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SOCIAL AUTHORITY: OBTAINING, EVALUATING, AND ESTABLISHING SOCIAL SCIENCE IN LAW

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INTRODUCTION

Three-quarters of a century have passed since an American court first invoked social science research to support its choice of a rule of law.¹ Once heretical, the belief that empirical studies can influence the content of legal doctrine is now one of the few points of general agreement among jurists.² Yet reliance upon the social sciences, while no

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¹ That case was *Muller v. Oregon*, 208 U.S. 412 (1908).

² All nine current Justices of the United States Supreme Court have either authored or joined opinions using social science research to establish or criticize a rule of law. *See, e.g.*, *United States v. Leon*, 104 S. Ct. 3405 (1984) (opinion of Justice White citing sociological field research to support a "good faith" exception to the fourth amendment exclusionary rule); *Barefoot v. Estelle*, 463 U.S. 880, 916 (1983) (dissenting opinion of Justice Blackmun, joined by Justices Brennan and Marshall, using psychological and psychiatric research to support the proposition that a state statute predi-

longer remarkable, is less evident in modern judicial opinions than might be expected, given the force of the underlying conviction that "‘we are all realists now.’"³ Apparently, a series of practical problems has seriously constrained judicial use of this potentially rich legal resource. Obtaining social science research has been cumbersome and sometimes controversial; evaluating research has been frustrating and uncertain; and establishing stable judicial views of particular empirical findings has proven elusive.

We contend that these problems stem largely from an early and unfortunate determination that social science materials should be treated as "facts," even when used to formulate a rule of law. Uncritical acceptance of this categorization has led lawyers and judges to subject empirical research to procedural rules and practices that often fail to produce useful results. In this Article we advance the thesis that social science research, when used to create a legal rule, is more analogous to "law" than to "fact," and hence should be treated much as courts treat legal precedent. This fundamental shift to a perspective that considers empirical data as "social authority" reveals a novel and theoretically coherent view of the entire range of procedures that lawyers and judges should use to manage social science information. Adopting this perspective, we make specific proposals for obtaining, evaluating, and establishing in court the findings of empirical research. Though our thesis may appear radical, our proposals will prove limiting; over the short term, the volume of social science relied on by courts probably will decrease, while over the long term, a small body of high quality social science will be established and available for efficient judicial reference.

In Part I we describe and account for the original view of social

cating capital punishment on a prediction of continuing violence is unconstitutional); *Florida v. Royer*, 460 U.S. 491, 519 (1983) (dissenting opinion of Justice Rehnquist, joined by Chief Justice Burger and Justice O'Connor, in which sociological surveys were cited to support the use of a "drug courier profile" in establishing reasonable suspicion for a search); *Mississippi Univ. for Women v. Hogan*, 458 U.S. 718 (1982) (opinion of Justice O'Connor citing sociological surveys to establish the unconstitutionality of a state statute that excluded males from enrolling in a state-supported nursing school); *Ballew v. Georgia*, 435 U.S. 223 (1978) (opinion of Justice Blackmun, joined by Justice Stevens, citing psychological laboratory studies to establish the unconstitutionality of five-member juries in state criminal trials); *United States v. Martinez-Fuerte*, 428 U.S. 543 (1976) (opinion by Justice Powell citing epidemiological and demographic research to support the constitutionality of fixed checkpoint stops of vehicles at borders); *Paris Adult Theatre v. Slaton*, 413 U.S. 49 (1973) (opinion of Chief Justice Burger using behavioral studies to support the constitutionality of a state obscenity statute).

³ Peller, *The Metaphysics of American Law*, 73 CALIF. L. REV. 1152, 1152 (1985).

science research as fact. Surprising hints appear in the early cases that a "social authority" orientation would have been acceptable, although the "fact" perspective ultimately came to dominate. In Part II we contend that social science research can plausibly be seen as a form of authority, in much the same way as prior cases are regarded by the common law, and demonstrate that similar materials are already used as authority in several areas of the law. In Part III we examine the judicial implications of considering empirical research as social authority. We advance specific proposals for obtaining social science research in court, recommend principal criteria for its evaluation, and present situations in which courts should consider establishing stable judicial views of individual research findings. By abandoning the original view of social science research as fact and adopting a new theory of "social authority," courts can solve the severe problems that have impeded judicial access to high quality social science information.⁴

I. SOCIAL SCIENCE AS FACT

A. *The "Fact" Classification*

At the turn of this century, American law was dominated by classical jurisprudence—the belief that a single, correct legal solution could be reached in every case by the application of logic to a set of natural, self-evident principles. Classical jurisprudence understood the process of deciding cases to be purely rational and exclusively deductive and thus produced a formal and mechanical approach to decisionmaking.⁵

Such was the pervasive climate of opinion when James Bradley Thayer provided, for his time, a definitive description of the law-fact distinction.⁶ Thayer defined "questions of law" to include only the problem of choosing between competing rules; all other questions were

⁴ Although the proposals in this Article may be relevant to the use of other types of scientific evidence in the courts, we limit our suggestions to the social sciences because this is the area of our interest and experience. By social science we mean the application of empirical research methods to questions of human behavior. The social sciences constitute a partial, though surely significant, use of science in the courts. See generally J. MONAHAN & L. WALKER, *SOCIAL SCIENCE IN LAW: CASES & MATERIALS* (1985) (discussing the actual and potential use of the social sciences in the American legal process).

⁵ See Pound, *Mechanical Jurisprudence*, 8 COLUM. L. REV. 605, 607 (1908). For more recent descriptions, see E. PURCELL, *THE CRISIS OF DEMOCRATIC THEORY* 74-75 (1973); White, *From Sociological Jurisprudence to Realism: Jurisprudence and Social Change in Early Twentieth-Century America*, 58 VA. L. REV. 999, 1001-02 (1972); Woodard, *The Limits of Legal Realism: An Historical Perspective*, 54 VA. L. REV. 689, 699-701, 710-18 (1968).

⁶ J. THAYER, *A PRELIMINARY TREATISE ON EVIDENCE AT THE COMMON LAW* 183-262 (1898).

"questions of fact." Thayer and his contemporary, Christopher Columbus Langdell,⁷ saw "law" as permanent and general, and consequently regarded any material that seemed either transitory or particular as necessarily "fact." According to classical jurisprudence, law did not change, so any demonstrably changeable material had to be "fact" or else the concept of law risked "embarrassment."⁸

This was the intellectual context in which Louis Brandeis prepared his brief for the State in *Muller v. Oregon*.⁹ Brandeis assembled a substantial body of medical and social science research tending to show the debilitating effect on women of working long hours, and presented this material to the Court in his brief defending Oregon's limits on the number of hours women could work. It is not surprising, given Thayer's distinction and the jurisprudence of the time, that Brandeis himself referred to the social science material as "facts."¹⁰ The problem of choosing between two rules was not addressed by these materials; nor did the materials claim permanence. They did not contend that working long hours always had and always would harm women, only that such an effect had occurred at one point in history. This temporality, or changeability, mandated the fact classification.

The response of the Supreme Court is intriguing. After referring to the social science materials, the Court stated that although they "may not be, *technically speaking*, authorities,"¹¹ they would nonethe-

⁷ See L. FRIEDMAN, *A HISTORY OF AMERICAN LAW* 353 (1973) (discussing how Langdell, champion of the case method in legal studies, believed that the common law contained true legal principles that could be derived from cases).

⁸ For an analysis of Thayer's view, see Morris, *Law and Fact*, 55 HARV. L. REV. 1303 (1942). Morris concluded that

Thayer worked in a climate of opinion. His was a time when the creative aspects of judges' work [were] depreciated. The fashion of his day was to consider rules alone worthy of the dignity of the name, law. Facts are transitory and particular. To call problems that are transitory and particular 'questions of fact' prevented embarrassment of the permanency and generality of the law.

Id. at 1315.

⁹ 208 U.S. 412 (1908). In 1903, the Oregon state legislature enacted a statute that limited the work day of any woman or girl employed in a factory or a laundry to 10 hours. In 1905, the Oregon Supreme Court affirmed the conviction of a laundry owner who had violated this statute, and the owner appealed to the United States Supreme Court. For a historical retrospective of this landmark case, see Collins & Friesen, *Looking Back on Muller v. Oregon*, 69 A.B.A. J. 294, 294-95 (1983).

¹⁰ Brief for the Defendant in Error at 113, *Muller v. Oregon*, 208 U.S. 412 (1908) ("We submit that in view of the *facts* above set forth . . . it cannot be said that the Legislature of Oregon has no reasonable ground for believing that the public health, safety, or welfare did not require a legal limitation on women's work . . .") (emphasis added).

¹¹ 208 U.S. at 420 (emphasis added).

less receive "judicial cognizance."¹² This phrase could indicate that, even in the jurisprudential climate of 1908, some members of the Court believed that only "technicalities" prevented them from viewing social science research as a form of authority.¹³ But such a belief, if held, did not prevail. Further in the opinion, the Court clearly returned to the classical perspective and referred to the materials as presenting a question of fact.¹⁴

By the 1930's, classifying social science as fact was deeply ingrained in the thinking of the Court.¹⁵ Yet, the routine treatment of

¹² *Id.* at 421.

¹³ The Court did not state the nature of these "technicalities," but one possibility is the then still powerful force of formal jurisprudence, articulated as a general restraint on judicial behavior.

¹⁴ See 208 U.S. at 421-23. In the decades after *Muller*, social science studies continued to play a significant role in deciding major constitutional cases, particularly in the area of wage-and-hour law. Courts uniformly branded these studies as facts, apparently without analysis or reflection. For example, in a New York case, *People v. Charles Schweinler Press*, 214 N.Y. 395, 108 N.E. 83 (1915), the court conducted a lengthy review of the findings of medical and industrial investigations before it upheld the constitutionality of legislation limiting the hours that women could work. "[S]uch facts, evidence and information furnished a sufficient reason for action by the legislature," the Court concluded. *Id.* at 404. The United States Supreme Court employed the same characterization of social science evidence to support the constitutionality of a ten-hour workday for mill employees. See *Bunting v. Oregon*, 243 U.S. 426 (1917). The Court found that "knowledge obtained by the increasing study of industrial conditions" was sufficient to provide a rational basis for the legislation. *Id.* at 433. "These are facts of common knowledge of which this court will take judicial notice." *Id.* Similarly, the Court relied on "the facts of life" to strike down a child labor law. *Hammer v. Dagenhart*, 247 U.S. 251, 253 (1918).

The Court also struck down a minimum wage law in *Adkins v. Children's Hosp.*, 261 U.S. 525 (1923). It dismissed a "mass of reports, opinions of special observers and students of the subject, and the like," which supported the economic advantages of the minimum wage, as interesting but only mildly persuasive. *Id.* at 560. The Court rested its decision on the "notorious fact that earnings everywhere in all occupations have greatly increased" with or without minimum legislation. *Id.* A year later, in *Burns Baking Co. v. Bryan*, 264 U.S. 504 (1924), the Court similarly voided regulations controlling the weight of loaves of bread. In dissent, Justice Brandeis reported a lengthy personal investigation into the practices of the baking industry. He concluded that the empirical evidence supported the rationality of the weight regulations and stated, "[p]ut at its highest, our function is to determine, in light of all facts which may enrich our knowledge and enlarge our understanding, whether the measure . . . transcends the bounds of reason." *Id.* at 534 (Brandeis, J., dissenting). Using the same view in *Borden's Farm Prods. Co. v. Baldwin*, 293 U.S. 194 (1934), Chief Justice Hughes, writing for the majority, upheld the constitutionality of legislation regulating the milk industry. He observed that when the justification for a law "is predicated upon the particular economic facts of a given trade or industry, which are outside the sphere of judicial notice, these facts are properly the subject of evidence and of findings." *Id.* at 210.

¹⁵ The Court relied on "experience" for the proposition that the right to unionize and collectively bargain was an essential condition for preserving industrial peace. See *NLRB. v. Jones & Laughlin Steel Corp.*, 301 U.S. 1, 42 (1937) ("This is such an outstanding fact in the history of labor disturbances that it is a proper subject of judicial notice and requires no citation of instances."). One year earlier, the Court had refused to overrule *Adkins v. Children's Hosp.*, 261 U.S. 525 (1923), and struck down

social research as fact did not account for the anomalous practice Brandeis had initiated in the *Muller* case. How could Brandeis briefs be submitted initially to the Supreme Court without having the facts first tested by the confrontational procedures of a trial court?

B. *The "Legislative/Adjudicative" Distinction*

Early criticism of classical jurisprudence eventually led to a radical revolt against formalism by the Realists. Karl Llewellyn provided the best summary of what he called the Realists' "common points of departure."¹⁶ He wrote that Realists conceived of the law as constantly "in flux" as judges created and discarded law to meet social needs.¹⁷ Obviously, this position diametrically opposed the classicalists' idea of an immutable law, with all else consigned by simple elimination to the category of fact. By legitimizing the concept of change in the law, the Realists found legal relevance in a much broader spectrum of sources than Thayer would have allowed.

