

ESSAY

CONTEXTUAL EVIDENCE OF GENDER DISCRIMINATION: THE ASCENDANCE OF “SOCIAL FRAMEWORKS”

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IN *Dukes v. Wal-Mart, Inc.*, the U.S. Court of Appeals for the Ninth Circuit upheld the certification of a gender discrimination class action seeking over \$1.5 billion on behalf of more than 1.5 million current and former female employees of Wal-Mart’s 3,400 stores across the United States.¹ A crucial piece of the evidence supporting class certification came from a sociologist who performed what he called a “social framework analysis” of Wal-Mart. Dr. William Bielby evaluated Wal-Mart’s employment policies and practices “against what social science research shows to be factors that create and sustain bias and those that minimize bias,”² and concluded that these policies and practices “contribute[d] to disparities between men and women in their compensation and career trajectories at the company.”³ Dr. Bielby’s analysis of Wal-Mart’s systems for checking gender bias figured prominently in the district court’s decision to certify the largest employment discrimination

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¹ *Dukes v. Wal-Mart, Inc.*, 509 F.3d 1168 (9th Cir. 2007). Goldman Sachs estimated potential compensatory damages in the range of \$1.5 to \$3.5 billion and potential punitive damages in the range of \$13.5 to \$31.5 billion. Steve Painter, Judges Modify Sex-Bias Decision, *Ark. Democrat-Gazette*, Dec. 12, 2007, at 1D.

² Declaration of William T. Bielby, Ph.D. in Support of Plaintiffs’ Motion for Class Certification at 5, *Dukes v. Wal-Mart Stores, Inc.*, 222 F.R.D. 137 (N.D. Cal. 2004) (No. C-01-2252 MJJ) [hereinafter Bielby Declaration].

³ *Id.* at 41.

class in history and the appellate court's decision to uphold this certification.⁴

As authority for the propriety of social framework analysis, Dr. Bielby relied on the work of the first two authors of this Essay, John Monahan and Laurens Walker.⁵ We had previously introduced the concept of "social frameworks" to refer to "general [social science] research results . . . used to construct a frame of reference or background context for deciding factual issues crucial to the resolution of a specific case."⁶ At the time of its introduction, the social frameworks concept described a novel use of social science evidence as compared to the more common uses to establish legislative facts, such as the effects of racial segregation on educational achievement, or to adjudicate specific disputes within a case, such as whether consumers are confused between two products, one of which is trademarked.⁷ Today, social frameworks have become a common and important part of many cases, particularly employment discrimination class actions. Increasingly, discrimination suits involve social science evidence on stereotyping and

⁴ See *Dukes*, 509 F.3d at 1178–80; *Dukes v. Wal-Mart Stores, Inc.*, 222 F.R.D. 137, 151–54 (N.D. Cal. 2004). On the historical importance of *Dukes*, see Roger Parloff, *The War Over Unconscious Bias*, *Fortune*, Oct. 15, 2007, at 90. In upholding class certification in *Dukes*, the Ninth Circuit also addressed the issue of the manageability of such a large class. Citing *Hilao v. Estate of Marcos*, 103 F.3d 767 (9th Cir. 1996), a class action that relied on statistical sampling to determine damages, the Court stated:

Because we see no reason why a similar procedure to that used in *Hilao* could not be employed in this case, we conclude that there exists at least one method of managing this large class action that, albeit somewhat imperfect, nonetheless protects the due process rights of all involved parties.

Dukes, 509 F.3d at 1192–93 (footnotes omitted). For an endorsement of the use of statistical sampling in mass tort cases, see Laurens Walker & John Monahan, *Sampling Evidence at the Crossroads*, 80 S. Cal. L. Rev. 969 (2007) [hereinafter Walker & Monahan, *Sampling Evidence*].

⁵ Dr. Bielby's sole support for "social framework analysis" was a chapter on social frameworks in John Monahan & Laurens Walker, *Social Science in Law: Cases and Materials* 355–555 (David L. Shapiro et al., eds, Foundation Press 4th ed. 1998) [hereinafter Monahan & Walker, *Social Science in Law*, 4th ed.]. See Bielby Declaration, *supra* note 2, at 5.

