public policy, the very subjects in which the public interest is greatest.").

In this connection, note that the requirements for funding of research on human subjects by the Department of Health and Human Services include assuring that "[w]here appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of data." 45 C.F.R. § 46.111(a)(7) (1981) (emphasis added).

¹⁸⁵ See *Farnsworth v. Procter & Gamble Co.*, 758 F.2d 1545, 1547 (11th Cir. 1985) ("Even without an express guarantee of confidentiality there is still an expectation, not unjustified, that when highly personal and potentially embarrassing information is given for the sake of medical research, it will remain private.").

one of Procter & Gamble's tampons. The plaintiffs intended to introduce the study at the trial, and the defendant wanted to know the identities of the subjects to investigate the methodology used in the study. This argument for revelation of the identity of research subjects could presumably be made routinely,¹⁸⁶ but the court rejected it, maintaining confidentiality of the subjects and noting the intensely personal and intimate nature of the information in the study.¹⁸⁷

This sort of treatment does not require that there be a privilege. A prime example is provided by suits against providers of blood brought by people who claim that they contracted AIDS due to blood transfusions. Seeking to prove that blood banks have been negligent in screening donors, plaintiffs in such cases seek the identity of donors through discovery. Without inquiring into privilege, a number of courts refuse such discovery to avoid the risk that disclosure would deter blood donations even though the discovery in these cases is sought from the defendant.¹⁸⁸ In the same vein, courts generally have allowed redaction of identifying information from research data.¹⁸⁹ In *American Tobacco* there was a debate between the tobacco companies and Mt. Sinai about how complete this redaction should be,¹⁹⁰ but

¹⁸⁶ Note that the argument would only work if the research results themselves are before discovery likely to be involved in the litigation. As we have seen (see text accompanying notes 179-80 *supra*) unless that is true, it will be difficult for a party to justify discovery. Such a party would be hard put to argue simultaneously that the data were a unique resource and that it needs to know the identities of the research subjects to show that the data collection was not done properly.

¹⁸⁷ *Farnsworth v. Procter & Gamble Co.*, 758 F.2d 1545 (11th Cir. 1985); see also *Lampshire v. Procter & Gamble Co.*, 94 F.R.D. 58 (N.D. Ga. 1982).

¹⁸⁸ *E.g.*, *Coleman v. American Red Cross*, 130 F.R.D. 360 (E.D. Mich. 1990); *Doe v. American Red Cross Blood Servs.*, 125 F.R.D. 646 (D.S.C. 1989); see Note, *Transfusion-Related AIDS Litigation: Permitting Limited Discovery from Blood Donors in Single Donor Cases*, 76 CORNELL L. REV. 927 (1991).

¹⁸⁹ *E.g.*, *Phillips v. Medtronic, Inc.*, 130 F.R.D. 136 (D. Kan. 1990); *Kennedy v. Connecticut*, 115 F.R.D. 497, 501 (D. Conn. 1987); *Harris v. Upjohn Co.*, 115 F.R.D. 191 (S.D. Ill. 1987); cf. *Newsom v. Breon Labs., Inc.*, 709 S.W.2d 559 (Tenn. 1986) (court directs that identity of patients allegedly harmed by drug be withheld, but that their doctors' names may be revealed).

¹⁹⁰ Mt. Sinai argued that the counties of residence and union local data be removed, and that birth and death dates should be summarized by decade, contending that otherwise the tobacco companies could figure out who certain research subjects were. The district court, however, directed only that the names, social security numbers, street addresses and union registration numbers be redacted, and enjoined any efforts to ascertain the identities of the subjects. Noting the threat of sanctions for any violation of the protective order, the Second Circuit affirmed. See 880 F.2d at 1530.

there was little concern with the basic principle that some protection for confidentiality was in order.

F. Cost

Hand in hand with the burden question comes the issue of cost. By avoiding burdensome methods of access to the data, courts (and litigants) can minimize the cost to the researcher of complying with a subpoena. But significant costs may nevertheless be incurred in some cases. Who should bear them?

