ARTICLES

EMPIRICAL QUESTIONS WITHOUT EMPIRICAL ANSWERS

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Empirical questions often lie at the heart of law. Courts increasingly turn to social science for assistance in answering these questions, but find that relevant research is frequently nonexistent or inadequate. This Article explores the chasm between what the law needs and what social science provides. The authors identify three types of legal questions to which social research could be brought to bear: social facts, social authority, and social frameworks. Social facts pertain only to the dispute between the parties to a lawsuit. Social authority relates to empirical assumptions that underlie a rule of law. Social framework refers to the use of general research results to provide a context for assisting the jury in deciding a specific factual issue. This Article documents the problems courts encounter when empirical questions do not have empirical answers, and offers recommendations on how courts should proceed in the absence of data. When social facts are at issue, evidentiary rules govern and the party with the burden of proof is disadvantaged by a failure to produce relevant empirical evidence. When the empirical proposition is in the nature of social authority underlying a legal rule, the course of action courts should take depends upon whether the rule was created in the common law or is the product of legislation. In the former case, candid judicial speculation is appropriate. In the latter case, the standard for judicial review of state action will dictate the result. Finally, when a social framework is at issue, the law of jury instructions controls. If no valid research exists, there is nothing on which to instruct a jury.

I. INTRODUCTION

Since the triumph of Legal Realism, American courts have been frank to acknowledge that empirical questions often lie at the heart of law. These questions range from the profound to the mundane: Does the death penalty deter murder? Does the design of a toy car confuse young consumers? Over the past fifty years, courts have increasingly turned to the social sciences for help in answering these empirical questions. While rarely determinative in themselves, social science studies have often constituted important evidence of contested facts or "modern authority"[1] for creating legal rules.

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1. "Modern authority" is the phrase used by the United States Supreme Court in Brown v. Board of Education, 347 U.S. 483, 494 (1954), to refer to social science research.

Yet the desire of courts to have empirical questions answered by empirical research often goes unrequited. The body of existing research on many questions of crucial interest to the law is either nonexistent or so plainly inadequate that judges are left to rely upon their own intuitions[2] or forced to resort to plainly inappropriate procedures[3] to transform unanswerable empirical questions into answerable doctrinal ones.

Interestingly, the large chasm between the law's needs and what social research provides has remained virtually untouched by scholarly analysis. Our own research on the uses of social science in law has focused on those instances in which there exists social research relevant to an empirical question in law.[4] Here we address for the first time the more common and vexing problem: what should a court do when it recognizes that a case turns in significant part upon an empirical proposition, yet no credible data exist to support or refute that proposition?[5]

We have found it heuristically fruitful to identify three types of legal issues on which social science is, or could be, brought to bear. The first two of these uses correspond in scope to what Kenneth Culp Davis has called "adjudicative fact" and "legislative fact."[6] We have, for reasons that will become clear, termed these uses "social fact"[7] and "social authority,"[8] respectively. "Social facts" are facts that pertain only to the parties before the court; they determine what happened in a particular case. "Social authority" pertains to propositions that un-

2. Marvell found that in only one-sixth of the cases in which one state supreme court made empirical assertions were those assertions supported by citations to empirical research. T. MARVELL, APPELLATE COURTS AND LAWYERS 187 (1978). On inadequate empirical research more generally, *see* Gardner, Scherer, and Tester, *Asserting Scientific Authority: Cognitive Developments and Adolescent Legal Rights*, 44 AM. PSYCHOLOGIST 895 (1989).

3. Shifting the "burden of proof" is the clearest illustration of this tendency. *See infra* text accompanying notes 75-76.

4. Monahan & Walker, *Social Authority: Obtaining, Evaluating, and Establishing Social Science in Law*, 134 U. PA. L. REV. 477 (1986) [hereinafter *Social Authority*]; Walker & Monahan, *Social Frameworks: A New Use of Social Science in Law*, 73 VA. L. REV. 559 (1987) [hereinafter *Social Frameworks*]; Walker & Monahan, *Social Facts: Scientific Methodology as Legal Precedent*, 76 CALIF. L. REV. 877 (1988) [hereinafter *Social Facts*]. *See generally* Monahan & Walker, *Social Science Research in Law: A New Paradigm*, 43 AM. PSYCHOLOGIST 465 (1988); J. MONAHAN & L. WALKER, SOCIAL SCIENCE IN LAW: CASES AND MATERIALS (2d ed. 1990).

5. Courts should not rush to the conclusion that "no credible data exists," however. When the parties do not on their own aeeord provide relevant data, the court should consider explicitly requesting that they search for any data that may exist. Courts can also invite amicus briefs that address empirical issues, and should be free to do their own independent search for empirical research. See Monahan & Walker, *Social Authority*, *supra* note 4, at 497-498.

6. Davis, *An Approach to Problems of Evidence in the Administrative Process*, 55 HARV. L. REV. 364 (1942) [hereinafter Davis, *An Approach to Problems of Evidence*].

7. *See generally* Monahan & Walker, *Social Facts*, *supra* note 4.

8. *See generally* Monahan & Walker, *Social Authority*, *supra* note 4.

derlie a generally-applicable rule of law, rather than those that decide only a particular case. The third use is a modern hybrid containing the essential elements of both adjudicative and legislative fact. We call this "social framework."[9] In this use, parties who accept the state of the law nonetheless offer general research results as a context or frame of reference to assist the jury in deciding specific factual questions.

In this Article, we propose that this same heuristic, developed to cope with the variety of uses for existing research, can also be employed to deal with the types of circumstances where empirical questions are raised, but empirical answers are lacking. Specifically, we argue that the lack of empirical research about a "social fact" should be resolved by strict adherence to a "burden of proof" formula. On the other hand, where "social authority" is at issue, allocating the "burden of proof" is inappropriate. Where the legal rule has been created in the common law, courts should rely upon the most plausible empirical assumptions available. Where the rule is the product of legislation, how unsupported empirical assertions should be dealt with depends on the standard of judicial review; under the "rationality" standard of fourteenth amendment Equal Protection review, courts normally should defer to the assumptions made by the legislature; under the "strict scrutiny" standard, courts may more freely reject the legislature's empirical assumptions. In the case of "social frameworks," the standards for issuing jury instructions should be followed. If supporting research does not exist, no instruction should be given.

Adhering to this scheme, we consider in Part II empirical questions that arise in determining "social facts" whose existence bears only on the dispute between the parties to a lawsuit. Part III deals with the more complex questions of "social authority" that arise when the empirical assumptions that underlie a rule of law are questioned. In Part IV, we attend to the novel but growing practice of courts to use general empirical propositions as a kind of context or "social framework" for deciding specific facts in a given case. Throughout, we focus on the particular problems posed by questions that remain unanswered by social science research. Finally, in Part V, we offer concluding observations about how courts are currently dealing with unanswered and perhaps unanswerable empirical questions, and how our proposals would affect judicial practice.

II. Social Facts

Kenneth Davis defined adjudicative facts as follows: "[w]hen an agency [or court] finds facts concerning immediate parties—what the

9. *See generally* Walker & Monahan, *Social Frameworks*, *supra* note 4.

parties did, what the circumstances were, what the background conditions were—the agency [or court] is performing an adjudicative function, and the facts may conveniently be called adjudicative facts."[10] Adjudicative facts, in other words, are facts that apply only to the particular parties before the court. They are used to determine (or "adjudicate") what happened in a specific case, and not for some larger purpose, such as to argue that the law should be changed. What Davis called an adjudicative fact has been referred to by other commentators as a "case fact,"[11] and by one court as "a plain, garden-variety fact."[12] Since our analysis focuses on adjudicative facts that concern human behavior and perceptions—rather than, for example, physical or biological phenomena—we refer to them as "social facts."[13] Consider two illustrations from trademark litigation, one of many areas of law that call for "factual" evidence about human behavior or perceptions.

In *Processed Plastic v. Warner Communications*,[14] Warner owned the rights to the "Dukes of Hazzard" television series and had licensed several toy manufacturers to produce replicas of a car featured in the series. The Processed Plastic Company, which did not have a license agreement with Warner, began to sell a toy car that resembled the car used in the television series. Warner sued for trademark infringement under the Lanham Trademark Act, which bars the sale of new products "likely . . . to cause confusion, or to cause mistake, or to deceive . . . ."[15] with regard to a product registered under the Act. In court, Warner produced as evidence of "consumer confusion" a social science survey of random groups of children questioned at shopping malls in which eighty-two percent of the children shown a Processed Plastic car identified it as "the *Dukes of Hazzard* car." The trial court decided, and an appellate court agreed,[16] that these data showed that Processed Plastic had infringed Warner's trademark rights by generating consumer confusion. As a result, an injunction against Processed Plastic was issued.