It was against this background of fundamental jurisprudential change that, in 1942, Kenneth Culp Davis published an article that brought to the fore latent dissatisfaction with the existing division between law and fact.¹⁸ Davis proposed what proved to be a highly influ-

another minimum wage law. See *Moorehead v. New York ex rel. Tipaldo*, 298 U.S. 587 (1936). Both the majority and dissenting opinions in *Moorehead*, however, recognized social science data as providing a "factual" foundation for their views. Reviewing the factual background of the law, the majority found that "[t]hese legislative declarations, in the form of findings or recitals of fact, serve well to illustrate why any measure that deprives employers and adult women of freedom to agree upon wages . . . is necessarily arbitrary." *Id.* at 615-16. In dissent, Chief Justice Hughes pointed to the state's "voluminous factual brief for the purpose of showing from various official statistics that these recitals have abundant support." *Id.* at 625 (Hughes, C.J., dissenting). After a lengthy review of those statistics, the dissent concluded simply, "We are not at liberty to disregard these facts." *Id.* at 627.

¹⁶ Llewellyn, *Some Realism About Realism—Responding to Dean Pound*, 44 HARV. L. REV. 1222, 1235 (1931).

¹⁷ *Id.* at 1236.

¹⁸ See Davis, *An Approach to Problems of Evidence in the Administrative Process*, 55 HARV. L. REV. 364 (1942) [hereinafter cited as Davis, *An Approach to Problems of Evidence*]. Davis originally focused upon the problem of developing appropriate techniques for managing evidence in the administrative process. He argued that the then-burgeoning federal administrative agencies should not indiscriminately apply rules of evidence developed for common-law jury trials to their decisionmaking tasks. *Id.* at 365. He suggested a number of principles for the development of evidentiary practices in administrative decisionmaking that take into account the needs of the agencies, the differences between agencies and courts, and the fact that many administrative proceedings are nonadversarial and are conducted by experts. See *id.* at 367-423. Many of Davis's principles rest on the distinction he made between adjudicative and legislative facts, see *id.* at 423-25, a distinction he still maintains is valid and useful. See K. DAVIS, ADMINISTRATIVE LAW TREATISE § 15.1 (2d ed. 1980); Davis, *Judicial Notice*, 55 COLUM. L. REV. 945 (1955) [hereinafter cited as Davis, *Judicial Notice*]; Davis,

ential distinction between "adjudicative facts"—facts that pertain specifically to the case at bar—and "legislative facts"—facts involved in deciding questions of law or policy.¹⁹ This distinction was a clear indication that the Realists had succeeded in undercutting the classical perspective on the nature of law. Davis's candid recognition of a judicial lawmaking function paralleled Realist views. Similarly, his recognition that facts are a component of lawmaking directly contradicted the classical position that law was deductively discovered rather than judicially created.

In the dozen years following its coinage by Davis, the distinction between legislative and adjudicative facts received approval from commentators who recognized that the distinction had application well beyond the boundaries of administrative law.²⁰ Yet, in *Brown v. Board of Education*,²¹ when the Supreme Court had its next major encounter with social science materials, it did not invoke Davis's distinction. Rather, the Court referred to the social science studies that supported the district court's finding that segregated public education harmed black children as "modern authority."²² The Court simply cited the studies *seriatim* in a footnote,²³ much as it would list case citations sup-

Facts in Lawmaking, 80 COLUM. L. REV. 931 (1980) [hereinafter cited as *Davis, Facts*].

¹⁹ Davis, *An Approach to Problems of Evidence*, *supra* note 18, at 402. Davis commented that

[w]hen an agency finds facts concerning immediate parties—what the parties did, what the circumstances were, what the background conditions were—the agency is performing an adjudicative function, and the facts may conveniently be called adjudicative facts. When an agency wrestles with a question of law or policy, it is acting legislatively, just as judges have created the common law through judicial legislation, and the facts which inform its legislative judgment may conveniently be denominated legislative facts.

Id.

More recently, Davis has stated that "[t]he distinction between adjudicative and legislative facts should be essentially one between facts about particular immediate parties and all other facts" K. DAVIS, *supra* note 18, at 143.

²⁰ See E. CLEARY, K. BROUN, G. DIX, E. GELHORN, D. KAYE, R. MEISENHOLDER, E. ROBERTS & J. STRONG, MCCORMICK ON EVIDENCE 328 (3d ed. 1984) [hereinafter cited as MCCORMICK ON EVIDENCE]; Morris, *supra* note 8, at 1318-25; Wyzanski, *A Trial Judge's Freedom and Responsibility*, 65 HARV. L. REV. 1281, 1295 (1952). In a complementary manner, the proposals of this article, though developed with immediate reference to social science in the courts, may be usefully applied in the administrative law process as well.

²¹ 347 U.S. 483 (1954).

²² *Id.* at 494.

²³ *Id.* at 494 n.11. This reference to "modern authority" has not escaped substantial criticism. See, e.g., Cahn, *Jurisprudence*, 30 N.Y.U. L. REV. 150 (1955); Goodman, *De Facto School Segregation: A Constitutional and Empirical Analysis*, 60 CALIF. L. REV. 275, 279 (1972); Van den Haag, *Social Science Testimony in the Desegregation Cases: A Reply to Professor Kenneth Clark*, 6 VILL. L. REV. 69 (1960).

porting a proposition of law.

Empirical research, which in 1908 the *Muller* Court had said "may not be, technically speaking, authorities," had by 1954 in *Brown* come to be described, and used, as "modern authority."²⁴ But in *Brown* as in *Muller*, the allusion that scientific research might be considered authority rather than fact was fleeting and never pursued. During the three decades since *Brown*, the distinction between legislative fact and adjudicative fact has achieved widespread acceptance.²⁵

²⁴ We realize, of course, that the purpose to which social science research was put differed significantly in the two cases. In *Muller*, empirical data were used to support the rationality of a state statute. In *Brown*, they were used to overrule a prior Supreme Court decision. See *infra* text accompanying notes 123-30.

²⁵ See, e.g., *Concerned Citizens v. Pine Creek Conservancy Dist.*, 429 U.S. 651, 657 (1977) (Rehnquist, J., dissenting) ("As Mr. Justice Holmes recognized, the determination of legislative facts does not necessarily implicate the same considerations as does the determination of adjudicative facts."); *National Org. of Women v. Social Sec. Admin.*, 736 F.2d 727, 737 n.95 (D.C. Cir. 1984) ("The distinction between adjudicative and legislative facts is now well-recognized . . ."); cf. *Broz v. Schweiker*, 677 F.2d 1351, 1357 (11th Cir. 1982) (noting that "[t]he legislative/adjudicative fact distinction, first articulated by Professor Davis . . . has become a cornerstone of modern administrative law theory and has been widely accepted in the federal appellate courts"); *Association of Nat'l Advertisers v. FTC*, 627 F.2d 1151, 1162 n.20 (D.C. Cir. 1979) ("The distinction between legislative and adjudicative facts has been widely accepted both within and without this circuit."), *cert. denied*, 447 U.S. 921 (1980). Davis's distinction has also proved useful in the context of criminal appeals. See *United States v. Bowers*, 660 F.2d 527, 531 (5th Cir. 1981) (using the distinction to uphold the court's instructions to the jury that judicial notice was taken of jurisdiction); *United States v. Gould*, 536 F.2d 216, 220 (8th Cir. 1976) (relying on the distinction between legislative and adjudicative facts in upholding the district court's use of judicial notice in deciding that cocaine hydrochloride was subject to federal drug control laws).

Commentators, however, have expressed doubts about the usefulness of the distinction. See, e.g., Clagett, *Informal Action-Adjudication-Rulemaking: Some Recent Developments in Federal Administrative Law*, 1971 DUKE L.J. 51, 80 (noting that "the distinction between legislative and adjudicative facts may have done more harm than good and that even if a fact can clearly be classified as one or the other, that classification alone sheds very little—if any—light on what procedures are most appropriate for resolving the issue"); McGarity, *Substantive and Procedural Discretion in Administrative Resolution of Science Policy Questions: Regulating Carcinogens in EPA and OSHA*, 67 GEO. L.J. 729, 767 (1979) (referring to "Professor Davis' almost talismanic distinction between 'legislative' facts and 'adjudicative' facts"); Robinson, *The Making of Administrative Policy: Another Look at Rulemaking and Adjudication and Administrative Procedure Reform*, 118 U. PA. L. REV. 485, 536 (1970) (Legislative fact and adjudicative fact are "highly elastic concepts [that] tend to obscure the varied needs of different agencies and the varied demands of different regulatory functions."). Moreover, at least one court has doubted the value of the distinction. See *Bowling v. Department of Ins.*, 394 So. 2d 165, 174 (Fla. Dist. Ct. App. 1981) (finding the distinction between legislative and adjudicative facts to be "abstract and unprofitable," and terming what Davis would call an adjudicative fact, "a plain, garden-variety fact"). Even some who have adopted the legislative-adjudicative fact distinction "do so without any affection for that distinction." Miller & Barron, *The Supreme Court, the Adversary System, and the Flow of Information to the Justices: A Preliminary Inquiry*, 61 VA. L. REV. 1187, 1234 n.120 (1975).

C. *The Inadequacy of Legislative Facts*

We accept Davis's insight that empirical information can play two distinctly different roles in legal decisionmaking. Yet in distinguishing "legislative" from "adjudicative" fact, Davis perpetuated the old pre-Realist boundaries of the distinction between "fact" and "law." He left the classification of empirical information as fact, and merely divided the category of fact into two subcategories, one of which (legislative) reflected the Realist position that judges make law. The procedural ramifications emanating from Davis's tacit acceptance of the manner in which classical jurisprudence separated fact and law have been limited to the largely negative proposal that facts used to create a rule of law are not to be treated as other facts are treated in court. This view fails to provide clear direction regarding how courts should obtain social science data, and contains no information about how courts should evaluate what they have obtained, or what effect they should give to the evaluation of other courts.

The general and established rule is that questions of law are answered by the judge and questions of fact are answered by the jury (or trier of fact). If the interpretation of scientific research is considered a question of fact, it seems apparent that the research should be introduced as other facts are introduced—by oral testimony (here, the oral testimony of experts)—for consideration by the jury.²⁶ As Davis recognized, however, presenting facts to a jury is "wholly inappropriate"²⁷ when those facts are used to determine the content of law and policy.²⁸ He argued that the traditional method of presenting facts via testimony, either before a jury or a judicial fact-finder, should apply only to adjudicative facts. Legislative facts, in contrast, should be presented to the court in its capacity as lawmaker.²⁹

But how should the parties present legislative facts for the court's consideration? Here, Davis and the Federal Rules of Evidence, which incorporate his distinction, are not conclusive. The parties appear to be free either to present legislative facts via expert witnesses at a hearing or to include them in briefs, as Brandeis did in *Muller*. No positive

²⁶ Under the Federal Rules of Evidence, an expert witness may testify "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact . . ." FED. R. EVID. 702. "[A]n expert on the stand may give a dissertation or exposition of scientific or other principles relevant to the case, leaving the trier of fact to apply them to the facts." *Id.* advisory committee note.

²⁷ Davis, *Facts*, *supra* note 18, at 941.

²⁸ To present such facts to a jury would allow the jury to create law, a task universally regarded as reserved to the legislature and the judiciary.

²⁹ Davis, *Facts*, *supra* note 18, at 940.

guidance is provided, although the theoretical and practical differences between the two techniques are great.³⁰

Davis's unexamined retention of the formalists' division between law and fact also hampers confident resolution of the difficult question whether a court should independently search for scientific research when it appears relevant to the decision but has not been presented by the parties. Naively applying the adversary system's accepted rule that all facts must appear in the trial record clearly would preclude a court from independently searching for relevant scientific research.

As Davis again recognized, applying the traditional evidentiary rules of fact-gathering to legislative facts would produce "obviously intolerable" results.³¹ He argued that the restrictions on courts' powers to take "judicial notice," which preclude courts from making independent investigations of the facts at issue in a case, apply only to adjudicative facts.³²

What, then, of legislative facts? The Federal Rules of Evidence do not address independent judicial investigation, just as they do not address how the parties should present legislative fact information. An Advisory Committee Note, however, reflects Davis's view that courts should be free to initiate an independent search for legislative facts and to take judicial notice of whatever they find.³³ This is presented as only one option, however. The Advisory Committee also would allow appellate courts to decline to do independent research, and instead remand cases to the trial court "for the taking of evidence" regarding legislative facts.³⁴

³⁰ The advisory committee note on Federal Rule of Evidence 201(a) states that, "no rule deals with judicial notice of legislative" facts. The note then continues with considerable description of the distinction, emphasizing the importance of legislative facts.