The litigation system is often indifferent to costs, but with nonparties it can shift the costs to those who undertook discovery, sometimes rather spectacularly.¹⁹¹ Where expert opinions are generated for litigation, the federal rules prescribe sharing of the cost of research on which the expert opinion is based in some cases.¹⁹² In this way, litigants are prevented from getting a free ride on the case preparation activities of their adversaries.

How do these principles apply to the unaffiliated researcher? This person is not gathering data at the behest of a litigant, and the provisions for shifting that cost therefore do not apply; Mt. Sinai is not permitted to shift part of the cost of Dr. Selikoff's research to the tobacco companies. But that says little about the power of the court to require reimbursement for the additional costs resulting from compliance with the discovery. Some courts have questioned this power,¹⁹³ but amended Rule 45 makes it explicit by directing that "the person to whom the subpoena is addressed will be reasonably compensated" for the burden imposed.¹⁹⁴ The cost issue should therefore present only a limited problem in the future.

¹⁹¹ See *United States v. CBS, Inc.*, 103 F.R.D. 365 (C.D. Cal. 1984) (defendants that subpoenaed nonparties were ordered to reimburse them for over \$750,000 for costs they incurred in complying with the subpoenas).

¹⁹² FED. R. CIV. P. 26(b)(4)(C) (party seeking discovery must pay opposing party "a fair portion of the fees and expenses reasonably incurred by the latter party in obtaining facts and opinions").

¹⁹³ See *In re Snyder*, 115 F.R.D. 211, 214-15 (D. Ariz. 1987) (suggesting that because unaffiliated witness was not covered under Federal Rule of Civil Procedure 26(b)(4), there may be no power to direct reimbursement for the costs of complying with the discovery).

¹⁹⁴ FED. R. CIV. P. 45(c)(3)(B).

CONCLUSION

This Article began on a rather high plane, but seems to have descended to minutiae by the end. It would be comforting to be able to announce a resolution of the tension between litigation and science, or at least the elimination of potential threats to science by discovery. Some reforms may indeed curtail resolution of issues of science by the adversary trial method,¹⁰⁵ but it would be foolhardy to forecast that the risk of misinterpretation or misuse of science in the courtroom will soon end. Moreover, given the divergent orientations of science and litigation, it is not at all clear that such a forecast would be entirely optimistic from the perspective of litigation, much as it might be welcome to science. Accurate though Huber's description of the scientific method may be, it is not necessarily the best way to resolve disputes. As a consequence, litigation will still be beset by the problems in Scenario A, and courts will have to adopt measures to guard against such miscues.

Discovery is the customary protection in the adversarial world of litigation, for it equips litigants with knowledge to rebut propositions offered against them. Discovery calculated to avoid Scenario A frequently will focus on background data, but may raise the risks described in Scenario B where the data belongs to an unaffiliated scientist. Much as that scientist might prefer to be a conscientious objector to litigation, where her conclusions are going to be before the court litigation is likely to demand access to backup material. In doing so, it somewhat mirrors the attitude of science toward favoring access to underlying data to permit evaluation of published propositions. Although litigation is not the forum C.P. Snow had in mind, it is hard to justify shutting the door to litigation if it is open to science.

Hence this Article has concluded that the task of accommodating litigation and science in the discovery context will have to turn on the minutiae of individual circumstances rather than a global solution. Even if there were a basis for creating a researcher's privilege, it would be qualified and would lead to a comparable result. In concluding, the Article has therefore catalogued and evaluated the pertinent interests that should apply under amended Rule 45. Against the background of openness in

¹⁰⁵ See, e.g., note 41 *supra*.

science, the proprietary interests of scholars should ordinarily guarantee them first crack at publishing the results of their research but should not have significant weight when their published conclusions are to be presented in court. Scientists' concerns about burden deserve a sympathetic ear, like all concerns about burden in discovery, but ordinarily they should be solved by allowing reasonable access to data for which there is a genuine need. Matters of confidentiality and cost similarly appear susceptible to relatively simple and sensible solution in ordinary cases. The heart of the debate therefore should be about the need for the data, and there the primary focus will be on whether the researcher's work will, in effect, be in the courtroom absent discovery. If it will, access is in order, as the courts have often directed. Science has survived, and will continue to survive, this inconvenience.