In *Squirt Co. v. Seven-Up Co.*,[17] the plaintiff, maker of a grapefruit-flavored soft drink named "Squirt," claimed that Seven-Up had infringed its trademark by naming a lemonade-flavored soft drink

10. Davis, *An Approach to Problems of Evidence*, *supra* note 6, at 402.
11. *See, e.g.*, T. MARVELL, APPELLATE COURTS AND LAWYERS 157 (1978).
12. Bowling v. Department of Ins., 394 So. 2d 165, 174 (Fla. Dist. Ct. App. 1981).
13. *See generally* Walker & Monahan, *Social Facts*, *supra* note 4. Use of the term "social fact" makes clear that our proposals are focused on social research, as opposed to research from the physical sciences. While the ideas proposed here may have application to the latter field, we do not consider those potential applications here.
14. 675 F.2d 852 (7th Cir. 1982).
15. 15 U.S.C. § 1052(d) (1990).
16. *Processed Plastic*, 675 F. 2d at 853.
17. 628 F.2d 1086 (8th Cir. 1980).

"Quirst." Squirt introduced a "store intercept study" in which customers entering three grocery stores were given discount coupons good for fifty cents off the purchase of any non-cola soft drinks. As they were leaving the store, these customers were interviewed to learn if they had used the coupon, and, if they had, were asked to name the soft drink they had purchased. Finally, these customers were asked to take their soft drink purchase out of the bag and show it to the interviewer. Approximately 4.3% of the respondents who said they had purchased "Squirt" had, in fact, purchased "Quirst." The district court relied on this study to hold that Seven-Up was infringing the "Squirt" trademark by generating consumer confusion.

However, what should a court do in trademark or similar cases when the parties contest a "social fact" but do not bring forth this sort of social science evidence in support of their assertions? Since social facts are explicitly within the purview of the Federal Rules of Evidence[18] and similar state codes,[19] the answer, it would seem, is to be found by identifying the party with the burden of proof[20] and then asking whether that burden has been met.

The substantive law, of course, identifies the party with the burden of proof and also specifies the type of evidence that will be sufficient to meet that burden. In trademark infringement cases, to continue our example, the plaintiff—the owner of a registered mark—bears the burden of proving by a preponderance of the evidence that the latecomer's

18. *See* FEDERAL R. EVID. 201 advisory committee's note (a) [hereinafter Note to Rule 201] *quoted in* 56 F.R.D. 183, 201-02: "This is the only evidence rule on the subject of judicial notice. It deals only with judicial notice of 'adjudicative' facts. . . . The terminology was coined by Professor Kenneth Davis in his article *An Approach to Problems of Evidence in the Administrative Process*, 55 HARV. L. REV. 364, 404-07 (1942)." The reference to "adjudicative facts" includes what we call "social facts," as well as other material. *See* Monahan & Walker, *Social Facts, supra* note 4.

19. *See, e.g.*, ARK. STAT. ANN. § 16-41-101, Rule 201 (1989); HAW. REV. STAT. § 626-1, Rule 201 (1989); OHIO R. EVID. 201.

20. "Burden of proof" comprises two distinct "burdens" in both civil and criminal law: the burden of production and the burden of persuasion. As stated by Jeffries and Stephan:

> The burden of production refers to the obligation to raise an issue. The burden of persuasion refers to the risk of uncertainty as to the issue's resolution. Thus, the party bearing the burden of production will have an issue resolved against him if it is not raised by the evidence. The party bearing the burden of persuasion will have an issue resolved against him if, after all the evidence is considered, the trier of fact remains uncertain on the point.

Defenses, Presumptions, and Burden of Proof in the Criminal Law, 88 YALE L. J. 1325, 1329 n. 8 (1979).

See also J. THAYER, A PRELIMINARY TREATISE ON EVIDENCE AT THE COMMON LAW 355-59 (1898); McNaughton, *Burden of Production of Evidence: A Function of a Burden of Persuasion*, 68 HARV. L. REV. 1382 (1955); Fletcher, *Two Kinds of Legal Rules: A Comparative Study of Burden-of-Persuasion Practices in Criminal Cases*, 77 YALE L.J. 880 (1968); Underwood, *The Thumb on the Scales of Justice: Burdens of Persuasion in Criminal Cases*, 86 YALE L. J. 1299 (1977). In discussing "burden of proof" we intend to refer to both the burden of production and the burden of persuasion.

product will cause "consumer confusion."[21] Courts interpreting the Lanham Act have often held, as in *Processed Plastic* and *Squirt*,[22] that it is not only acceptable for the plaintiff to present social science surveys as evidence of "consumer confusion"—and for the defendant to present its own survey in rebuttal[23]—but that such surveys are the best possible evidence. "In fact, when considering that such surveys were once purely inadmissible," one commentator observed, "it is perhaps remarkable that the failure of a trademark owner to run a survey may now give rise to an adverse inference."[24] In *Information Clearing House, Inc. v. Find Magazine*,[25] for example, the court stated that it was "significant that plaintiff, though possessed of the financial means, did not undertake a survey of public consumer reaction to the products."[26]

While social science studies are not the only form of evidence for proving consumer confusion,[27] they are clearly the preferred form of evidence for proving this "social fact."[28] Failure of the plaintiff to introduce valid survey results may not be fatal to its claim of infringement, because other, less probative, forms of evidence bearing on consumer confusion may be available. But with courts beginning to draw adverse inferences from a lack of survey evidence, it will be a rare case where infringement is found in the absence of social science research.

More generally, failure to carry the burden of proof regarding an issue based on social fact will ordinarily result in victory for the opposing party, at least with respect to that issue in the case. The most important consequence of this simple formula may be that it has established a standard for courts when dealing with unanswered empirical questions that arise in the context of law making. As the next part makes clear, courts have tended to extend the "burden of proof" formula well beyond its proper role in deciding questions of social fact.

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21. Mushroom Makers, Inc. v. R.G. Barry Corp., 580 F.2d 44, 48 (2d Cir. 1978). *See generally* B. PATTISHALL & D. HILLIARD, TRADEMARKS (1987).

22. *Processed Plastic*, 675 F.2d 852; *Squirt*, 628 F.2d 1086.

23. *See, e.g.*, Amstar Corp. v. Domino's Pizza, 615 F.2d 252 (5th Cir. 1980).

24. Lipton, *A New Look at the Use of Social Science Evidence in Trademark Litigation*, 78 TRADEMARK REP. 32, 63 (1988).

25. 492 F. Supp. 147 (S.D.N.Y. 1980).

26. *Id.* at 160. *See also* Mushroom Makers, Inc. v. R. G. Barry Corp., 441 F. Supp. 1220, 1231 & n.44 (S.D.N.Y. 1977), *aff'd*, 580 F.2d 44 (2d Cir. 1978), *cert. denied*, 439 U.S. 1116 (1979).

27. In Polaroid Corp. v. Polarad Elecs. Corp, 287 F.2d 492, 495 (2d Cir. 1960), *cert. denied*, 368 U.S. 820 (1961), the Second Circuit specified a large number of factors of potential relevance in proving likely confusion, including the strength of the plaintiff's mark (for which advertising and sales figures are relevant evidence), defendant's bad faith adoption of the mark (for which instructions to a designer to imitate plaintiff's package are relevant evidence), and actual confusion (for which evidence of misdirected mail or phone calls is relevant). *See* S. KANE, TRADEMARK LAW: A PRACTITIONER'S GUIDE 117-37, 239-42 (1987).

28. *See generally* J. MONAHAN & L. WALKER, SOCIAL SCIENCE IN LAW: CASES AND MATERIALS, *supra* note 4, at 83-108.