³¹ Davis, *A System of Judicial Notice Based on Fairness and Convenience*, in *PERSPECTIVES OF LAW* 68, 83 (R. Pound, E. Griswold & A. Sutherland eds. 1964). A judge would have to feign ignorance of relevant research that he or she knew existed and could affect a ruling of law in a case, whenever the parties' briefs failed to introduce the research. The judge would then be forced knowingly to create an inadequate and perhaps erroneous rule of law that could affect future cases, simply because the parties in the case at bar failed to find research of which the judge was already aware.

³² See Davis, *Facts*, *supra* note 18, at 940-41; see also FED. R. EVID. 201 ("govern[ing] only judicial notice of adjudicative fact"). Professors Saltzburg and Redden note that "[t]he most serious problem with Rule 201 may be its total failure to address legislative facts." S. SALTZBURG & K. REDDEN, *FEDERAL RULES OF EVIDENCE MANUAL* 43 (3d ed. 1982).

³³ See FED. R. EVID. 201(a) advisory committee note. Davis believes, however, that in some circumstances the parties should be notified of the court's intention to rely upon research found through independent investigation. See Davis, *Facts*, *supra* note 18, at 935.

³⁴ FED. R. EVID. 201(a) advisory committee note.

In addition to the Advisory Committee's indeterminate procedures for gathering legislative facts, the jurisprudential underpinning of Davis's position on independent judicial investigation of legislative facts is surprisingly weak. According to Davis, "The reason we allow judicial notice to be taken of extra-record [legislative] facts is . . . to promote convenience. Tribunals make factual assumptions because it is convenient to do so. Indeed, to fail to make factual assumptions would mean extreme inconvenience."³⁵

If the distinction between legislative and adjudicative facts leaves courts perplexed as to how they should obtain social science research, the distinction provides no direction at all concerning either how courts should evaluate the information they do obtain or how they should treat prior judicial consideration of that material. Yet one cannot confidently answer questions about how courts should obtain social science data without a clear view of how they will test the materials that they find. If judges independently may obtain social science studies, they must have an acceptable plan for evaluating these materials since the parties may not be involved in the evaluation. And if a major block of judicial time and energy is assigned to the evaluation of either party-generated or independently obtained research, a process should be developed to insure that essentially the same evaluation is not repeated in every case.³⁶ The Davis distinction—with its tacit reliance upon a pre-Realist

³⁵ Davis, *supra* note 31, at 93. Given that the prevailing view of social science research as legislative fact suggests no preferred route for courts to obtain this type of "fact" from the parties, and that the justification this view offers for a court's independent investigation is no more principled than "it is convenient to do so," the current judicial disarray on this topic is understandable. Some judges now routinely undertake their own search for relevant empirical data, while others obtain data only from trial court records or briefs. See T. MARVELL, *APPELLATE COURTS AND LAWYERS* 192 (1978) (reporting that 40% of the citations to empirical research appearing in the opinions of one state's supreme court had been obtained through the justices's independent investigations, and 60% of the social facts supported by empirical data (in the opinions) came from the record or the briefs, including amicus briefs). Apparently, remanding a case to the trial court to take expert testimony on empirical questions also remains an option. See, e.g., *Borden's Farm Prods. Co. v. Baldwin*, 293 U.S. 194 (1934). Reported instances of this technique are rare, although it has been discussed by commentators. See M. SAKS & R. VAN DUIZEND, *THE USE OF SCIENTIFIC EVIDENCE IN LITIGATION* 81 (1983).

³⁶ See Merryman, *The Authority of Authority: What the California Supreme Court Cited in 1950*, 6 *STAN. L. REV.* 613 (1954). Merryman argues that there is an advantage to the judicial process

in not requiring the judge to go over old ground in all cases. There are many situations where it would be useless and wasteful to require the judge to reconsider the problem from its origins. Much is saved in letting him dispose of the problem on the basis of conclusions reached in earlier decisions.

Id. at 624 (footnote omitted).

conceptualization of the difference between fact and law—provides no assistance in meeting these interrelated demands.

II. SOCIAL SCIENCE AS AUTHORITY

It is difficult to gainsay the recent conclusion that “a viable formulation of rules . . . with regard to legislative facts has not proven feasible.”³⁷ Attempts at further refinement of legislative fact into ever narrower subcategories do not appear promising.³⁸ Rather, improvement in the use of social science information in the courts may be possible only “within the perimeters of a new concept,”³⁹ a concept that would fundamentally alter the way in which courts view social science materials.

We propose *social authority* as such a concept. We argue that courts should treat social science research relevant to creating a rule of law as a source of authority rather than as a source of facts.⁴⁰ More specifically we propose that courts treat social science research as they would legal precedent under the common law.⁴¹

Our argument for turning on its head the accepted way of viewing social science research is not deontological. We make no claim that jurisprudential principles compel our conclusion. Rather, we proceed on a more modest course. We argue first that while there is an obvious conceptual similarity between social science research and fact, there is an equally clear conceptual bond between social science research and law. We then contend that, given the similarities we have identified, it is jurisprudentially plausible to classify social science research either as

³⁷ MCCORMICK ON EVIDENCE, *supra* note 20, at 937.

³⁸ See Davis, *Facts*, *supra* note 18, at 932 (discussing six scales for distinguishing types of facts and exploring the practical problems of such distinctions).

³⁹ MCCORMICK ON EVIDENCE, *supra* note 20, at 938.

⁴⁰ There may be uses of social scientific research in addition to formulating a rule of law to which the “social authority” concept would apply. In a future article, we plan to demonstrate that scientific research used to create an empirical “frame of reference” (within which facts specific to a case can be determined) may also be considered in part as social authority. See, e.g., *State v. Davis*, 96 N.J. 611, 477 A.2d 308 (1984) (permitting the defendant in a capital case, through use of an expert witness, to introduce into evidence testimony relating to empirical studies relevant to the defendant’s potential for violent behavior). The social authority concept, however, is not applicable where social science is used *only* as evidence in a specific case. In that instance, the fact classification is, in our view, entirely appropriate. Typical examples of such cases are disputes over various aspects of trademark rights and claims of discrimination under Title VII of the Civil Rights Act. Social science research is routinely employed in such cases, but almost always to determine facts specific to the case (whether, for example, consumers are confused by similar trademarks and whether employment practices result in disparate racial impact).

⁴¹ See *infra* text accompanying notes 58-130 for a detailed account of the methodological implications of this proposal.

fact or as law. Finally, we propose that the question how to classify social science research be decided in terms of which classification is most useful for the legal process.

Our initial case for the jurisprudential plausibility of viewing social science as a form of authority takes this observation as its point of departure: while empirical research has some of the characteristics of fact, it has some of the characteristics of law as well. Until now, courts and commentators have attended to the similarity between social science and fact, and have largely ignored the similarity between social science and law.⁴²

A. *Similarity Between Social Science and Fact*

The principal similarity between social science research and fact is that both are *positive*—both concern the way the world *is*, with no necessary implications for the way the world *ought* to be. Both refer to the empirical reality that we infer from our senses, rather than to the value we impute to that reality. Law, in contrast, is *normative*. It does not describe how people *do* behave, but rather prescribes how they *should* behave.⁴³

⁴² Korn, *Law, Fact, and Science in the Courts*, 66 COLUM. L. REV. 1080, 1081 (1966) (presenting a “speculative and exploratory analysis” regarding the question “Why indeed is decision based on scientific knowledge so generally treated as ‘fact’ determination?”). Korn posited that

law—whether statutory or judge-made—and the sciences both involve bodies of generalized, systematized, and transmissible knowledge This view would suggest that scientific learning entering the legal order should have a natural affinity for the generalized, systematized, and transmissible aspect of that order—the body of statutory and judge-made ‘law’—rather than for the process of case by case ‘fact determination.’

Id. at 1101. Korn concludes, however, that such a view fails to take into account that law is normative while social science is positive, *id.*, a distinction we recognize but do not view as dispositive. See *infra* text accompanying notes 44-48.

⁴³ As Korn has noted:

[P]erhaps the most fundamental source of difficulty in technical fact determination is that the law and the scientific knowledge to which it refers often serve different purposes. Concerned with ordering men’s conduct in accordance with certain standards, values, and societal goals, the legal system is a prescriptive and normative one dealing with the ‘ought to be.’ Much scientific knowledge, on the other hand, is purely descriptive; its ‘laws’ seek not to control or judge the phenomena of the real world, but to describe or explain them in neutral terms.

Korn, *supra* note 42, at 1093-94. Similarly, Kelsen claimed that

[a] law of nature is a statement to the effect that if there is A, there *is* B, whereas a rule of morality or a rule of law is a statement to the effect that if there is A, there *ought* to be B. It is the difference between the “is” and the “ought,” the difference between causality and normativity. . . .

H. KELSEN, *The Natural-Law Doctrine Before the Tribunal of Science*, in WHAT IS

In Part I we sought to explain how formal jurisprudence initially classified social science research as a source of facts. Since it is clear that research findings change as the empirical events they reflect change, a jurisprudence that denies change in law could not accommodate any positive elements within the meaning of the term "law." To do otherwise would imply that principles of law were bound by time or place, notions that were anathema to the formalists.

This concept of immutable law was one of the first casualties of the Realist revolution. In the Realist view, all law was constantly "in flux." The variability of social science findings over time and place, therefore, did not compel its relegation to the domain of fact. Change itself no longer distinguished the legal from the factual; both could, and did, change. This view of law thus loosened the bond linking social science research and fact.

B. *Similarity Between Social Science and Law*

The principal similarity between social science research and law is that both are *general*—both produce principles applicable beyond particular instances. Facts, in contrast, are specific to particular instances.⁴⁴ Social science research, though derived from specific empirical data, typically addresses persons, situations, and time periods beyond those present in a particular investigation. Indeed, the purpose of most scientific research is to obtain knowledge that, while surely not immutable, holds true for many people over considerable time and in a variety of places.⁴⁵ Because of this generality, the conclusions of empirical research are sometimes metaphorically described as scientific laws.⁴⁶

Like social science, law, particularly court decisions in a common-law system, derives from specific empirical events (the facts of a case),

JUSTICE? JUSTICE, LAW, AND POLITICS IN THE MIRROR OF SCIENCE 137, 139 (1957); see also Morris, *supra* note 8, at 1329 ("The distinction between propositions of fact and conclusions of law is this: Propositions of fact are descriptive; conclusions of law are dispositive."); cf. THE IS/UGHT QUESTION (W. Hudson ed. 1969) (a collection of essays by philosophers on the is-ought distinction in moral philosophy); P. FOOT, VIRTUES AND VICES 79 (1978) ("Many modern moral philosophers have taken up Hume's argument and, starting from his premise about the necessarily practical nature of morality, assert his conclusion about the gap between *is* and *ought*.").

⁴⁴ Cf. K. DAVIS, *supra* note 18, at 149 (Adjudicative facts are "facts concerning the immediate parties.").

⁴⁵ Indeed, these are the three components of "external validity." See *infra* text accompanying notes 70-79 & 100-12.

⁴⁶ See, e.g., I. HOROWITZ & T. WILLGING, THE PSYCHOLOGY OF LAW 41 (1984) ("Science has come to mean specific ways of gathering and systematizing knowledge . . . [T]hese methods are mathematical and experimental tools to establish scientific laws.").

but speaks more broadly. It is this attribute of generality that is described as the "precedential effect" or authoritative nature of a court decision. A decision takes on the mantle of legal authority in subsequent litigation precisely to the extent that the decision transcends the people, situation, and time present in the original case. Indeed, the way to deny legal authority to a court decision is to deny its generality by claiming that the decision is limited to its own facts.

An important aspect of the generality that social science and law share is that they both typically address future, as-yet-unknown contingencies. Scientific findings are evaluated in part by their heuristic value—by their ability to order and make understandable new phenomena. Likewise, a court decision comes to be accorded the status of precedent when it is found to embody a principle that assists in the resolution of a subsequent conflict.⁴⁷ In both cases, the risk of strategic bias is reduced, since investigators or judges could not have anticipated all the applications that would be found for their work in the future. The general applicability of both common-law precedent and much of social science research is augmented by the fact that, at the time the research is conducted or the decision is rendered, the ultimate implications can be only dimly foreseen, if foreseen at all.

Contrast, in this regard, the two very different uses of social science research in court. Research used in the creation of a rule of law—for example, studies on the effects of school segregation on self-esteem, the effects of exposure to pornography on anti-social behavior, or the deterrent value of the death penalty—has the same kind of future-oriented generality that case precedent possesses. The studies apply to the specific disputes in which they are introduced, but they apply to many other disputes as well. The particulars of the litigation relate to the research only as exemplars of the larger phenomenon investigated. However, when social science research is not used to create a rule of law, but rather to adjudicate an issue within a settled legal context, it has no generality. Research used in this case-specific manner—for example, surveys of the prevalence of consumer confusion between contested trademarks—is much closer to what has traditionally been considered facts than it is to law. The resolution of the issue on which the research bears has no substantive implications beyond the specific case in which it is introduced.⁴⁸

⁴⁷ See generally R. CROSS, PRECEDENT IN ENGLISH LAW (1961) (examining the strongly coercive nature of the English doctrine of precedent).

⁴⁸ See *supra* note 40.

C. *The Question of Command*

If social science research is like fact in one way (both are positive), and like law in another (both are general), there seems to be no jurisprudential reason why it could not as plausibly be grouped with the latter as with the former, at least for some legal purposes. One argument against pursuing the analogy between social science research and law is that since researchers are not elected or appointed to public office, social science research lacks the official sanction characteristic of legal authority. This objection is based on J.L. Austin's view that all law emanates from a command issued by the sovereign.⁴⁹ Austin took the position that anything that did not ultimately derive from an order of some sovereign power was not properly considered law. Austin's perspective would preclude empirical research from being treated as law, since the findings of social science do not derive from the command of any sovereign.

The modern criticism of Austinian jurisprudence, however, has been trenchant. H.L.A. Hart identified the fact that it operates on the model of the "gunman writ large" as the central problem with Austin's position.⁵⁰ That is, laws derive their authority in precisely the way that a gunman robbing a stranger derives "authority": by issuing commands and backing them with the threat of sanction. According to Hart, the principal difficulty inherent in this conception of lawmaking is that it distorts the content of much that is commonly considered law. Many laws simply do not fit the model of coercive orders or commands. For example, facilitative laws are inexplicable under an Austinian view. A law can facilitate the making of wills by describing how a will is properly made. Or a law can facilitate the formation of contracts by specifying the conditions under which a contract is validly formed. In neither case is it obvious how the law "commands" anything. Since the element of command is lacking in many instances of what are generally con-

⁴⁹ See J. AUSTIN, *THE PROVINCE OF JURISPRUDENCE DETERMINED* 1-25 (2d ed. London 1861) (1st ed. London 1832).

⁵⁰ H.L.A. HART, *THE CONCEPT OF LAW* 18-25 (1961). There are many criticisms of Austin similar to Hart's. See, e.g., L. FULLER, *THE MORALITY OF LAW* 46-49, 97, 191-97, 225-26 (rev. ed. 1969) (arguing that the positivistic approach toward reality is most difficult to maintain when dealing with human interaction); J. GRAY, *THE NATURE AND SOURCES OF THE LAW* 73-81 (1927) (contending that true sovereignty cannot truly be discovered and that, besides, there is nothing jurisprudentially to be gained by use of the concept); H. Kelsen, *GENERAL THEORY OF LAW AND STATE* 30-37, 71-74, 127-28 (A. Wedberg trans. 1961) (arguing that the contradictions in Austin's theories are a result of his characterization of law as a command); H. SIDGWICK, *THE ELEMENTS OF POLITICS* app. A (4th ed. 1919) (criticizing Austin's approach for failing both to be in accordance with history and to account for power being vested in more than one body).

ceded to be laws,⁵¹ the absence of command in social science research does not appear to be an insuperable bar to its incorporation into the concept of law.

Not only does a lack of official command not preclude social science research from being treated as courts treat legal precedent, but positive materials similar to social science and equally lacking in command have routinely been incorporated into the common law of England and the United States for centuries. As John Merryman has stated, "It is possible for cases to be decided, rules of law to be stated, lines of decision begun and perpetuated, solely on the authority of a textual treatment having its origins outside the judicial or legislative process."⁵²

Custom is one of the earliest and clearest examples of positive materials being treated as law. Blackstone recognized that general customs, doctrines that are not set down in any written statute or ordinance, but depend merely upon immemorial usage,⁵³ frequently attain the status of law. He cited numerous rules of inheritance, property transfer, contracts, and wills as examples of the incorporation of positive materials into legal rules.⁵⁴

⁵¹ It is, of course, possible to challenge Austin's views without proposing a view of law devoid of all coercive elements. See Feeley, *The Concept of Laws in Social Science: A Critique and Notes on an Expanded View*, 10 LAW & SOC'Y REV. 497, 508-09 (1976) (noting that purely definitional laws have no sanctions attached to them, but may have sanctions associated with them as they connect with other laws and practices).

⁵² Merryman, *supra* note 36, at 620. Professor Merryman continued:

It can be argued that statutes and cases *are* law, while secondary authorities [such as social science studies] are not. This distinction sounds good, but it actually begs the question. Whether secondary authorities are or are not law depends on what the courts do with them. If the courts cite them then they are in some sense law as a result of the citation; they become a part of the judicial process. . . .

The conclusion is that . . . authority varies in degree but not in kind, and statutes and cases are more authoritative than other legal and nonlegal writing, but are no more authority.

Id. at 621.

⁵³ 1 W. BLACKSTONE, COMMENTARIES *64.

⁵⁴ *Id.* at *68; see also C. ALLEN, LAW IN THE MAKING 119 (1948) (citing examples of customs recognized in the law, including wardship and marriage, freedom and equality of justice, and trial by jury).

Custom has always played an important role in the settlement of commercial disputes. As early as 1250 in England, as part of the royal franchise to hold a trade fair, local authorities were allowed to hold courts to settle business disputes that arose during the course of the fair. These "pie powder" courts, a name derived from the "pieds poudres" or dirty feet of itinerant merchants who frequented the fairs, employed rules of decision derived from the business customs of the day. These rules were later collectively labeled the "law merchant." See Bane, *From Holt and Mansfield to Story to Llewellyn and Mentschikoff: The Progressive Development of Commercial Law*, 37 U. MIAMI L. REV. 351 (1983). Modern commercial law has likewise been profoundly

D. *The Criterion for Classification*

We have argued that social science has some of the attributes of law, that no conceptual barriers exist to its being considered as law, and that precedent exists for treating similar positive materials as law. It follows that it is jurisprudentially *plausible* for courts to treat social science research as they treat prior judicial decisions under the common law. We also have freely conceded that social science research has some of the attributes of fact. In light of the history from *Muller* to the present, there is obviously no conceptual barrier to considering social science research as fact, and much precedent for so doing.

If we have made our threshold case that it is jurisprudentially possible for social science research to be classified as either law or fact, the next question concerns the nature of the argument that is to decide which classification should be used. Of two plausible classification schemes, how does one choose between them? How, in other words, does one decide which similarities—the similarities to law or the similarities to fact—are the most important? The question is taxonomic, and the extensive literature in the field of classification yields a clear answer: the better classification is the one that is most useful. “The real question,” according to Julian Simon, “is not whether or not the items you lump together are different in some ways, but whether or not they are similar *for your purposes*.”⁵⁵ Similarly, Carl McDaniel believes that classification schemes “must lend themselves to the purpose of the scholar in relation to the problem he is attacking. He must look for and identify the particular kinds of shared characteristics that are significant for his purposes, and must devise categories accordingly.”⁵⁶

influenced by custom. See Danzig, *A Comment on the Jurisprudence of the U.C.C.*, 27 STAN. L. REV. 621, 623 (1975) (“[T]he legislative process associated with the Uniform Commercial Code was more like law-stating than law-making.”); see also Goetz & Scott, *The Limits of Expanded Choice: An Analysis of the Interactions Between Express and Implied Contract Terms*, 73 CALIF. L. REV. 261 (1985) (examining the relationship between state-supplied contractual formulations and private contract terms).

Custom is perhaps most explicitly incorporated into international law. Article 38-1(b) of the Statute of the International Court of Justice provides that the Court “shall apply . . . international custom, as evidence of a general practice accepted as law.” The United States Supreme Court acknowledged custom as an authoritative source of international law as early as 1899. See *The Paquete Habana*, 175 U.S. 677, 700 (1899) (finding that in the absence of a treaty, executive and legislative acts, and judicial decisions, the courts should resort to “customs and usages of civilized nations” in order to determine what the law is).

⁵⁵ J. SIMON, *BASIC RESEARCH METHODS IN SOCIAL SCIENCES* 294 (1969).

⁵⁶ C. MCDANIEL, *RESEARCH METHODOLOGY* 23 (1974); see also A. KAPLAN, *THE CONDUCT OF INQUIRY* 51 (1964) (“The purpose of scientific classification is to facilitate the fulfillment of any purpose whatever . . .”).

The accepted view, therefore, is that classification is always provisional, depending entirely on how well the classification scheme suits particular purposes.⁵⁷ The adequacy of our proposal—that social science research be treated by the courts as courts treat legal precedent rather than as fact—depends, therefore, upon the quality of the judicial management procedures that flow from this social authority classification, as compared with the existing procedures that result from the fact classification. Like all classification decisions, this is largely an empirical question. The question in this case must be measured against the fairness and efficiency of the rules of law that result from the classification. We turn in Part III to a presentation of specific suggestions that are implicit in our proposal, and argue that they are sufficiently promising to warrant their being tested by the courts.

III. OBTAINING, EVALUATING, AND ESTABLISHING SOCIAL AUTHORITY

What implications flow from conceiving of social science as more akin to law than to fact? We offer a series of proposals addressed to the three questions that have proved most vexing to American courts when empirical studies appear relevant to rendering a decision: (1) how should courts obtain information from the social sciences?; (2) how should they evaluate it?; and (3) how should they treat the empirical conclusions established by other courts?

The heuristic presumption with which we approach each question is that courts should treat social science data the same way they treat legal precedent. The differences are striking between our proposals, which derive from a conception of social authority, and the existing melange of suggestions that regard empirical research as legislative facts. We believe that the strength of our theoretical position rests on the simplicity and coherence it brings to the tasks of obtaining, evaluating, and establishing social science in the courts.

A. *Obtaining Social Authority*

From a theory that posits social science as a source of authority in the law flow two corollary propositions regarding how a court should obtain empirical research: the parties should present empirical research to the court in briefs rather than by testimony; and the court may locate social science studies through its own research.⁵⁸

⁵⁷ See E. MAYR, *PRINCIPLES OF SYSTEMATIC ZOOLOGY* 80 (1969).

⁵⁸ See Brennan, *Working at Justice*, in *AN AUTOBIOGRAPHY OF THE SUPREME*

1. Written Briefs from the Parties

We noted in Part I that the concept of legislative fact, as reflected in the Federal Rules of Evidence,⁵⁹ does not inform the parties how to present empirical research to the court. The parties appear to be free either to present legislative facts via expert witnesses at a hearing or to include them in briefs, as Brandeis did in *Muller*.⁶⁰

Conceiving of scientific research not as legislative fact but as social authority resolves this indecision. If the research is more analogous to law than to fact, the parties should present the research to the court in the same manner that they would offer legal precedents, that is, in written briefs rather than by oral testimony. Parties wishing to argue that a prior legal decision should be taken as precedent for the present case do not do so by introducing as a witness the judge who wrote the prior opinion. Similarly, the oral testimony of the authors of social science research should not be the vehicle by which the research is introduced in court.

What would happen if courts foreclosed the option of party-initiated expert testimony and made Brandeis briefs the sole means of presenting social science research pertinent to a question of law? While this is an empirical question for which definitive data are not available, there are reasons to believe that written briefs are a superior medium to verbal testimony for communicating technical social science information.

Harold Korn, for example, questions "whether oral communication is at all conducive to correct determination of complicated scientific and technological issues A written report may be a much more effective way of explaining scientific detail and complexity."⁶¹ This may be due to several factors. The source of the communication—the social science researcher—has less time to frame a precise answer and less opportunity to refer to the primary data when responding verbally than when writing a book or an article. In hearing expert testimony, the judge faces a question-and-answer format that Thomas Marvell believes is "longer, less well organized and more difficult to follow than

COURT: OFF-THE-BENCH COMMENTARY BY THE JUSTICES 300, 303 (A. Weston ed. 1963). Justice Brennan uses the phrase "independent research" to refer to the judicial search for extra-record material such as social science research. This is preferable to the phrase "judicial notice," which is more relevant in the context of a judge recognizing a case-specific ("adjudicative") fact not in the record. See FED. R. EVID. 201.

⁵⁹ See FED. R. EVID. 201; *id.* 201(a) advisory committee note.

⁶⁰ 208 U.S. at 419 n.1 (1908).

⁶¹ Korn, *supra* note 42, at 1086.

written materials such as Brandeis briefs.”⁶² While some information, notably the demeanor of the witness, is lost in written communication, such evidence is more likely to distract the court than contribute to its understanding. The sweating, shifty-eyed witness to a criminal’s alibi may indeed be less credible than is the calm and self-assured witness; but observable nervousness on the part of an expert presenting social science data is more likely to reflect unfamiliarity with courtroom procedures than it is to indicate that the underlying data are invalid.