III. Social Authority

Davis defined "legislative facts" as follows: "[w]hen an agency [or court] wrestles with a question of law or policy, it is acting legislatively . . . and the facts which inform its legislative judgment may conveniently be denominated legislative facts."[29] Legislative facts, in other words, are facts that courts use when they make law, rather than when they apply settled doctrine to resolve a dispute between particular parties to a case. While the determination of social ("adjudicative") facts affects only the litigants before the court, the determination of legislative facts influences the content of legal doctrine itself, and therefore affects many parties in addition to the litigants.[30]

Ballew v. Georgia[31] illustrates the use of social science data as legislative fact. The defendant was convicted of a misdemeanor by a state jury of five persons. He appealed on the ground that being afforded a jury of only five persons deprived him of the right to trial by jury guaranteed by the sixth and fourteenth amendments. In *Williams v. Florida*,[32] the United States Supreme Court upheld a six-person jury in a state criminal trial, finding no support in the text or history of the constitution that the number of jurors should be fixed at twelve. Rather, the Court said, "[t]he relevant inquiry . . . must be the function that [jury size] performs and its relation to the purposes of the jury trial."[33] In the opinion of the Court in *Ballew*, Justice Blackmun cited several dozen social psychological studies of small-group decisionmaking to analyze the functioning of juries of different sizes. He concluded his analysis as follows:

> While we adhere to, and reaffirm our holding in *Williams v. Florida*, these studies . . . lead us to conclude that the purpose and functioning of the jury in a criminal trial is seriously impaired, and to a constitutional degree, by a reduction in size to below six members. We readily admit that we do not pretend to discern a clear line between six members and five.

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29. Davis, *An Approach to Problems of Evidence*, *supra* note 6, at 402.

30. The term "legislative fact" "has been widely accepted in the federal appellate courts." Broz v. Schweiker, 677 F.2d 1351, 1357 (11th Cir. 1982). The United States Supreme Court has invoked it on numerous occasions. *See, e.g.*, Lockhart v. McCree, 476 U.S. 162, 170 n.3 (1986); Concerned Citizens v. Pine Creek Conservancy Dist., 429 U.S. 651, 657 (1977); *see also* Keeton, *Legislative Facts and Similar Things: Deciding Disputed Premise Facts*, 73 Minn. L. Rev. 1 (1988); Faigman, *To Have and Have Not: Assessing the Value of Social Science to the Law as Science and Policy*, 38 Emory L.J. 1005 (1989); Faigman, *Normative Constitutional Fact Finding: Exploring the Empirical Component of Constitutional Interpretation*, 139 U. Pa. L. Rev. 541 (1991); Saks, *Judicial Attention to the Way the World Works*, 75 Iowa L. Rev. 1011 (1990).

31. 435 U.S. 223 (1978).

32. 399 U.S. 78 (1970).

33. *Id.* at 99-100.

> But the assembled data raise substantial doubt about the reliability and appropriate representation of panels smaller than six.[34]

It is essential to note at the outset that legislative facts such as those relied upon in *Ballew* are explicitly excluded from the scope of the Federal Rules of Evidence and similar state codes. The official commentary to the Federal Rules is plain on this point: "[n]o rule deals with . . . 'legislative facts.' "[35] As Davis stated, rules of evidence "may, of course, be perfectly appropriate for adjudicative facts; they seem to me wholly inappropriate for legislative facts. . . ."[36] Davis also wrote that "[t]he exceedingly practical difference between legislative and adjudicative facts is that . . . the tribunal's findings of adjudicative facts must be supported by evidence, but findings or assumptions of legislative facts need not, frequently are not, and sometimes cannot be supported by evidence."[37]

If legislative facts need not or cannot be supported by "evidence," in the sense of material subject to the Federal Rules of Evidence and similar state codes,[38] where is support for them to be found? Davis refers to material used to support findings of legislative fact as "extra-record facts."[39] Others allude to "social and economic data."[40] As we will discuss shortly, such material will be presently referred to as "social authority."[41]

The realization that legislative facts are not supported by "evidence" suggests that courts confronted with unsupported empirical assertions underlying a rule of law cannot rely upon the same analysis used for social ("adjudicative") facts. That latter analysis, the reader will recall, began with an inquiry as to the party with the burden of proof for the social fact at issue, and proceeded to an examination of the type of evidence that might meet the burden. Similarly, "burden of proof" is a concept associated solely with social ("adjudicative") facts, finding expression in the Federal Rules of Evidence, in similar state codes and in the common law in this case-specific context, but not within the context of judicial law-making. Likewise, an examination into the types of evidence that might satisfy this burden is not availing, since "legislative facts" are not subject to "proof" by "evidence."

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34. *Ballew*, 435 U.S. at 239.
35. Note to Rule 201, *supra* note 18, at 202.
36. Davis, *An Approach to Problems of Evidence*, *supra* note 6, at 406.
37. Davis, *Judicial Notice*, 55 COLUM. L. REV. 945, 952-53 (1955).
38. *See, e.g.*, FLA. STAT. ANN §§ 90.101-92.60 (West 1989); HAW. REV. STAT. § 626-1 (1989); OR. REV. STAT. §§ 40.010-40.585 (1989).
39. Davis, *An Approach to Problems of Evidence*, *supra* note 6, at 406.
40. McCormick, *Judicial Notice*, 5 VAND. L. REV. 296, 315 (1952).
41. *See* Monahan & Walker, *Social Authority*, *supra* note 4.

Clearly, an answer to the question of how courts are to deal with unsupported empirical assertions underlying a legal rule is not to be found by analogy with the procedures used to analyze unsupported social facts. But where might an answer be found? One might reasonably look for guidance to the concept of legislative fact itself. Yet, upon close examination, "legislative fact" is revealed to be an entirely negative notion. Its connotations are limited to what courts should *not* do: they should not treat "facts" used in law-making in the same way that they treat the routine facts that are specific to any given adjudication.[42]

More specifically, when there exists social science research that bears on creating or changing a rule of law, the concept of "legislative fact" fails to provide direction to courts for dealing with the three questions most salient to deciding a given case. Namely, 1) how they should *obtain* the research;[43] 2) how they should *evaluate* the research once obtained;[44] and 3) how they should *establish* their empirical conclusions so as to influence the decisions of succeeding courts.[45] The concept of "legislative fact" is equally barren when an empirical assumption is acknowledged to underlie a rule of law but no empirical data exist that bear on its resolution. It is difficult to gainsay the con-

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42. *See id.* at 485-88.

43. Davis would apparently allow empirical research that bears on creating or changing a rule of law to be offered in a written ("Brandeis") brief, Davis, *An Approach to Problems of Evidence*, *supra* note 6, at 403, by the oral argument of a lawyer, *id.* at 410, or the oral testimony of an expert at a hearing, *id.*, or obtained through the court's own independent investigation, *id.* at 403-10. When courts obtain research through their own investigation, sometimes parties should be apprised of the research and given the opportunity to respond to it, and other times not. Davis, *Facts in Lawmaking*, 80 COLUM. L. REV. 931 (1980). Most recently, Davis has proposed the creation of a "research service" for the Supreme Court, analogous to the Congressional Research Service, "to increase the Court's freedom to obtain whatever research assistance it decides it needs." Davis, *Judicial, Legislative, and Administrative Lawmaking: A Proposed Research Service for the Supreme Court*, 71 MINN. L. REV. 1, 17 (1986). The Federal Rules of Evidence, which endorse Davis' notion of legislative fact, present the additional option of having an appellate court remand a case to the trial court "for the taking of evidence" regarding social science research. Note to Rule 201, *supra* note 18.

44. *See* Monahan & Walker, *Social Authority*, *supra* note 4, at 487:

> 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 . . . how courts should evaluate the information they do obtain. . . . 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.

45. *See* Monahan & Walker, *Social Science Research in Law: A New Paradigm*, *supra* note 4, at 466:

> [I]f one judge draws conclusions from social science research about an empirical assumption underlying a rule of law, what is the next judge who confronts the same empirical question supposed to do? The options range from deferring to the first judge who evaluated the research to reopening the question for a completely new (de novo) evaluation of the same studies. The concept of legislative fact does not assist the second judge in choosing among them.

clusion of a leading evidence text that "a viable formulation of rules . . . with regard to legislative facts has not proven feasible."[46]

In previous work, we have argued that improvements in the manner that courts deal with empirical assumptions in law-making are possible only by jettisoning the notion of "legislative fact" entirely, and developing a new paradigm that fundamentally alters the way in which courts view empirical research. Offering "social authority" as the pivotal construct in such a paradigm,[47] we advanced the proposition 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." More specifically, we proposed that courts treat social science research much as they would legal precedent under the common law.[48] Such a scheme would lead to a coherent set of procedures for obtaining, evaluating, and establishing social science research used to make law.[49]

The issue here, however, is how courts are to proceed when they acknowledge that an empirical proposition is a predicate for a rule of law, but lack "social authority" bearing on that proposition. Since the course of action courts take might differ depending upon whether the empirical assumption arises in the context of the common law or in the context of judicial review of state action, we consider each situation separately.

A. Empirical Assumptions in the Common Law

United States v. Leon[50] illustrates the role of empirical assumptions in the common law. There, the United States Supreme Court addressed

46. E. CLEARY, K. BROUN, G. DIX, E. GELLHORN, D. KAYE, R. MEISENHOLDER, E. ROBERTS, & J. STRONG, MCCORMICK ON EVIDENCE § 334 (3d ed. 1984).