Apart from their superiority as a method of communicating social science data, written briefs provide at least two additional benefits.⁶³ First, it may cost less to prepare a brief than it does to present an expert witness. Indigent parties, therefore, may find the written brief their only option in presenting social science information. Second, since the appeal process often takes years, the testimony of an expert witness may be out-of-date by the time the court of last review decides the case. It is much more expeditious for the parties to submit updated briefs than it is to remand a case for additional expert testimony regarding research that has come to light since the case originally was decided.

2. Independent Judicial Investigation

We have noted that the legislative fact view offers only “convenience” as a possible justification for courts investigating independently to obtain empirical studies. Treating empirical research as a source of authority rather than as a type of fact can provide the principled direction now lacking on the issue of whether judges should locate research independently. The analogy is plain: as courts are free to find legal precedents that the parties have not presented,⁶⁴ they should also have the power to locate social science research through independent investigation. Courts are not limited to the case precedents contained in the parties’ briefs and are not required to remand for further hearings to develop a record in which case precedents can be introduced. Likewise, they should not be limited to the briefs or required to remand to obtain scientific research.

If the social authority concept provides the principle by which judges’ independent investigations can be justified, are there any countervailing reasons for precluding judicial investigation? Surely the most

⁶² See T. MARVELL, *supra* note 35, at 195.

⁶³ See *id.*

⁶⁴ See R. LEMPERS & S. SALTZBURG, *A MODERN APPROACH TO EVIDENCE* 850 (2d ed. 1982) (“In deciding questions of law, the judge is not confined to sources supplied by the parties.”).

serious objection is that judges cannot properly evaluate the research they may find, and that they may therefore base rules of law either upon invalid research studies or upon a misunderstanding of valid research.⁶⁵ The heuristic value of the social authority concept is, however, greatest at precisely this juncture. Thus, we now turn our attention to the issue of judicial evaluation of social science research.

B. *Evaluating Social Authority*

The question of what courts should do with empirical information after it has been obtained—by whatever means—has received remarkably little attention. Kenneth Culp Davis addressed only the issue of courts gathering research at their own initiative.⁶⁶ Even here, his proposal is entirely formal: in at least some circumstances, the court should notify the parties that empirical research is in hand and allow them an opportunity to “challenge” the data.⁶⁷

But on what grounds is the research to be challenged? And how may it be shown to have withstood the challenge? On these crucial substantive questions the concept of legislative fact suggests no course of action.⁶⁸ If one discards the legislative fact blinders, however, and begins to conceive of research as a form of authority in the law, the general direction courts should take in evaluating empirical data can be discerned from the way they evaluate case precedents.

Courts assign precedential value to prior judicial decisions by a process that is neither clear nor simple. One need not unpack the whole jurisprudence of precedent, however, to arrive at an appreciation of the factors on which courts rely in evaluating prior cases. At least four indices of precedential persuasiveness can be easily abstracted from the jurisprudential literature: (1) cases decided by courts higher in the appellate structure have more weight than lower court decisions; (2) better reasoned cases have more weight than poorly reasoned cases; (3) cases involving facts closely analogous to those in the case at issue have more weight than cases involving easily distinguished facts; and (4) cases followed by other courts have more weight than isolated cases.

We realize that these indicia of precedential value cannot be applied literally to the evaluation of social science research. Scientific studies themselves, for example, are not “decided” by or “appealed” to varying levels of the judiciary. Yet, as we hope to demonstrate, the

⁶⁵ See, e.g., *infra* text accompanying notes 113-20.

⁶⁶ See Davis, *An Approach to Problems of Evidence*, *supra* note 18, at 365-66.

⁶⁷ See *id.* at 392-93.

⁶⁸ See *supra* text accompanying notes 26-36.

principles courts use to distinguish cases in terms of their precedential worth bear a striking similarity to the principles used by social scientists to distinguish research studies in terms of their scientific worth.⁶⁹ We propose, therefore, that courts evaluate scientific research studies along four dimensions analogous to the four dimensions used to evaluate case precedent. Courts should place confidence in a piece of scientific research to the extent that the research (1) has survived the critical review of the scientific community; (2) has employed valid research methods; (3) is generalizable to the case at issue; and (4) is supported by a body of other research.

1. Critical Review

It is generally accepted that the higher the level of the court that issues a decision, the more authoritative the decision will be.⁷⁰ The essential justification for attributing more precedential weight to appellate than to trial court decisions is that trial court judgments have not been reviewed. That is, other judges have not subjected the decision of the trial judge to examination and re-analysis.

There are several reasons why appellate review has such importance as an index of precedential worth. The independent or disinterested nature of the review helps insure that technical mistakes have not been made.⁷¹ Appellate judges have the benefit of the trial judge's analysis of the law but are not bound by that analysis. The collegiality of appellate decisionmaking, which relies on groups of judges rather than on a single trial judge, reduces the risk of idiosyncratic interpretations

⁶⁹ The similarity we note between law and social science would not surprise philosopher of science Michael Scriven. Scriven claims that

it is true that *extremely wide-ranging* subjects, concerned with *human behavior*, in which a *systemic rational approach* is employed, aimed in part at yielding socially useful results, exhibit a great similarity of methods. . . . A good analysis of legal reasoning often shows us, in my view, some very important features of *all* reasoning—not just some special features of the methodology of law.

Scriven, *Methods of Reasoning and Justification in Social Science and Law*, 23 J. LEGAL EDUC. 189, 192-93 (1970). *But see* Haney, *Psychology and Legal Change: On the Limits of a Factual Jurisprudence*, 4 LAW & HUM. BEHAV. 147, 158 (1980) (asserting that “[s]ubstantial differences exist between the styles and methods of reasoning, proof, and justification used in psychology and law”).

⁷⁰ *See, e.g.*, E. WAMBAUGH, *THE STUDY OF CASES* 62 (1894) (“A decision of a court not of last resort is usually not of high persuasive authority.”).

⁷¹ For example, Henry Black stated that “[l]ower court] determinations are not binding upon the appellate court, because the same case, or similar case might be brought before it, and it would then of course be at liberty and under an obligation to consider the questions involved unhampered by any but its own previous decisions.” H. BLACK, *LAW OF JUDICIAL PRECEDENTS* 118-19 (1912).

of the law.⁷² Moreover, the perspective of appellate courts, which hear appeals from many trial jurisdictions, are conducive to developing more broadly-based and less fact-specific legal principles.⁷³

The importance of independent review by colleagues of broad perspective to the process of evaluating precedents finds a strong parallel in social scientists' evaluation of the merits of prior research studies. The first question asked by those who assess a research report typically concerns the thoroughness of the review process to which the report has been subjected. Findings generated by unpublished research, for example, are highly suspect, because no one in the scientific community has had the opportunity to evaluate the research methods or the inferences drawn from them. Research published in what are referred to as "non-refereed" journals, or by "vanity press" book publishers, are viewed with similar caution. In these cases as well, there has been no independent examination of the research by disinterested scientific colleagues who may have a broader perspective on the topic than does the researcher.⁷⁴

The publication of research in refereed journals, or in books that have professional editorial boards, is an important indication of the weight that social scientists will accord a finding. Upon seeing a report in a refereed journal, for example, a social scientist, without reading the study, will at least know that several disinterested social scientists, chosen largely for their own scientific accomplishments, have reviewed the research and have found it worthy of publication. Such a review process goes far in screening out empirical assertions unsupported by the data.⁷⁵

Social science research faces critical evaluation in several other contexts as well. Federal funding agencies generally rely on an expert review panel to evaluate the methodological adequacy of research proposals. Research funded by such agencies, therefore, has often survived

⁷² See K. LLEWELLYN, *THE COMMON LAW TRADITION: DECIDING APPEALS* 31 (1960).

⁷³ See C. CURTIS, *IT'S YOUR LAW* 127 (1954) ("[T]he fact that the courts of appeal work at a farther remove from the actual and the concrete, and therefore have to express their opinions in general terms, make their judgments inevitably applicable to similar future cases.").

⁷⁴ For example, the *Procedures for Renewal and Promotion in the Faculty of Arts and Sciences of the University of Virginia* (1983) specify that "articles in refereed journals" are to be distinguished from "popular articles and other publications" in the decision whether to grant tenure to a faculty member.

⁷⁵ It is not unusual for editorial reviewers to reject 80 to 90% of all submissions to "prestigious" social science journals. See *Summary Report of Journal Operations: 1984*, 40 *AM. PSYCHOLOGIST* 707 (1985). In contrast to law reviews, no social science journals place the manuscript selection process in the hands of student editors.

intense and highly competitive screenings.⁷⁶ After publication, the process of collegial review may continue. Research published in book form is the frequent object of critical reviews in journals.⁷⁷ Literature reviews, which summarize and analyze all of the findings on a given topic, are published periodically.⁷⁸ Perhaps the most authoritative form of post-publication review of scientific findings occurs when organizations such as the National Academy of Sciences or the National Institute of Mental Health appoint panels of the most distinguished scientists in the field, provide them with ample time and resources, and commission a state-of-the-art evaluation of a given area of research.⁷⁹ Courts could thus evaluate a piece of social science research initially by assessing the degree to which it has been subjected to, and has survived, critical review by other researchers in the area.

2. Valid Research Methods

The extent to which courts will accord a decision precedential value depends not only upon the level of court that issued it, but also upon the quality of reasoning revealed in the opinion itself. Decisions viewed as "well reasoned" are more likely to be taken as authoritative in future cases than are decisions in which the inferential links between the principles invoked and the holding reached are difficult to discern or are logically flawed. At one extreme, decisions that simply state the court's conclusions, without providing any supportive reasoning, are

⁷⁶ See, e.g., Information for the National Institutes of Health Research Grant Applicants 3 (Sept. 1976) (The "study section" that reviews grants in a given area of social science consists of 10 to 20 of the "best qualified, available, principally non-Governmental research investigators in the program areas." Those in charge of the study sections "strive to make certain that all points of view and theoretical interests within a given program area are represented in a balanced manner."); The National Science Foundation Program Announcement 9 (Dec. 31, 1985) ("All proposals are reviewed carefully by a scientist . . . serving as an NSF program officer and usually by 3 to 10 other individuals who are expert in the particular field represented by the proposal. Some program officers obtain further comment from assembled advisory committees before recommending final action on proposals.").

⁷⁷ For example, journals such as *Contemporary Psychiatry* and *Contemporary Psychology* publish reviews only of recent books.

⁷⁸ The Annual Review series, which includes the *Annual Review of Anthropology*, the *Annual Review of Psychology*, and the *Annual Review of Sociology*, among others, is the most well known book series of this type.

⁷⁹ Paul Giannelli has suggested that the National Academy of Sciences in fact has functioned like a "Science Court" in reviewing the validity of some scientific techniques. See Giannelli, *The Admissibility of Novel Scientific Evidence: Frye v. United States, a Half-Century Later*, 80 COLUM. L. REV. 1197, 1232 (1980); see also DETERRENCE AND INCAPACITATION: ESTIMATING THE EFFECTS OF CRIMINAL SANCTIONS ON CRIME RATES (A. Blumstein, J. Cohen & D. Nagin eds. 1978) (assessing the scientific validity of extensive research on the deterrent effects of criminal sanctions).

unlikely to persuade future decisionmakers.⁸⁰ At the other extreme, decisions that clearly detail a logical reasoning process may be found compelling when applied to similar fact situations in the future.⁸¹

While one can point to illustrations of particularly well-reasoned and particularly poorly-reasoned decisions, consensus does not exist on the objective indicia of the quality of judicial reasoning. Fortunately, for our purposes, there is more agreement among social scientists about the essential characteristics of scientific reasoning. There is consensus among social scientists of all disciplines that research must possess "validity." That is, the methods used in research must be able to justify the conclusions drawn by the investigator. Validity "is the basic minimum without which any experiment is uninterpretable."⁸² Validity refers to the trustworthiness of a piece of research on its own terms, not to whether the findings apply more broadly to other situations of interest.⁸³ To have "high" validity, a study must rule out, or "control for," competing hypotheses that may account for an observed state of affairs.

A number of factors have been identified that may compromise or threaten the validity of a research study.⁸⁴ Perhaps the most common threat to the validity of a study is selection bias.⁸⁵ For example, a research project that assessed the effects of a new pre-trial conference procedure by comparing the settlement rate in ten courts that volun-

⁸⁰ See Schaefer, *Precedent and Policy*, 34 U. CHI. L. REV. 3, 11 (1966) ("[A]n opinion which does not within its own confines exhibit an awareness of relevant considerations, whose premises are concealed, or whose logic is faulty is not likely to enjoy either a long life or the capacity to generate offspring.").

⁸¹ As Llewellyn explained:

For all over the American judicial universe the best cases have been and are the cases that give a singing reason for *either* following *or* extending *or* limiting the precedent. . . . The cases which make reputations, the cases which make light, the cases which are fragrant and lovely, and of which their authors are rightly proud, are the cases which contain a singing reason.

Llewellyn, *The Status of the Rule of Judicial Precedent*, 14 U. CIN. L. REV. 203, 217 (1940); see also R. LAUN, *STARE DECISIS* 13 (2d ed. 1947) (stating that "precedents derive their authority . . . [from] the autonomous subjective experience of the majority of those who, if the abstract rule . . . is applied to other concrete facts are required to obey").

⁸² D. CAMPBELL & J. STANLEY, *EXPERIMENTAL AND QUASI-EXPERIMENTAL DESIGNS FOR RESEARCH* 5 (1963); see also T. COOK & D. CAMPBELL, *QUASI-EXPERIMENTATION: DESIGN AND ANALYSIS ISSUES FOR FIELD SETTINGS* 37 (1979) ("We shall use the concepts *validity* and *invalidity* to refer to the best available approximation to the truth or falsity of propositions, including propositions about cause.").

⁸³ See *infra* text accompanying notes 100-10.

⁸⁴ For an examination of these factors, see D. CAMPBELL & J. STANLEY, *supra* note 82, at 5-6, 13-22; T. COOK & D. CAMPBELL, *supra* note 82.

⁸⁵ Each of the legal illustrations presented in this and the following section is taken from another source. See J. MONAHAN & L. WALKER, *supra* note 4, at 33-81.

teered for the new procedure with the settlement rate in ten courts that did not volunteer could be criticized for selection bias. Any differences between the two groups could be due to pre-existing differences between them—higher motivation on the part of the volunteers perhaps—rather than to the new procedure.

Another threat to the validity of a research study is “history.” History, in the sense used here, refers to events occurring during a research project that may confound the research findings. For example, a study of the effects of court-ordered busing that found that the proportion of white students in the affected school district decreased in the five-year period following the court order would have to contend with history before concluding that the court order caused the “white flight.”⁸⁶ One would want to ascertain what else took place in the five-year period. Was there an increase in property taxes, or a long-term trend toward the suburbanization of whites that could plausibly account for the results?

As a final illustration, “maturation” is a factor that often compromises the validity of long-term research studies.⁸⁷ If a seven-year prison treatment program found that offenders committed fewer crimes after they left the program than before they went to prison, maturation would threaten the validity of the inference that the program was a success. The results could be due solely to the fact that the offenders were seven years older when the program ended than they were when it began, and that older people, whether they receive treatment or not, commit fewer crimes than younger people.⁸⁸

Social scientists design their studies to minimize any factors that could compromise validity and make the results of the research equivocal or “poorly reasoned.”⁸⁹ Different research designs control for different threats to validity. Not only could courts learn to “spot” factors that might confound the interpretation of research studies, they could also assess the capacities of various research designs to deal with the issues noted.

The four research methods most commonly used in research that comes to the attention of courts are case studies, correlational designs,

⁸⁶ Cf. *Morgan v. Kerrigan*, 530 F.2d 401, 421 n.30 (1st Cir. 1976) (discussing appellants' suggestion that in attempting to formulate a desegregation plan the court should consider potential for white flight).

⁸⁷ See D. CAMPBELL & J. STANLEY, *supra* note 82, at 5.

⁸⁸ See Lind, Shapard & Cecil, *Methods for Empirical Evaluation of Innovations in the Justice System*, in EXPERIMENTATION IN THE LAW: REPORT OF THE FEDERAL JUDICIAL ADVISORY COMMITTEE ON EXPERIMENTATION IN THE LAW 81, 98 (1981).

⁸⁹ See D. CAMPBELL & J. STANLEY, *supra* note 82 (discussing threats to validity); T. COOK & D. CAMPBELL, *supra* note 82 (same).

quasi-experimental research, and true experiments. Of the four, case studies are universally regarded as the least adequate way to design research.⁹⁰ The intensive analysis of a specific case illustration, often used in journalism and biography, is close to useless as a method for drawing any valid conclusions.⁹¹ Case studies cannot guard against any threat to the validity of the conclusions reached. The most obvious failing of case studies is the lack of attention to selection bias. There is no way to know whether the observations made of a given case are representative of the observations that would characterize other cases. Indeed, cases may be chosen for study precisely because they are unusual (or "interesting"), and, therefore, the cases will not represent the larger population from which they are drawn.

The other research designs can produce much more valid conclusions. Correlational designs, for example, can establish whether a change in one factor is associated with a change in another, and may in some situations provide strong indications of cause-and-effect relationships.⁹² Correlational studies have long been used in employment discrimination cases to assess the extent to which higher scores on employment tests correlate positively with better job performance,⁹³ in death penalty cases to assess whether the execution rate correlates negatively with the murder rate,⁹⁴ and in many other areas of the law.⁹⁵

Likewise, the various forms of research grouped under the rubric of "quasi-experimentation"—covering those experiments in which random assignments cannot or are not used—can control for many possible threats to validity. "Time series" designs, for example, in which a factor is measured at numerous points in time, have been used to determine the effects of "breathalyzer crackdowns" on reducing the rate of traffic crashes⁹⁶ as well as the effects of court-ordered school busing on residential patterns.⁹⁷ The time-series design, because it measures the frequency of a factor, allows inferences to be made regarding whether

⁹⁰ D. CAMPBELL & J. STANLEY, *supra* note 82, at 6-7.

⁹¹ *See id.*

⁹² *See id.* at 64-66 (explaining that correlation studies may look at the causative relationship of two or more factors, such as heavy smoking and lung cancer).

⁹³ *See, e.g.,* Albemarle Paper Co. v. Moody, 422 U.S. 405, 425-35 (1975).

⁹⁴ *See* Gregg v. Georgia, 428 U.S. 153, 183-87 (1976); Furman v. Georgia, 408 U.S. 238, 345-54 (1972) (Marshall, J., concurring).

⁹⁵ *See generally* D. BARNES, STATISTICS AS PROOF 231-91 (1983) (explaining the ways in which correlational and other kinds of studies are used to prove factual issues relevant to legal disputes).

⁹⁶ *See* Ross, *Law, Science and Accidents: The British Road Safety Act of 1967*, 2 J. LEGAL STUD. 1, 20-35 (1973) (applying time series data to eliminate a number of alternative explanations for a reduction in the number of casualties after "breathalyzer crackdowns").

⁹⁷ *See* Morgan v. Kerrigan, 530 F.2d 401, 411-15 (1st Cir. 1976).

the intervention had an effect, or whether the observed data merely reflect a trend that pre-dated the intervention.

True experiments surpass other methods of research in their ability to avoid factors that compromise research validity. True experiments randomly assign participants to the various conditions under study. Random assignment assures to the maximum extent possible that the findings obtained are the result of the factor that the researcher wishes to study, rather than the result of pre-existing differences between the groups.⁹⁸ For example, courts have relied upon true experiments to assess the functioning of juries of various sizes.⁹⁹ A second way that courts could evaluate a piece of social science research, therefore, is to ascertain whether other explanations could account for the results, and, if so, whether the design of the research successfully eliminated any plausible competing explanations.

3. Generalizable Findings

A third factor in determining the precedential value of a case is the closeness of the analogy between that past case and the present case. Reasoning by analogy, often viewed as a central tenet of legal reasoning, has at least two components. First, and most obviously, courts will view cases as analogous when the cases involve what appear to be similar facts—when the prior case is seen as “on point” to the resolution of the case at bar.¹⁰⁰ Second, all else being equal, if two prior cases have facts similar to the facts in the present case, courts typically will rely on the more recent case. The more recent case precedent usually has the benefit of analyzing how other courts have developed the doctrine announced in the earlier case.¹⁰¹ The more recent case precedent is also more likely to reflect current social and economic conditions. As Wil-

⁹⁸ See D. CAMPBELL & J. STANLEY, *supra* note 82, at 13.

⁹⁹ See *Ballew v. Georgia*, 435 U.S. 223, 231-39 (1978) (citing a number of studies suggesting a positive correlation between group size and the quality of group performance).

¹⁰⁰ See, e.g., S. BURTON, *AN INTRODUCTION TO LAW AND LEGAL REASONING* 29 (1985) (“A judge or decision follows precedent when the facts of a previously decided case are sufficiently similar to those of a problem case for justice to require like treatment of the two cases”); Lücke, *The Common Law: Judicial Impartiality and Judge-Made Law*, 98 *LAW Q. REV.* 29, 37 (1982) (“Precedents are frequently applied with a real sense of inevitability, on the seemingly simple ground that the facts of the precedent and the facts of the case before the court, are indistinguishable. Such reasoning . . . is one of the most prominent stylistic elements of the common law”).

¹⁰¹ See H. BLACK, *supra* note 71, at 420 (“The earlier cases dealing with a judicial problem are not likely to have discussed it so thoroughly or so intelligently as those decisions rendered after it has been exhaustively explored by many courts and when the subject is clearly illuminated by their researches.”).

liam Landes and Richard Posner note, "a decision involving a collision between two horse-drawn wagons is bound to lose some of its precedential value when wagons are replaced by cars and trucks."¹⁰²

Translating the legal concept of reasoning by analogy to the context of evaluating social science research is surprisingly smooth. "Generalization" is the accepted rubric for evaluating how far beyond the specific facts of the study validly-produced research findings remain valid. The question of generalization, or "external validity,"¹⁰³ presupposes that the study was acceptably valid on its own terms, or internally valid. There is no point in evaluating the scope of application of a study that is inherently untrustworthy, just as one would not wish to reason by analogy from a poorly-reasoned legal decision.

While the question of the generalization of social science research, like the question of whether a legal analogy is compelling, "is never completely answerable,"¹⁰⁴ the dimensions that the inquiry must take have been identified.¹⁰⁵ They parallel almost precisely the factors courts commonly consider in ascertaining the precedential pertinence of prior decisions. In social science, however, the concept of "similar facts" is refined into two categories: (1) the similarity between the kinds of people studied in the research and the kinds of people to which the researcher wishes to generalize, and (2) the similarity between the kinds of settings or situations investigated and those of current interest.¹⁰⁶

In social science, therefore, generalization is assessed across three dimensions. First, one must consider whether the findings of a social science study can be generalized across persons. For example, the overwhelming bulk of social psychological studies on jury decisionmaking, which have frequently been relied upon by courts,¹⁰⁷ employ college undergraduates as research subjects. To the extent that college undergraduates are, on average, younger, brighter, and more affluent than the typical jury population (and if age, intelligence, and socioeconomic status are related to decisionmaking), the findings of the research have questionable generalizability to the issue of ultimate interest—how

¹⁰² Landes & Posner, *Legal Precedent: A Theoretical and Empirical Analysis*, 19 J. LAW & ECON. 249, 263 (1976).

¹⁰³ See D. CAMPBELL & J. STANLEY, *supra* note 82, at 5-6, 16-22; T. COOK & D. CAMPBELL, *supra* note 82, at 72.

¹⁰⁴ D. CAMPBELL & J. STANLEY, *supra* note 82, at 79.

¹⁰⁵ See *id.*

¹⁰⁶ See T. COOK & D. CAMPBELL, *supra* note 82, at 73.

¹⁰⁷ See, e.g., *Brown v. Louisiana*, 447 U.S. 323, 332 (1980) (adhering to empirical studies finding that "a decline in jury size leads to less accurate factfinding and a greater risk of convicting an innocent person"); *Ballew v. Georgia*, 435 U.S. 223, 231-39 (1978) (noting that studies suggest a positive correlation between group size and the quality of group performance and productivity).

“real” juries function.¹⁰⁸

Next, one must consider to what extent a research finding can be generalized across settings. That is, whether the findings apply in situations not directly involved in the original study. This issue would arise, for example, if studies on the effects of voluntary joint custody were used to predict the effects of mandatory joint custody.¹⁰⁹

The last dimension of generalizability concerns the extent to which research findings can be generalized over time. Like legal precedent, research findings can become outdated as circumstances change. A survey of the kinds of films that members of a community found “patently offensive” in the 1950’s, for example, might have little value in the context of an obscenity prosecution in the 1980’s.¹¹⁰ A third way, therefore, that courts could evaluate a piece of social science research would be to gauge the extent to which the people and situations studied in the research resemble those involved in the controversy at issue, and the extent to which the passage of time may have attenuated the findings.

4. Supported by a Body of Other Research

Finally, one of the most important indices of the precedential weight to be accorded a prior decision is the extent to which subsequent cases have agreed with it.¹¹¹ Decisions followed by many other courts

¹⁰⁸ See Weiten & Diamond, *A Critical Review of the Jury Simulation Paradigm: The Case of Defendant Characteristics*, 3 LAW & HUM. BEHAV. 75-77 (1979). Note that the studies may be generalizable, but that is a separate empirical question. See generally Lind & Walker, *Theory Testing, Theory Development, and Laboratory Research on Legal Issues*, 3 LAW & HUM. BEHAV. 5, 5 (1979) (discussing the contribution to the improvement of legal procedures and processes that could be made by testing and developing theories of legal behavior in laboratory studies); Monahan & Loftus, *The Psychology of Law*, 1982 ANN. REV. PSYCHOLOGY 441, 441-60 (arguing that simulation research is more appropriate for testing theoretical relationships than for predicting actual legal decisionmaking).