47. *See* Monahan & Walker, *Social Authority*, *supra* note 4.

48. *Id.* at 488-89:

> 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 fact or 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.

49. For example, the parties should offer empirical research to courts in written briefs and judges may locate social seience research by searching for it themselves. This is the same way that courts obtain legal materials. Testimony by expert witnesses and remands to "obtain evidence" would not be used. Similarly, under this view, the way that courts should evaluate empirical data can be determined by analogy to the way they evaluate legal precedent. Courts should evaluate social science studies along four dimensions similar to the dimensions used to evaluate common law precedent: courts should place trust in social science research to the extent that the research (a) has survived the careful review of the scientific community; (b) has employed valid research methods; (c) is generalizable to the legal question being considered; and (d) is supported by a body of other social research. Finally, because by law appellate courts are not bound by trial courts' decisions about law, appellate courts should be free from trial courts' decisions about empirical research: de novo review is the correct standard. See Monahan & Walker, *Social Authority*, *supra* note 4, at 498-508.

50. 468 U.S. 897 (1984).

whether the exclusionary rule prohibiting the admission of illegally obtained evidence at a criminal trial should be modified to admit evidence that the police seized while relying in good faith on a search warrant that later proved to be defective. The empirical assumptions at issue were whether the exclusionary rule "deters some police misconduct,"[51] and the extent to which the rule results in the non-prosecution of "guilty defendants."[52] Much social science research has been devoted to testing these assumptions, and a description and evaluation of that research fills much of the opinion. The majority, however, found the research on deterrence unpersuasive: "[n]o empirical researcher, proponent or opponent of the rule, has yet been able to establish with any assurance whether the rule has a deterrent effect . . . ."[53] Research findings on the effects of the rule on case disposition were similarly disparaged.[54]

Given the Court's explicit acknowledgement in *Leon* that empirical questions underlie the exclusionary rule, and its assessment that the existing research does not provide satisfactory answers to these questions, how should the Court handle its empirical uncertainty? Conceiving of social science research, when used to create a legal rule, as more analogous to law itself than to fact (i.e., as a form of "social authority"), suggests the following heuristic: how do courts decide legal issues in the absence of precedent? That is, how do courts proceed in cases of "first impression"?

The predominant answer is that courts, faced with the necessity of deciding a novel case, often proceed by articulating the competing interests at stake and then formulating a rule that balances those interests to promote a desirable public policy.[55] Empirical questions about the nature of those competing interests, and about the consequences of a policy giving priority to one of them may weigh heavily in the balancing process. When empirical assumptions are supported by "social authority" in the form of social science research, that research is often cited and relied upon in balancing interests and formulating a legal rule.[56] When no research, or inadequate research, exists to support

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51. *Id.* at 919.

52. *Id.* at 907.

53. *Id.* at 918 (*quoting* United States v. Janis, 428 U.S. 433, 452, n.22).

54. *Id.* at 907 n.6.

55. *See, e.g.*, R. CROSS, PRECEDENT IN ENGLISH LAW 192, 197 (3d ed. 1977):

> [W]hen the case is one of first impression . . . [t]he normal procedure is for [the judge] to state the pros and cons of each party's case, and formulate the principle upon which the decision is based. . . . [T]he ultimate answer can only be provided with the aid of reasoning with reference to the cumulative effect of independent premises, which often consists of balancing various policy considerations.

For an extended history and critique of balancing in constitutional law, see Aleinikoff, *Constitutional Law in the Age of Balancing*, 96 YALE L.J. 943 (1987); Van Zandt, *An Alternative Theory of Practical Reason in Judicial Decisions*, 65 TULANE L. REV. 775, 808 (1991).

56. *See, e.g.*, Hill v. Yaskin, 380 A.2d 1107, 1110 (1977), in which the Supreme

empirical assumptions, however, the courts fulfill their obligation to render a decision by relying upon those empirical assumptions that seem most *plausible.* Based on their experience and intuition,[57] along with whatever information may be available, judges will *speculate* on what would be the likely impact of valid social science research on the empirical assumptions at issue.

Leon illustrates this common law process of plausible speculation well. In early exclusionary rule cases, the social ("adjudicative") fact notion of "burden of proof" was occasionally invoked.[58] By the time of *Leon,* however, procedural devices such as those allocating the burden of proof were no longer seen as the appropriate method for dealing with empirical propositions used in making the common law. The *Leon* Court explicitly stated that the issue before it "must be resolved by weighing the costs and benefits"[59] of a good faith exception to the rule, that is, by attending to the substance of the question and balancing the competing interests involved.[60] Justice Blackmun, in a concurring opinion, made the Court's reliance upon plausible empirical assumptions in that balancing process explicit:

> As the Court's opinion in this case makes clear, the Court has narrowed the scope of the exclusionary rule because of an empirical judgment that the rule has little appreciable effect in cases where officers act in objectively reasonable reliance on search warrants. . . . I see no way to avoid making an empirical judgment of this sort, and I am satisfied that the Court has made the correct one on the information before it.[61]

Justice Blackmun went on to articulate the advantage of a court's acknowledging that empirical assumptions underlie a common law rule

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Court of New Jersey, citing an "impressive array of statistical information" on the risk of theft and subsequent accidents presented by leaving ignition keys in unattended vehicles, held a vehicle owner and a parking lot owner potentially liable for damages incurred when an automobile with the keys left in the ignition was stolen and crashed into plaintiff's car.

57. *See* T. MARVELL, *supra* note 2, at 179 (Judges' "most important resource [in evaluating empirical propositions] is their experience—their knowledge gained from their work before becoming an appellate judge and from their study of many disputes while on the bench.") *See also* Posner, *The Jurisprudence of Skepticism,* 86 MICH. L. REV. 827 (1988) and Wilkinson, *The Role of Reason In the Rule of Law,* 56 U. CHI. L. REV. 779 (1989) for lucid judicial exposition of the sources and constraints that govern this process.

58. *See Leon,* 468 U.S. at 942-43 (Brennan, J., dissenting) (citing United States v. Janis, 428 U.S. at 453-54 for this proposition); *see, e.g.,* Bivens v. Six Named Agents of Federal Bureau of Narcotics, 403 U.S. 388, 416 (1971) (Burger, C.J., dissenting). *See* Dworkin, *Easy Cases, Bad Law, and Burdens of Proof,* 25 VAND. L. REV. 1151, 1175 (1972) ("[E]very judicial decision cast in burden of proof terms is essentially a substantive law decision").

59. *Leon,* 468 U.S. at 906-07.

60. The Court concluded that "the marginal or nonexistent benefits produced by suppressing evidence obtained in objectively reasonable reliance on a subsequently invalidated search warrant cannot justify the substantial costs of exclusion." *Id.* at 922.

61. *Id.* at 927.

and candidly stating that a decision rests on plausible but unvalidated speculations:

> What must be stressed, however, is that any empirical judgment about the effect of the exclusionary rule in a particular class of cases is necessarily provisional. By their very nature, the assumptions on which we proceed today cannot be cast in stone. To the contrary, they will now be tested in the real world of state and federal law enforcement, and this Court will attend to the results. If it should emerge from experience 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 undertaken. The logic of a decision that rests on untested predictions about police conduct demands no less.[62]

The great advantage of judicial candor about the role of empirical assumptions and the speculative nature of their resolution, then, is that the common law is left open to change as new social authority bearing on those assumptions becomes available.[63] A corollary of this candor is that it clearly signals to the social science research community, and the government agencies that fund their research, the importance of empirical assumptions in the law (the judiciary's "working hypotheses"), and the receptiveness of courts to obtaining social authority bearing on them.

In the making of common law, therefore, courts often cannot avoid basing legal rules on empirical assumptions. Frequently, those assumptions will lack support in the form of social authority provided by the parties, or otherwise found by the court through its own independent research.[64] In such cases, courts should rely upon the most plausible assumptions available at the time of the decision and allow future developments in experience or in research to modify these assumptions. This, of course, is how the common law always evolves.

B. Empirical Assumptions in Judicial Review of State Action

Judicial review of the decisions of other branches of government is a vast topic.[65] We shall simplify our analysis by focusing on judicial

62. *Id.* at 928.

63. *See* T. MARVELL, *supra* note 2, at 185.

64. *See supra* note 49.