¹⁰⁹ See Scott & Derdeyn, *Rethinking Joint Custody*, 45 OHIO ST. L.J. 455, 484-88 (1984) (arguing that the growing preference in the law for joint custody arrangements is not supported by empirical research, which has primarily studied voluntary arrangements).

¹¹⁰ See Glassman, *Community Standards of Patent Offensiveness: Public Opinion Data and Obscenity Law*, 42 PUB. OPINION Q. 161 (1978). As another example, experimental research conducted before 1970 repeatedly found that women were more persuadable than men. Studies performed since 1970, however, have found few, if any, gender differences in susceptibility to persuasion. This suggests that “the historical period during which some of the experiments are conducted can serve as a powerful independent variable.” R. ROSNOW & R. ROSENTHAL, *UNDERSTANDING BEHAVIORAL SCIENCE: RESEARCH METHODS FOR RESEARCH CONSUMERS* 60 (1984).

¹¹¹ See Schaefer, *supra* note 80, at 11. In reviewing the bases upon which prior decisions were accorded precedential weight, Justice Schaefer of the Illinois Supreme Court noted that “[a]long with quality, quantity too is significant. A settled course of decision is more compelling than an isolated precedent.” *Id.*; see also R. CROSS, *supra*

receive the most searching form of independent review. The greater the number of courts that cite and rely upon a decision, the less likely it is that the decision contains some hidden flaw that, if discovered, would lead to a different result.

A similar situation exists with respect to scientific research. The trustworthiness of a study increases as independent investigators arrive at a common conclusion. The more often a study is confirmed by subsequent research, the less likely it is that chance fluctuations in the data accounted for the results of the original research.

For example, a single study that a particular prison treatment program produced no rehabilitative effect would be interesting and indicate the need for further research. But, in itself, the study would not undermine reliance upon offender rehabilitation as a principal justification of criminal sentencing. Perhaps the study was poorly done, or the observed data masked a real rehabilitative effect of the program. It is also possible that while the particular treatment studied did not have an effect on offender recidivism, other treatments would have some effect. However, when several hundred studies have examined the rehabilitative effect of a wide variety of correctional treatments, and virtually all of them conclude that receiving treatment bore no relationship to whether people commit crimes when released from prison, one can be much more confident in the empirical assertion that there are no proven methods for rehabilitating criminal offenders.¹¹² Thus, the final way that courts can evaluate a piece of social science research is to determine whether other studies have yielded congruent findings.

5. The Limits of Judicial Competence

The proposals we present for the evaluation of social science research by courts are intended to serve only as guidelines. Our proposals structure the dimensions along which courts should evaluate research, but they do not direct the judicial thumb to be turned up or down on any given research study.¹¹³ Courts cannot apply the guidelines

note 47, at 207-18 (discussing the use of precedent in defining legal rules and judicial discretion); A. GOODHART, PRECEDENT IN ENGLISH AND CONTINENTAL LAW 23-25 (1934) (examining the extent to which precedent is a binding force in English law); Merryman, *supra* note 36, at 624 (discussing the value of applying "accumulated wisdom" from previous decisions involving similar problems to the problem at issue).

¹¹² For empirical research on the rehabilitation of criminals, see NEW DIRECTIONS IN THE REHABILITATION OF CRIMINAL OFFENDERS (S. Martin, L. Sechrest & R. Redner eds. 1981); THE REHABILITATION OF CRIMINAL OFFENDERS: PROBLEMS AND PROSPECTS (L. Sechrest, S. White & E. Brown eds. 1979).

¹¹³ Under our guidelines, the minimal level at which a research study must "perform" in order to be used in formulating a rule of law may vary with the legal stan-

mechanically, adding "points" for random assignment and subtracting "points" for plausible hypotheses left untested. That a study was funded by a government agency, published in a refereed journal, or favorably reviewed in print by other social scientists, does not guarantee that the findings are trustworthy. Yet compared to research that does not possess indicia of surviving critical review by the scientific community, one can generally expect research so reviewed to be of higher empirical quality. Courts can, therefore, use such research with greater confidence.

It would be foolish to suggest that all social science studies can be evaluated adequately by reference to a simple checklist of threats to validity and a short catalogue of how various research designs neutralize those threats. Even a crude screening device to evaluate the validity of research studies, however, can go far in reducing a court's reliance upon inadequate empirical data. For example, simply appreciating that case studies do not provide scientific validation of cause-and-effect relationships could reduce much of the inappropriate reference to social science data that is found in court opinions.¹¹⁴

The fundamental objection that can be raised to any scheme that requires courts to evaluate social science research is that serious errors will be made in the evaluations. Armed with little knowledge, either courts will rely on research containing undetected flaws, or they will discount meritorious studies. In either case, a rule of law may come to be premised on an erroneous empirical foundation. Commentators have argued that the likelihood of such obviously undesirable outcomes, particularly when courts locate research material on their own initiative, is sufficient to justify some means of providing judges with expert assistance in evaluating research. The two most frequent proposals are for the court to notify the parties of its intention to rely upon a research study,¹¹⁵ thereby bringing the parties and their experts into the evaluation process, or for the court to have access to its own scientific advisors.¹¹⁶

dard of review applicable in the case. Studies used to support the rationality of a legislative action may not suffice to demonstrate an important or a compelling state interest. *See, e.g.,* L. TRIBE, *AMERICAN CONSTITUTIONAL LAW* §§ 16.2-16.4, at 994-1002 (1978) (contrasting the Supreme Court's approach to legislative action under the mere rationality and strict scrutiny tests).

¹¹⁴ The Supreme Court's use of a psychoanalytic case study to provide empirical support for the proposition that "sexually exploited children are unable to develop healthy affectionate relationships later in life" serves as a recent example of courts' inappropriate reliance on case studies. *See* *New York v. Ferber*, 458 U.S. 747, 758 n.9 (1982) (upholding a New York antipornography statute).

¹¹⁵ *See* Davis, *Facts*, *supra* note 18, at 376, 409 n.94.

¹¹⁶ The recommendation that courts have science advisors has a long history. *See*,

We believe that this issue cannot be resolved in the abstract. Whether courts can use the template we have provided to evaluate research for themselves, or whether, in order to avoid erroneous evaluations, courts must obtain expert assistance, depends upon both the particular judge doing the evaluation and the particular piece of research being evaluated.¹¹⁷

For example, studies that, upon initial judicial review, do not

e.g., Glueck, *The Social Sciences and Scientific Method in the Administration of Justice*, 167 ANNALS 106 (1933). Glueck suggested that

under the auspices of some such organization as an outstanding university or the American Law Institute, there might be established a clearing house The goal of such an enterprise would be to keep lawmakers, law interpreters, and law reformers continuously informed of the progress of thought and experience in those fields of human endeavor with which legislators, lawyers, and judges have to deal.

Id. at 115-16; *see also* Currie, *Appellate Courts Use of Facts Outside of the Record by Resort to Judicial Notice and Independent Investigation*, 1960 WIS. L. REV. 39. Currie points out that

the simplest method of making a judicial investigation of social and economic facts, which the court deems to be material on an issue of constitutionality or the adoption by the court of a rule of law, is to remand the same to the trial court for the taking of evidence. However, another method is open. Such is the appointment as a special master or an expert in a particular field of specialized knowledge to investigate certain scientific facts and report his conclusion to the court.

Id. at 49.

Arthur Miller and Jerome Barron make five suggestions "for improving the method of dealing with the independent development of legislative fact and legal doctrine by the Supreme Court." Miller & Barron, *supra* note 25, at 1233. The suggestions are as follows: (1) remand for trial court adjudication of legislative fact; (2) adoption of rules for judicial notice of legislative facts; (3) appointment of a panel of resident social scientists; (4) licensing the Supreme Court bar; and (5) requests by the Supreme Court for further information on questions of legislative fact. *See id.* at 1233-45. As Thomas Marvell notes, however, in discussing such special procedures, "These suggestions are often made, but the procedures are rarely if ever used at the courts studied [nor] apparently at other courts as well." T. MARVELL, *supra* note 35, at 192.

¹¹⁷ Much of the research cited by courts today would be easily dismissed if our guidelines were applied with any rigor. If the Supreme Court had applied the guidelines in *Williams v. Florida*, 399 U.S. 78 (1970), for example, none of the "experiments" the Court cited as supporting its conclusion that there were "no discernible differences," 399 U.S. at 101, between six- and twelve-person juries would have passed muster. The Court would have been spared the criticism that its empirical scholarship "would not win a passing grade in a high school psychology class." Saks, *Ignorance of Science is No Excuse*, TRIAL, Nov.-Dec. 1974, at 18; *see also* Zeisel & Diamond, "Convincing Empirical Evidence" on the Six Member Jury, 41 U. CHI. L. REV. 281, 292 (1974) ("The flaws in these studies are . . . not complex and surely not beyond the reach of modest expertise."). At the other extreme, application of the guidelines could increase the confidence of courts in relying upon methodologically exemplary studies, as the Third Circuit Court of Appeals, the Arizona Supreme Court, and the California Supreme Court recently did in evaluating studies on eyewitness identification. *See* U.S. v. Downing, 753 F.2d 1224 (3d Cir. 1985); *Arizona v. Chapple*, 135 Ariz. 281, 660 P.2d 1208 (1983); *People v. McDonald*, 37 Cal. 3d 351, 690 P.2d 709, 208 Cal. Rptr. 236 (1984).

unambiguously constitute authority for the case before the court require further and more methodologically sophisticated scrutiny before being discarded or embraced. Whether a judge should personally undertake this more detailed inquiry depends upon the competence that the individual judge brings to the task of evaluating empirical research,¹¹⁸ or upon the amount of effort that the judge is willing to invest in gaining such competence.¹¹⁹

¹¹⁸ One commentator has noted that

[t]he single most important barrier to the use of social science research in the practice of law is ignorance. . . . [I]gnorance of the social sciences leaves lawyers ill-equipped to evaluate social science research. As a result, many attorneys are unable to distinguish sound research from weak research, and consequently are reluctant to use social science research at all.

Lochner, *Some Limits on the Application of Social Science Research in the Legal Process*, 5 LAW & SOC. ORD. 815, 824 (1973).

The increasing number of law schools and post-graduate judicial education programs offering courses in law and social science, and the burgeoning literature on social science tailored to a legal audience may foreshadow a gradual, but nonetheless discernible, increase in judicial sophistication in this area. For discussions of the increasing use of social science in the law, see D. BARNES, *supra* note 95; N. CHANNELS, *SOCIAL SCIENCE METHODS IN THE LEGAL PROCESS* (1985); *EXPERIMENTATION IN THE LAW: REPORT OF THE FEDERAL JUDICIAL CENTER ADVISORY COMMITTEE ON EXPERIMENTATION IN THE LAW* (1981); W. LOH, *SOCIAL RESEARCH IN THE JUDICIAL PROCESS: CASES, READINGS, AND TEXT* (1984); J. MONAHAN & L. WALKER, *supra* note 4; D. VINSON & P. ANTHONY, *SOCIAL SCIENCE RESEARCH METHODS FOR LITIGATION* (1985); Meador, *The Graduate Degree Program for Judges at the University of Virginia*, 22 JUDGES' J. 19 (1983); Monahan & Walker, *Teaching Social Science in Law: An Alternative to "Law and Society,"* 35 J. LEGAL EDUC. 478 (1985).

¹¹⁹ Acquiring the knowledge of social science necessary to evaluate most research studies is no more difficult than acquiring the knowledge of economics necessary to adjudicate many antitrust cases or the knowledge of chemistry necessary to resolve much environmental litigation. Anyone who can comprehend the Federal Tort Claims Act can learn what standard deviation and statistical significance mean. One commentator has noted that

law professors, lawyers, and judges have, for a long time, learned and used technical vocabularies which have developed outside the law. If a lawyer can learn the difference between his gluteus maximus and his femur for purposes of a tort case, there is no reason why he cannot learn the difference between a chi-square test and a Spearman correlation coefficient. . . .

Nor is the methodology of the social sciences impossible to understand, as some critics charge. Although a good deal of social science methodology is difficult to grasp—statistical testing, for example—even these subjects can be mastered with some effort.

Lochner, *supra* note 118, at 826 (footnotes omitted).