65. *See, e.g.* J. NOWAK, R. ROTUNDA & J. YOUNG, CONSTITUTIONAL LAW 1-110 (3d ed. 1986); G. STONE, L. SEIDMAN, C. SUNSTEIN & M. TUSHNET, CONSTITUTIONAL LAW 1-113 (1986); L. TRIBE, AMERICAN CONSTITUTIONAL LAW 23-208 (2d ed. 1988).

review under the Equal Protection Clause of the fourteenth amendment and, specifically, on two sharply divergent tests for reviewing legislation. Our purpose here is to illustrate how courts should deal with unanswered empirical questions in areas where standards of judicial review have been elaborated. Methods of handling empirical uncertainty developed in the fourteenth amendment context can readily be exported to judicial review under other constitutional provisions.[66]

It is now a standard view that courts will invoke one of three tests to review state action under the Equal Protection Clause of the fourteenth amendment. Social and economic legislation normally is reviewed under a standard of rationality.[67] However, when legislation affects fundamental rights or invokes suspect classifications, it is strictly scrutinized.[68] And when legislation classifies on such bases as gender or legitimacy, it is subject to review under a standard more exacting than rationality but less exacting than strict scrutiny.[69] We frame our inquiry around the "rationality" and "strict scrutiny" standards since these sharply divergent approaches permit clear illustration of our proposals.[70]

1. THE RATIONALITY STANDARD

The modern rationality standard was articulated by the Supreme Court in *United States v. Carolene Products*:[71]

66. These areas certainly include the first amendment, the commerce clause and the eighth amendment. The practice criticized throughout this section (of using presumption and burden of proof as a response to unanswered empirical questions) is also common in these three areas. For the first amendment, *see, e.g.*, Organization for a Better Austin v. Keefe, 402 U.S. 415, 419 (1971) ("Any prior restraint on expression comes to this Court with a 'heavy presumption' against its constitutional validity"); the commerce clause, *see, e.g.*, Kassel v. Consol. Freightways Corp., 450 U.S. 662, 670 (1981) ("Those who would challenge such bona fide regulations [such as state truck regulations] must overcome a 'strong presumption of validity' "); and the eighth amendment, *see, e.g.*, Furman v. Georgia, 408 U.S. 238, 395 (1972) (Burger, C.J., dissenting) ("Escape from this empirical stalemate [that there is no convincing evidence that the death penalty does not deter] is sought by placing the burden of proof on the States.").

67. *See, e.g.*, Wilkinson, *The Supreme Court, The Equal Protection Clause, and the Three Faces of Constitutional Equality*, 61 VA. L. REV. 945 (1975). *See also infra* text accompanying notes 71-93.

68. *See infra* text accompanying notes 94-113.

69. *See* Mississippi Univ. for Women v. Hogan, 458 U.S. 718 (1982).

70. Indeed, many commentators argue that in practice the intermediate standard of review is "more rhetorical than real", *see, e.g.*, Perry, *Modern Equal Protection: A Conceptualization and Appraisal*, 79 COLUM. L. REV. 1023, 1055 (1979), and that gender is at least "functionally suspect," Karst, *The Supreme Court, 1976 Term—Forward: Equal Citizenship Under the Fourteenth Amendment*, 91 HARV. L. REV. 1, 54 (1977). *But see*, Craig v. Boren, 429 U.S. 190 (1976); Michael M. v. Superior Court of Sonoma County, 450 U.S. 464 (1981); Rostker v. Goldberg, 453 U.S. 57 (1981), all of which do suggest an independent content to the third test.

71. 304 U.S. 144 (1938).

> [R]egulatory legislation affecting ordinary commercial transactions is not to be pronounced unconstitutional unless in the light of the facts made known or generally assumed it is of such a character as to preclude the assumption that it rests on some rational basis.... [Our inquiry] must be restricted to the issue whether any state of facts either known or which could reasonably be assumed affords support for it.[72]

What the Court later referred to as "the presumption of constitutionality"[73] for legislation "implies that the party seeking to invalidate a law on constitutional grounds has the burden of proving the nonexistence of any facts necessary to sustain it and the existence of any facts necessary to strike it down."[74] *McGowan v. Maryland*[75] illustrates the deference to legislative assumptions (real or imagined) implied by the rationality standard. Appellants argued that Maryland's Sunday Closing Laws ("Blue Laws"), prohibiting the sale on Sunday of all merchandise, but excepting certain products, violated the Equal Protection Clause of the Fourteenth Amendment. The Court upheld the statute by deferring to the empirical assumptions made by the state legislature and finding that the appellants had offered no basis to conclude that these assumptions were irrational:

> It would seem that a legislature could reasonably find that the Sunday sale of the exempted commodities was necessary either for the health of the populace or for the enhancement of the recreational atmosphere of the day.... The record is barren of any indication that this apparently reasonable basis does not exist, that the statutory distinctions are invidious, that local tradition and custom might not rationally call for this legislative treatment.[76]

Two concepts, therefore, have been articulated as being central to judicial review under the standard of rationality: the "presumption" that the legislature acted rationally to pursue legitimate ends in enacting the statute, and the "burden of proof" to the contrary being placed on those challenging the statute.[77] We believe, however, that both "pre-

72. *Id.* at 152, 154.

73. Usery v. Turner Elkhorn Mining Co., 428 U.S. 1, 15 (1976).

74. P. BREST & S. LEVINSON, PROCESSES OF CONSTITUTIONAL DECISIONMAKING 1008 (1st ed. 1975).

75. 366 U.S. 420 (1961).

76. *Id.* at 426. *See also* Williamson v. Lee Optical, 348 U.S. 483, 488 (1954) ("It is enough that there is an evil at hand for correction, and that it might be thought that the particular legislative measure was a rational way to correct it.").

77. *See, e.g.*, Kadrmas v. Dickinson Pub. Schools, 487 U.S. 450, 462 (1988) ("Social and economic legislation like the statute at issue in this case, moreover, 'carries with it a presumption of rationality that can only be overcome by a clear showing of arbitrariness and

sumption" and "burden of proof" are inapposite extrapolations; they are concepts developed in the arena of social facts and cannot properly be applied to the realm occupied by social authority.

We have already explained why "burden of proof" is without clear meaning in the context of judicial law-making: "burden of proof" is a concept pertaining solely to social (or "adjudicative") facts.[78] It is to be met by presenting "evidence" to "prove" the proposition in question. Yet presenting "evidence," as Davis[79] and other commentators have recognized, is not a necessary or even a desirable means of addressing the empirical assumptions that underlie a legal rule. Since the allocation of the burden of proof is entirely dependent upon the area of substantive law in question, "burden of proof" is also an inapt mechanism for establishing substantive rules. The same can be said of "presumptions." A "presumption," as defined in the Federal Rules of Evidence, "imposes on the party against whom it is directed the burden of going forward with evidence to rebut or meet the presumption."[80] "Presumption," therefore, is likewise a concept whose meaning is inextricably linked to providing "evidence" to prove social ("adjudicative") facts, and not to demonstrating the rationality of empirical assumptions underlying a legal rule. It is a concept entirely controlled by the substantive law in question and, like "burden of proof," is devoted to the management of "facts" and not to the determination of legal policy.

Rather than employing the evidentiary concepts of case-specific social facts in judicial decisionmaking, we believe that concepts more appropriate to the "legislative" or "authoritative" nature of the inquiry should be adopted. Instead of stating that there is a "presumption of

irrationality' " (quoting Hodel v. Indiana, 452 U.S. 314, 331-32 (1981)); Alaska Packers Ass'n v. Indust. Accident Comm'n of California, 294 U.S. 532, 543 (1935) ("Indulging the presumption of constitutionality which attaches to every statute, we cannot say that this one, as applied, lacks a rational basis or involved any arbitrary or unreasonable exercise of state power"); School Bd. v. Louisiana State Bd. of Elementary & Secondary Educ., 830 F.2d 563, 569 (5th Cir. 1987) ("Applying the rational basis test . . . we conclude that the plaintiffs have failed to meet their burden of proving that the state's scheme violates their fourteenth amendment right to equal protection of the law"); Jackson Water Works, Inc. v. Pub. Utilities Comm'n, 793 F.2d 1090, 1094 (9th Cir. 1986) ("The moving party carries the burden of proving unconstitutionality under a rationality review because statutes are presumed to be constitutional"); Executive Town & Country Services, Inc. v. City of Atlanta, 789 F.2d 1523, 1528 (11th Cir. 1986) ("Town & Country has not satisfied its burden of proving that there is no possible legislative rationale for enacting these regulations. Any equal protection claim . . . must fall under this analysis"); Kollar v. City of Tucson, 319 F. Supp. 482, 483 (D. Ariz., 1970) ("The earliest test of state laws under the fourteenth amendment was the 'rational basis' doctrine, under which there was a presumption of constitutionality and under which state restrictions would survive if the reviewing court could conceive of a 'rational basis' for the classification.").