Judge Roger Robb has observed that "[a] lawyer who is worth his salt and sits on a circuit court of appeals, if he puts his mind to it and studies long and hard enough, can master it and get at least an understanding of most technical problems." *Hearings Before the Commission on Revision of the Federal Court Appellate System* 830 (1975), quoted in T. MARVELL, *supra* note 35, at 374. Justice Traynor has expressed similar sentiments, arguing that

[w]e need not distrust judicial scrutiny of . . . extralegal materials. The

Furthermore, if courts adopt our proposals for evaluating social science research, the litigating parties will be quick to frame their empirical arguments along the dimensions suggested by the guidelines. The guidelines would lead the parties to detail the nature of critical review, argue the validity of research methods, assess the generalizability of findings, and marshal the support of additional research. Thus, the active participation of the parties should go far in lightening the burden of judicial evaluation.

Under our proposals there undeniably will be occasions when relevant research is before a court, but the complexity of the research will exceed the methodological competence that the evaluating judge possesses or can reasonably be expected to acquire. At this point, but only at this point, the risk of error is such that, as a last resort, some method of providing assistance to the court in evaluating the research must be found.¹²⁰ Notice to the parties and the use of court-appointed advisors or special masters are among options for providing this assistance. The social authority perspective is indifferent as to which option should be chosen.

C. *Establishing Social Authority*

Finally, we must consider a special issue in evaluating social science research: How should a court evaluate a study that another court has already evaluated? Studies of first impression may be evaluated as we propose, but additional considerations arise when another court previously has relied upon, or rejected, a particular piece of research. If the research has been evaluated by a court in another jurisdiction, the

very independence of judges, fostered by judicial office even when not guaranteed by tenure, and their continuous adjustment of sight to varied problems tend to develop in the least of them some skill in the evaluation of massive data. They learn to detect latent quackery in medicine, to question doddered scientific findings, to edit the swarm spore of the social scientists, to add grains of salt to the fortune-telling statistics of the economists.

Traynor, *Reasoning in a Circle of Law*, 56 VA. L. REV. 739, 750 (1970).

¹²⁰ See Isaacs, *The Law and the Facts*, 22 COLUM. L. REV. 1 (1922). Isaacs argues that

some of the general facts needed in the decision of technical questions are so highly complicated that it is hopeless to expect to instruct even the most intelligent judge in the course of a single case to the extent necessary to enable him to come to an accurate conclusion. At least, if the court is not made up of specialists, it ought to have the aid of special investigators capable of subjecting the evidence on general facts . . . to the same degree of scrutiny that the far less important and less difficult special facts are subjected to when they are presented to a jury.

Id. at 7.

evaluation of the former court may be treated much as its conclusions of law are treated. That is, its value as precedent could be determined according to the guidelines we have developed. Yet, what of research that has been evaluated by a court in the same jurisdiction as the court presently reviewing it? The issue arises often, and in two legally distinct situations.

1. The Effect of Lower Court Evaluation of Social Science Research upon Appellate Courts

If empirical studies are considered to be matters of fact, appellate courts would appear to be bound by lower court evaluations of the studies, at least if the lower court evaluations were not "clearly erroneous." As discussed in Part I, appellate courts commonly resort to the distinction between legislative facts and adjudicative facts to avoid the untenable result of being bound by two inconsistent lower court evaluations of the same research, neither of which is "clearly erroneous." Lower court findings of adjudicative facts, according to this view, are not reviewable on appeal (unless clearly erroneous), but lower court findings of legislative facts are reviewable.¹²¹

We reach the same result, but by a more parsimonious route.

¹²¹ See *supra* text accompanying notes 26-36. This question was considered in *Dunagin v. City of Oxford*, 718 F.2d 738 (5th Cir. 1983), a case involving whether a Mississippi statute that banned liquor advertising violated the first amendment. One trial court had found that the statute did violate the first amendment, see *Lamar Outdoor Advertising v. Mississippi State Tax Comm'n*, 539 F. Supp. 817 (S.D. Miss. 1982), and another trial court found that it did not, see *Dunagin v. City of Oxford*, 489 F. Supp. 763 (N.D. Miss. 1980). Writing for the court of appeals in *Dunagin*, Judge Reavley noted that

[t]he degree to which an appellate court should defer to the "fact" findings of a trial judge as to the latest truths in the social sciences is an interesting question. . . . The *Lamar Outdoor Advertising* court's finding that advertising restrictions do not directly advance the state's interest since there is no scientifically concrete link between advertising and alcohol consumption sounds very much like a finding of fact. Should this finding be subject to a clearly erroneous standard of review? Clearly not.

[T]he issue of whether there is a correlation between advertising and consumption is a legislative and not an adjudicative fact question. It is not a question specifically related to this one case or controversy; it is a question of social factors and happenings which may submit to some partial empirical solution but is likely to remain subject to opinion and reasoning.

718 F.2d at 748 n.8.

However, not all courts are in accord. See, e.g., *Ibn-Tamas v. United States*, 407 A.2d 626 (D.C. App. 1979) (finding an appellate court's reevaluation of social science studies that had been introduced at trial to be improper). In response to the dissent's criticism in *Ibn-Tamas* of the sample size used in one study, the majority stated, "We do not understand the basis on which an appellate judge can make a *de novo* determination here." *Id.* at 639 n.25.

Since appellate courts are not bound by lower courts' conclusions of law, they should not be bound by lower courts' conclusions regarding empirical research. A reviewing court is completely free to evaluate *de novo* any precedent used in a lower court decision.¹²² Similarly, the court should be unconstrained in its ability to reevaluate any social science research upon which a lower court relied in creating a rule of law. A court, for example, should have the discretion to find a study cited by a lower court insufficiently valid or generalizable, and, conversely, should be empowered to find methodological virtue in a piece of research dismissed by the court below. Indeed, it is precisely the authority—of whatever sort—relied upon by the lower court that the appellate court has the obligation to review.

2. The Effect of Appellate Court Evaluation of Social Science Research upon Lower Courts

In his descriptive study of several courts, Thomas Marvell found that when judges referenced social science, they tended to rely heavily upon studies that had been cited approvingly by higher courts, particularly by the United States Supreme Court.¹²³ As a jurisprudential matter, however, should an appellate court's endorsement or repudiation of a scientific authority affect lower courts' judgments? Considering scientific research as a type of fact is of no assistance in resolving this question, since appellate courts do not make findings of fact except in those

¹²² See R. LEMPERT & S. SALTZBURG, *supra* note 64, at 852-53.

¹²³ See T. MARVELL, *supra* note 35. Marvell found that, in one state supreme court in 1972, one of every seven "social facts" mentioned in majority opinions was in a quotation from a prior opinion, usually of the United States Supreme Court or the state supreme court itself. According to Marvell, "Social facts found in opinions very likely have an aura of authenticity that leads judges to accept them more readily and that makes them more presentable in opinions." *Id.* at 184. More than one-fourth of the social facts mentioned in attorneys' briefs to the state supreme court were from prior opinions, "but an interesting point is that most of the attorneys' quoted social facts were in opinions from other states and lower federal courts, whereas the judges seldom quoted social facts from such opinions, probably because they are considered far less authoritative than its own or Supreme Court opinions." T. MARVELL, *supra* note 35, at 184; see also Perry & Melton, *Precedential Value of Judicial Notice of Social Facts: Parham as an Example*, 22 J. FAM. LAW 633 (1984). Gail Perry and Gary Melton commented that

[i]t seems probable that social facts found in judicial opinions, especially in Supreme Court opinions, have an aura of authenticity that leads to greater judicial acceptance and makes them more presentable in opinions. Indeed, where a particular fact construction seems basic to a higher court's line of argument, lower courts may find it difficult to follow the principle of stare decisis without recognizing the same social "reality" found by the higher court.

Id. at 644-45.

rare instances when they find lower courts to have been clearly in error in determining the facts. Consistent with our position on social authority, we suggest that appellate courts' evaluation of social science research should affect lower courts to the same extent that their evaluation of case precedent affects lower courts.

To say that lower courts should be influenced by the conclusions that appellate courts have derived from social science research in the same way that they are influenced by the rules that the courts abstract from prior cases, however, does not mean that lower courts need be merely passive recipients of the empirical judgments issued above.¹²⁴ Just as new legal cases and commentary can develop and recast a given rule of law, so too new research and analysis—not previously considered by an appellate court—can change the empirical conclusions upon which a rule of law rests.

Consider, in this regard, Justice Blackmun's concurring opinion in *United States v. Leon*.¹²⁵ At issue was whether the exclusionary rule in criminal cases should be modified to allow the admission of evidence seized by the police in good faith reliance upon a search warrant later proved to be defective. After reaffirming that the Fourth Amendment did not compel the exclusionary rule, the majority used many existing social science studies to reach the judgment that the costs of barring evidence seized in good faith in terms of prosecutions lost exceeded the benefits in terms of police misconduct deterred.¹²⁶

Justice Blackmun found that the majority had made the correct empirical judgment "on the information before it," but wrote separately to stress that "any empirical judgment about the effect of the exclusionary rule in a particular class of cases necessarily is a provisional one."¹²⁷ The empirical assumptions upon which the decision rested, he wrote, will

now . . . be tested in the real world . . . and this Court will attend to the results. If it should emerge from experi-

¹²⁴ Lower courts can distinguish a study relied on by an appellate court by showing that its present use in the case at bar serves a different purpose than the one for which it was previously employed. Lower courts also can take the position that the reference to empirical research in appellate court opinions is merely dicta. See Perry & Melton, *supra* note 123, at 664. Finally, lower courts can point out in their own dicta that they believe the higher court erred in its empirical judgment. See *United States v. Roth*, 237 F.2d 796, 804 (2d Cir. 1956) (Frank, J., concurring) (stating that, although the Supreme Court had previously indicated its belief to the contrary, "[i]t is most doubtful . . . whether anyone can now demonstrate that children's reading or looking at obscene matter has a probable causal relation to the children's anti-social conduct").

¹²⁵ 104 S. Ct. 3405, 3423 (1984) (Blackmun, J., concurring).

¹²⁶ *Id.* at 3413 n.6.

¹²⁷ *Id.* at 3424 (Blackmun, J., concurring).

ence that, contrary to our expectations, the good faith exception to the exclusionary rule results in a material change in police compliance with the Fourth Amendment, we shall have to reconsider what we have undertaken¹²⁸

We go further: not only should a court be able to modify its *own* empirical conclusions as new research becomes available,¹²⁹ but a lower court should be able to reach empirical conclusions that differ from those of an appellate court when it has obtained new research not previously before the reviewing court.¹³⁰

CONCLUSION

The critical test of whether social science research used to create a legal rule is better analogized to fact or law should be pragmatic. The classification which most fairly and efficiently provides for obtaining, evaluating, and establishing social science in court should be adopted. We have argued that the law analogy works better than the fact analogy in responding to these central questions. Our view is necessarily speculative since courts now universally view social science research as a type of fact. Only the experience of courts that adopt a social authority perspective will determine whether the theory has value. We believe

¹²⁸ *Id.*

¹²⁹ *See id.*; *see also* *People v. Charles Schweinler Press*, 214 N.Y. 395, 108 N.E. 639 (1915) (validating a legislative act barring women from night work). The New York Court of Appeals, recognizing the importance of a 400-page Brandeis brief discussing the negative effects of night work on women, reversed a prior decision and sustained a statute prohibiting night work for women. The court stated that

[t]here is no reason why we should be reluctant to give effect to new and additional knowledge upon such a subject as this, even if it did lead us to take a different view of such a vastly important question as that of public health or disease than formerly prevailed.

Id. at 411-12, 108 N.E. at 644.

¹³⁰ There is some precedent for a lower court engaging in the anticipatory overruling of a higher court decision where that decision is predicated on an empirical circumstance that has changed over time. Courts and commentators have offered principled reasons for refusing to follow higher court precedent. *See, e.g., Pouquette v. O'Brien*, 55 Ariz. 248, 100 P.2d 979 (1940) (stating that the reasoning of the United States Supreme Court was such that if the question at issue were presented before it now, a contrary result would be reached); Note, *Lower Court Disavowal of Supreme Court Precedent*, 60 VA. L. REV. 494 (1974) (examining when lower courts should be permitted to discard Supreme Court precedent); Comment, *Stare Decisis in Lower Courts: Predicting the Demise of Supreme Court Precedent*, 60 WASH. L. REV. 87 (1985) (discussing circumstances in which it is justifiable for lower courts to refuse to follow Supreme Court precedent). The higher court, of course, can then review the lower court decision, including the new empirical information upon which its rule of law rests. As we have stated, the higher court would not be bound by the lower court's evaluation of the research, and therefore would be free to reinstate its original rule of law. *See supra* text accompanying note 122.

that if courts treat social science research as social authority, fewer judicial opinions will rely upon social science material, but the material that is used will be of much higher quality. Poor studies will be screened out, and exemplary research will become more apparent. In this way, the development of fair and efficient rules of law that rely in part upon empirical propositions will be facilitated.