78. *See supra* text accompanying notes 37-41.

79. *See supra* note 6.

80. FED. R. EVID. 301.

constitutionality"[81] under the rationality standard, it would be more helpful to state that there was an "assumption of constitutionality."[82] That is, under the "rationality" standard, *courts normally will accept as plausible the empirical assumptions made by the legislature in enacting a statute.*[83] The challenger's burden is to demonstrate that these empirical assumptions are implausible. This is not a burden of "proof," however, since "proof" can be provided only by "evidence." Rather, the responsibility is one of "argument:"[84] under the rationality standard, *it is the challenger's responsibility to convince the court to reject as implausible the empirical assumptions made by the legislature in enacting a statute.* This responsibility is met by providing the court with empirical research—"social authority"—the results of which so contradict the assumptions made by the legislature that it would be implausible ("irrational") to maintain them.[85]

Casting the issue in terms of "social authority" clarifies for courts the process of determining whether the challenger's responsibility has been met. Elsewhere,[86] we have suggested criteria drawn from both law and social science that can provide guidance for courts in how to eval-

81. *See supra* notes 73-74 and accompanying text.

82. The terminology is from the original "rationality" case, *Carolene Products*, 304 U.S. at 153. (The Court's inquiry "must be restricted to the issue whether any state of facts either known or which could reasonably be *assumed* affords support for it." (Emphasis added)). *See also* Ashford & Risinger, *Presumptions, Assumptions, and Due Process in Criminal Cases: A Theoretical Overview*, 79 YALE L. J. 165, 173 (1969) ("[W]e shall call the device which imposes a burden of persuasion an *assumption*." (Emphasis in original)). The reason that this terminology is more helpful in the law-making context is that "presumption" is conducive to thinking inappropriately in a social (or adjudicative) fact paradigm, while "assumption" signals that one is no longer operating in this procedural mode.

83. *See* Perry, *supra* note 70, at 1068 n.232: "Because legislatures are generally more competent to resolve complex empirical questions than courts, the Supreme Court insists only that the empirical judgment implicit in the legislature's use of the classification—namely, that the classification will or might serve the governmental interest—be rational or plausible."

84. Just as "proof" is associated with "fact," "argument" is typically associated with "law." *See, e.g.*, Mitchell Energy Corp. v. Federal Energy Reg. Comm'n, 651 F.2d 414, 416 n.3 (1981) ("[E]ven if its argument on the law eventually prevails, [appellant] has yet to prove the facts it alleges"); Young v. Herman, 232 F. 361, 362 (1916) ("[Appellant] is entitled to be heard . . . in proofs as to the facts, and in argument as to the law"); see also United States v. Schwartz, 899 F.2d 243, 245 (3rd Cir. 1990) ("Yet Schwartz, confronted with an overwhelming problem on the facts, argues the law . . ."); Pittsburgh, C., C. & St. L. Ry. Co. v. Muncie & Portland Traction Co., 166 Ind. 466, 468, 77 N.E. 941, 942 (1906) ("[T]he purpose of a brief is to present to the court in concise form the points and questions in controversy and by fair *argument on the . . . law* of the case to assist the court in arriving at a just and proper conclusion" (emphasis added)).

85. We understand that the "legislative assumptions" discussed might, under present law, sometimes be supplied by the courts. Indeed our illustrative case, McGowan v. Maryland, 366 U.S. 420 (1938), may be such a case ("[I]t would seem that a legislature could reasonably find . . ."). *Id.* at 427-28. Ideally, the entire process of equal protection analysis would be facilitated by clear legislative statements of statutory premises. However, for present purposes, we accept this current condition and propose constructive changes within this parameter.

86. *See* Monahan & Walker, *Social Authority*, *supra* note 4, at 498-512.

uate empirical research. We suggested that courts ask whether the research has been tested by extensive peer review, whether valid methods were employed, whether the results generalize to the case at hand and whether there is a substantial line of pertinent studies.[87] Although these tests cannot be applied in a mechanical or quantitative way, they stand in sharp contrast to the vague "relevancy"[88] or "Frye"[89] rules used to evaluate social fact evidence and to the nonexistent criteria implied in the notion of "legislative fact."[90]

When courts consider a statute under the rationality standard and determine that the statute is based on empirical assumptions for which no adequate empirical support exists, the statute will normally be upheld.[91] Only when the challenger presents—or the court finds through its own efforts[92]—social authority sufficient to convince the court that the assumptions made by the legislature are implausible should the statute fail rationality review.[93] Just as the common law judge is permitted to proceed by plausible speculation in a case of first impression, courts initially accept as plausible the empirical assumptions of the legislature. By such deference, courts acknowledge the legislature's primacy as a lawmaking institution. An empirical challenge to this deference, we believe, should be treated much as a legal argument chal-

87. *Id.*

88. FED. R. EVID. 401-12. *See also* Saltzburg, *Frye and Alternatives*, 99 F.R.D. 208 (1983).

89. The test given for novel scientific evidence in Frye v. United States, 293 F. 1013, 1014 (1923) is as follows:

> Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from a well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs.

90. *See supra* text accompanying notes 43-46.

91. *Compare* Shuman, *Decisionmaking Under Conditions of Uncertainty*, 67 JUDICATURE 326, 328, 334 (1984):

> No empirical research may exist [to support an empirical assumption underlying legislation] or there may be substantial barriers to conducting competent empirical research on a particular question. This does not suggest that no societal decision should be reached on this question. It merely suggests that a conclusion based on an *empirical* assumption is not justifiable. Instead an approach to the decision which turns on the intrinsic worth of some principle should be substituted for an unverified assumption about human behavior. . . . If no research exists on the subject, I would find a conclusion based on an empirical assumption irrational as a matter of constitutional law. To reach an empirical conclusion requires empirical support. (Emphasis in original).

See supra text accompanying notes 62-63 for a limited critique of this position.

92. See Monahan & Walker, *Social Authority*, *supra* note 4, at 495-98.

93. On a statute "failing" rationality review, *see* Williams v. Vermont, 472 U.S. 14 (1985). *See also* Metro. Life Ins. Co. v. Ward, 470 U.S. 869 (1985); Allegheny Pittsburgh Coal Co. v. County Comm'n, 488 U.S. 336 (1989).

lenging legislation is treated. It should be evaluated by criteria designed to test law-like social authority—rather than by criteria for reviewing factual evidence.

2. THE STRICT SCRUTINY STANDARD

While the rationality standard of review under the Equal Protection Clause of the fourteenth amendment applies to most state action, the "strict scrutiny" standard ordinarily only applies in two instances—those involving classifications based on race or other "suspect classifications"[94] and those implicating "fundamental rights and liberties."[95] In both instances not only must the state's purpose in legislating be "compelling," but the means specified in the statute must be "necessary" to achieve this purpose.[96]

Shapiro v. Thompson[97] illustrates the lack of deference to legislative assumptions implied by the strict scrutiny standard. Connecticut, Pennsylvania and the District of Columbia enacted statutes denying welfare assistance to persons who had not resided within their jurisdictions for at least one year prior to applying for assistance, arguing that such a waiting period facilitated the planning of the welfare budget. The Court invalidated these statutes on equal protection grounds, finding that the jurisdiction had not offered a compelling justification for infringing upon the fundamental right to travel:

> The argument that the waiting-period requirement facilitates budget predictability is wholly unfounded. The records in all three cases are utterly devoid of evidence that either State or the District of Columbia in fact uses the one-year requirement as a means to predict the number of people who will require assistance in the budget year. None of the appellants takes a census of new residents or collects any other data that would reveal the number of newcomers in the State less than a year. . . . In these circumstances, there is simply no basis for the claim that the one-year waiting requirement serves the purpose of making the welfare budget more predictable.[98]

The same two concepts traditionally employed for judicial review under the rationality standard, "presumption" and "burden of proof," appear central to judicial review under the strict scrutiny standard as

94. *See, e.g.*, Loving v. Virginia, 388 U.S. 1 (1967); McLaughlin v. Florida, 379 U.S. 184 (1964).

95. Harper v. Virginia Board of Elections, 383 U.S. 663, 670 (1966).

96. *See* G. GUNTHER, CONSTITUTIONAL LAW 588 (11th ed. 1985).

97. 394 U.S. 618 (1969).

98. *Id.* at 634-35 (emphasis in original) (citations omitted).

well.[99] Under the strict scrutiny standard, however, the presumption and burden are shifted. The presumption here is of unconstitutionality and the burden is on the state to prove otherwise.[100] In addition, the strict scrutiny standard changes the nature of what is to be proven. The state must prove not merely that the ends it sought were "legitimate"[101] and the means it chose were "rationally related"[102] to achieving those ends—that is, that the legislature had a "plausible"[103] justification for the statute. Rather, the state must prove that the ends it sought were "compelling"[104] and the means it chose were "necessary"[105] to their achievement—that is, that the legislature had a "valid" justification for the statute.

For reasons already given,[106] we believe that both "presumption" and "burden of proof" are inappropriate extrapolations of social facts to the realm properly occupied by social authority. As with the rationality basis test, clarity would be brought to the strict scrutiny standard by adopting concepts more appropriate to the "legislative" or "authoritative" nature of the inquiry. Instead of stating that there is a "presumption of unconstitutionality"[107] under the strict scrutiny standard, it would be more helpful to state that there is an "assumption of unconstitutionality."[108] That is, under the "strict scrutiny" standard, *courts normally will reject as invalid the empirical assumptions made by the legislature in enacting a statute.* The "burden" is on the state to demonstrate that these assumptions are valid.[109] As in the rationality

99. *See supra* note 77. *See also, e.g.*, Attorney Gen. of N.Y. v. Soto-Lopez, 476 U.S. 898, 911 (1986) ("The State has not met its heavy burden of proving that it has selected a means of pursuing a compelling state interest which does not impinge unnecessarily on constitutionally protected interests. Consequently, we conclude that New York's veterans' preference violates . . . constitutionally protected rights to migrate and to equal protection of the law"); Kramer v. Union Free School District, 395 U.S. 621, 627-28 (1969) ("[W]hen we are reviewing statutes which deny some residents the right to vote, the general presumption of constitutionality afforded state statutes and the traditional approval given state classifications if the Court can conceive of a 'rational basis' for the distinctions made are not applicable"); Hughes v. Lipscher, 720 F. Supp. 454, 458 (D.N.J. 1989) ("Thus, a regulation is presumptively invalid if it infringes on a fundamental right or disadvantages a suspect class"); Riddick v. School Bd. of Norfolk, 627 F. Supp. 814, 823 (E.D. Va. 1984) ("Plaintiffs argue that the School Board bears the burden of proving that the Proposed Plan can survive strict scrutiny under the Equal Protection Clause because the Board allegedly employed racial criteria in designing the Proposed Plan").

100. *See* J. NOWAK, R. ROTUNDA, & J. YOUNG, CONSTITUTIONAL LAW 530 (3d ed. 1986).

101. *See* G. GUNTHER, *supra* note 96, at 588.

102. Eisenstadt v. Baird, 405 U.S. 438 (1972).

103. *See supra* text accompanying notes 83-85.

104. *See, e.g.*, Shapiro v. Thompson, 394 U.S. 618, 634 (1969).

105. *Id.*

106. *See supra* text accompanying notes 37-46.

107. *See supra* note 99.

108. *Supra note* 82.

109. J. NOWAK, R. ROTUNDA, & J. YOUNG, *supra note* 100, at 530. Certainly, much

standard, this is not a burden of "proof," since "proof" can be provided only by "evidence." Rather, the responsibility is again one of "argument":[110] *it is the state's responsibility to convince the court to accept as valid the empirical assumptions made by the legislature in enacting a statute.* This responsibility is met by providing the court with empirical research—"social authority"—the results of which support the assumptions made by the legislature.[111] Thus, strict scrutiny of a statute based on empirical assumptions for which no adequate empirical support exists should result in invalidation of the statute. Only when the state presents—or the court finds through its own research[112]—sufficient social authority to convince the court that the assumptions made by the legislature are valid should a statute pass the strict scrutiny test. For statutes that impinge on fundamental interests or that classify on suspect bases, the respect ordinarily accorded by courts to the empirical assumptions of the legislature is much less. These special cases constitute an exception to the typical judicial deference to the legislature's primacy as a lawmaking institution. As with rationality review,[113] however, casting the issue in terms of law-like "social authority" rather than in terms of factual evidence clarifies for courts the process of obtaining and evaluating research, and therefore, assists substantially in determining whether the state's responsibility has been met.

IV. Social Frameworks

Many of the empirical questions raised in law fall easily into either the case-specific social fact or the law-making social authority categories. In recent years, however, courts have begun to address empirical questions that cannot be classified according to this simple scheme. There are strong indications that a new, third type of empirical question is being asked. Illustrations can be found in cases concerning the two areas of sexual victimization and eyewitness identification.

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more than "validity" will be involved in judicial determination regarding suspect classification schemes, and courts will consider moral and social values in deciding such a case. *See* Bickle, *The Original Understanding and the Segregation Decision*, 69 HARV. L. REV. 1, 64-65 (1955); R. DWORKIN, LAW'S EMPIRE 359-69, 387-89 (1986). These moral and social considerations will likely play a smaller role in deciding cases involving "fundamental rights" than in deciding cases involving "suspect classifications," and hence resolution of scientific "validity" questions will be more prominent in the former cases. Thus our proposals will find their most prominent illustration in the fundamental rights category.

110. *See supra* note 84.

111. *See, e.g.*, Marston v. Lewis, 410 U.S. 679 (1973) (research used to show that fifty day residency and voter registration requirements were necessary to prepare accurate voter lists). Here, again, *see supra* note 109, we note that cases involving suspect classification will not be decided on a purely empirical basis and will always require judicial attention to moral and social values.

112. *See supra* note 92.

113. *See supra* note 84 and accompanying text.

In *State v. Chapple*,[114] the only evidence that the defendant had committed murder was the testimony of two eyewitnesses. To counter this testimony, the defense offered as an expert witness a research psychologist. In a proffer of her testimony, the social scientist described published studies on factors such as the speed with which memory decays over time, the effects of stress on eyewitness accuracy and the relationship between the confidence of a witness and the accuracy of identification. The trial court excluded the expert and the defendant was convicted. The Arizona Supreme Court, however, overturned the conviction due to the expert's exclusion and ordered a new trial, stating that "there were a number of substantive issues of ultimate fact on which the expert's testimony would have been of significant assistance."[115]

The defendant in *State v. Myers*[116] was convicted of criminal sexual conduct involving a child. Over a defense objection, the prosecutor at trial had been permitted to present a social science expert witness to describe research on the behavioral traits typically observed in abused children, traits that were also observed in the child complainant. The Minnesota Supreme Court upheld the conviction on appeal, however, stating that "background data providing a relevant insight into the puzzling aspects of the child's conduct and demeanor which the jury could not otherwise bring to its evaluation of her credibility is helpful and appropriate. . . ."[117]

In neither of these two cases was social science being used as it was in the *United States v. Leon*[118] exclusionary rule case, as social authority or legislative fact to change a rule of law. The legal rules affecting eyewitness testimony and child abuse were accepted by the parties presenting the research. Yet neither was social science being used as it was in the *Processed Plastic*[119] and *Squirt*[120] trademark cases to provide social or adjudicative fact. In those cases, the research had focused on products made or sold by the immediate parties to the litigation. In both *Chapple* and *Myers*, however, the parties to the case were not involved in the research at all. The experts relied on "off the rack" studies published before the respective crimes took place.

The way that social science was used in *Chapple* and *Myers* does have some of the defining characteristics of both social authority and social fact, however. In each case, the research had the *generality of scope* characteristic of social authority. As the studies in *Leon* had

114. 135 Ariz. 281, 660 P.2d 1208 (1983).
115. *Id.* at 297, 660 P.2d at 1224.
116. 359 N.W.2d 604 (Minn. 1984).
117. *Id.* at 610.
118. 468 U.S. 897 (1984).
119. *Processed Plastic*, 675 F.2d 852 (1982).
120. *Squirt*, 628 F.2d at 1086.

focused on the "collective"[121] costs and benefits of changing the exclusionary rule, the research in *Chapple* focused on "general factors"[122] affecting all eyewitnesses, and the research in *Myers* concerned "general characteristics" that were "typically observed"[123] in groups of abused children. Likewise, in each case the research had the *specificity of application* characteristic of social fact. As the studies in *Processed Plastic* and *Squirt* were introduced only to determine whether consumers were confused between two given products, so the research in *Chapple* was offered solely to challenge the testimony of two eyewitnesses to a specific murder, and the research in *Myers* was introduced solely to show that the named complainant was, in fact, abused.

The research used in *Chapple*, *Myers* and similar cases is thus neither wholly social authority nor wholly social fact, but has essential elements of each classification. We have proposed a new category, which we term "social framework," to denote "the use of general conclusions from social science research in determining factual issues in a specific case."[124] Our proposal envisions a two-stage set of procedures for judicial management of the framework use of social science in court. First, the generality that social frameworks share with research used as social authority suggests analogous procedures for obtaining, evaluating, and establishing social frameworks: obtain the research either in briefs or through the court's own investigation, evaluate it as legal precedent is evaluated, and have one court's conclusion about a social framework affect later courts just as one court's conclusion about a matter of law affects later courts.[125] If the evaluating judge concludes that the research supports the use of a social framework, the final procedural implication of the social authority view emerges: the conclusions derived from the research should be communicated to the jury in the same manner as the court's evaluation of law is communicated to the jury, by instruction. The jury thus applies the social framework to the facts of the case, just as the jury applies the law given by the court to the facts.[126]

This movement to jury instructions and away from the current practice of communicating empirical information via expert testimony

121. *See* Alschuler, *"Close Enough for Government Work": The Exclusionary Rule After Leon*, 1984 SUP. CT. REV. 309, 350.

122. *Chapple*, 135 Ariz. at 292, 660 P.2d at 1219.

123. *Myers*, 359 N.W.2d at 608.

124. Walker & Monahan, *Social Frameworks*, *supra* note 4, at 570 (emphasis omitted). *See also* Mosteller, *Legal Doctrines Governing the Admissability of Expert Testimony Concerning Social Framework Evidence*, 52 LAW AND CONTEMP. PROBS. 85 (1989); Vidmar & Schuller, *Juries and Expert Evidence: Social Framework Testimony*, 52 LAW AND CONTEMP. PROBS. 133 (1989). For a judicial discussion of this proposal, *see* State v. Alger, 115 Idaho 42, 764 P.2d 119 (1988).

125. *Id.* at 588. *See supra* note 49.

126. *Id.* at 592-98.

would enhance the efficiency of the trial process. Under the present approach, the same testimony about the same research must be heard in case after case whenever a framework for a given type of factual determination is employed. Also, our proposal would make empirical information more generally and economically available to criminal defendants and civil disputants. The pool of expert witnesses is now limited to a small group of scholars in each topical area, and those scholars must be transported and paid to repeat their testimony in each new case. Access to expert testimony is therefore effectively precluded in a large number of cases where the use of a framework might be decisive.[127]

The question here is what courts should do when a party requests "social framework" instructions but presents no social science research, or only inadequate social science research, to support the request. The answer is to be found by turning to the standard for framing jury instructions. That standard is clear: courts must give only instructions that state the law "correctly" or "accurately."[128] As was the case with judicial review of state legislation, general principles for obtaining and evaluating research can be employed: correctness, accuracy, or what a social scientist would term "validity"[129]—rather than the "relevancy" or "Frye" rules[130] used to test scientific evidence of social facts. If the research comprising the framework is valid in the court's estimation,[131] and relevant to the facts of the case, the instruction should be given.[132] If the research is invalid, or nonexistent, it would follow from the law regarding jury instructions that no instruction would be forthcoming.[133]

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127. *Id.* at 583-84.

128. Thorwegan v. King, 111 U.S. 549, 554 (1884) (Defendant entitled to an instruction where request is "correct statement of the law.") *See also* E. DEVITT & C. BLACKMAR, 1 FEDERAL JURY PRACTICE AND INSTRUCTIONS: CIVIL AND CRIMINAL 206 (3d ed. 1977) ("Requested instructions must be accurate or the court is under no obligation to give them"); R. GIVENS, 2 MANUAL OF FEDERAL PRACTICE 104 (3d ed. 1989) ("Refusal of instructions presenting a party's theory of the case constitutes reversible error only if the offered instructions state the law correctly . . .").

129. The techniques we propose here are the same as those we have proposed for evaluating social authority. They are summarized above in note 49 and referred to in the text which follows note 86. A complete description of our proposal can be found in Monahan & Walker, *Social Authority*, note 4 at 498-512.

130. *See supra* note 89.

131. *See* Walker & Monahan, *Social Frameworks*, *supra* note 4, at 589-91.

132. *See id.* at 592-98 for a discussion of the form that social framework instructions should take.

133. For example, in United States v. Hessling, 845 F.2d 617, 620-21 (6th Cir. 1988), the court rejected the defendant's proposed social framework instruction because the empirical propositions stated in the instruction were not supported by research. The issue concerned whether high-dosage cocaine users tended to be unreliable eyewitnesses:

> The findings of social science research can provide an invaluable frame of reference in deciding factual issues involved in a specific case. . . . Furthermore, such frames of reference can be effectively conveyed to a jury through carefully-worded instruc-

An instruction would be unnecessary to decide the case: lacking valid research, a jury is as well equipped as a judge to speculate on the effect of social context in determining the facts at issue in the case.

V. CONCLUSIONS

What should a court do when it recognizes that a case rests in significant part upon an empirical proposition, yet no credible data exist to support or refute that proposition? The answers to that question depend upon the type of empirical proposition involved in the case. When the proposition is an assertion about a "social fact," by definition one of relevance only to the parties in litigation, analysis proceeds first by inquiring into which party carries the burden of proving the contested fact, and then examining the appropriate type of evidence for meeting that burden. Such analysis often places the party making unsupported empirical assertions at a significant disadvantage. However, the assignment of the burden and the standards for meeting that burden are properly determined by the substantive law in question and cannot be generally specified. Evaluation techniques given in the Federal Rules of Evidence and similar state codes as appropriate for all forms of case-specific evidence should be used.

When the empirical proposition is in the nature of an assertion about the "social authority" underlying a rule of law applicable to many parties, the course of action courts should take depends upon whether the rule has been created in the common law or is the product of legislation. In the former case, unsupported empirical assertions, if otherwise plausible, can be treated like precedential authority and can form the basis of a legal rule. Candid judicial speculation on what the results of empirical research would be has the advantage of leaving the common law rule subject to revision in light of future scientific developments, and of actually stimulating those developments.

In the case of judicial review of state action under the equal protection clause of the fourteenth amendment, unsupported empirical propositions are dealt with differently depending on whether the "rationality" or "strict scrutiny" standard is applied. Under the "rationality" standard, courts normally will accept as plausible the empirical assumptions made by the legislature in enacting a statute, and it is the

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tions.... [However,] the proposed instruction would not have provided the jury with a more useful frame of reference.... A more useful instruction would have informed the jury whether social science research has shown high-dosage narcotic users to be less reliable witnesses and, if so, how much less reliable high-dosage narcotic users are as a group than are other witnesses. We recognize, of course, that this type of more useful instruction could not have been given in this case because [an expert] had not conducted any study comparing the memory capabilities of high-dosage cocaine users with the memory capabilities of other persons.

challenger's responsibility to convince the court to reject those empirical assumptions as implausible. If the challenger presents no valid social authority to render implausible the state's assumptions, the legislation is upheld. Under the "strict scrutiny" standard, in contrast, courts normally will reject as invalid the empirical assumptions made by the legislature in enacting a statute, and it is the state's responsibility to convince the court to accept those assumptions as valid. If the state presents no valid social authority to support its assumptions, the legislation fails. The use of such a conceptual scheme for dealing with both judge-made rules and the products of legislation—in contrast to the invocation of "presumptions" and "burdens of proof" —makes clear that one is dealing with the creation or modification of generally-applicable law, rather than with the determination of facts specific to a case.

Finally, when the empirical proposition is in the nature of a "social framework" in which general conclusions from social science research are used to determine factual issues in a specific case, the law of jury instructions controls. If no valid research exists, there is nothing on which to instruct the jury. This follows from the proposition that only correct statements of law may be included in instructions. Failing adequate social research to support a framework, there is no "authority" and thus nothing to report to the jury. As with judicial review, techniques for assessing social authority, and not tests of evidence, should be used to evaluate research proposed for incorporation into framework instructions.

In essence, we propose that courts respond to empirical questions without empirical answers by determining the precise legal context of the question, and then proceeding as that context dictates. When social facts are at issue, for example, evidentiary concepts govern, and the identification and application of the burden of proof and type of evidence requirements will produce the outcomes anticipated by the body of substantive law in question. However, when courts make law or instruct a jury in the law, we propose that a set of concepts derived from the notion of "social authority" must be employed. The manner in which courts invoke requirements for what we have termed "plausible" or "valid" empirical assumptions generate what turns out to be a surprisingly rich variety of judicial "answers" to empirical questions not yet addressed by social scientists.