⁶ Laurens Walker & John Monahan, *Social Frameworks: A New Use of Social Science in Law*, 73 Va. L. Rev. 559, 559 (1987) [hereinafter Walker & Monahan, *Social Frameworks*].

⁷ See *id.* at 561–63 (describing the "strong indications that a new, third use of social science in law [was] emerging"). We refer to the use of social science for legislative purposes as "social authority" and for adjudicative purposes as "social fact." See *infra* Part I.

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prejudice, with experts testifying about this general research to provide context for the interpretation of case-specific facts or using this research to perform the kind of “social framework analysis” that Dr. Bielby performed in *Dukes*.⁸

The ascendance of social frameworks in the context of landmark civil rights litigation provides occasion to revisit the substance and procedures associated with that concept.⁹ Since they were first identified, social frameworks have received considerable attention from courts and commentators and have been used in a variety of cases in a variety of ways. In this Essay, we will review these developments and recast the procedures we originally proposed for apprising juries of general research results to assist in resolving the specific cases before them. We will then apply these updated procedures to expert testimony in *Dukes* that purports to be grounded in “social framework analysis.”¹⁰

⁸ See Barbara A. Gutek & Margaret S. Stockdale, Sex Discrimination in Employment, *in* *Employment Discrimination Litigation: Behavioral, Quantitative, and Legal Perspectives* 229, 244–46 (Frank J. Landy ed., 2005) (discussing social framework testimony in sex discrimination cases); Melissa Hart, Learning from Wal-Mart, 10 *Emp. Rts. & Emp. Pol’y J.* 355, 373–74 (2006) (“In *Dukes*, like other similar litigation, the plaintiffs have relied significantly on evidence from social science experts demonstrating the existence of gender stereotyping in society at large. Having established the prevalence of that stereotyping and the harms that flow from it in the context of workplace decisions, the plaintiffs identify employer policies that allow that stereotyping to intrude into the workplace.”) (footnotes omitted).

⁹ *Dukes* serves as a landmark not only because of the sheer size of the class and scope of the claims, but also because numerous other major companies have been subjected to similar class actions, with social framework analysis playing a key role in these cases. See Parloff, *supra* note 4, at 94 (“[*Dukes*] is no aberration; it’s an epitome. It shares a common skeletal structure with almost every employment discrimination class action today and thus opens a telling window on a looming litigation threat to corporate America.”).

¹⁰ We focus on Dr. Bielby’s “social framework analysis” in *Dukes* because of the case’s importance and because of Dr. Bielby’s status as the leading practitioner of “social framework analysis” in employment discrimination cases. In addition to *Dukes*, Dr. Bielby has himself testified in over 50 other cases, including employment class actions against Cargill, Home Depot, and Morgan Stanley. See Justin Scheck, Expert Witness Helps Launch Employment Law Industry, *The Recorder*, Oct. 28, 2004, at 1, available at <http://www.law.com/jsp/PubArticle.jsp?id=900005417471>. Other experts are now providing similar “social framework analyses” in employment class actions. See, e.g., Declaration of Barbara F. Reskin at 44, *Ellis v. Costco Wholesale Corp.*, 240 F.R.D. 627 (N.D. Cal. 2007) (No. C-04-3341 MHP) (“Discretionary and subjective elements of Costco’s personnel system combined with limited oversight, the belief that Costco’s culture will prevent discrimination, and the lack of standardized personnel practices that are known to check cognitive errors associated with

In Part I, we will review our original conception of social frameworks and our rationale for the procedures we advocated for obtaining, evaluating, and communicating social framework information. We will then survey themes in the reactions of courts and commentators to these proposals. In Part II, we will reconsider the substantive and procedural aspects of social frameworks in light of this extensive judicial and academic critique. We maintain our original conviction that “general” social science research of high scientific validity can provide a valuable context for deciding case-specific factual issues. But we will modify our original proposal for communicating relevant findings of social science research via jury instruction; now, we endorse allowing this communication to occur via expert testimony, which is consistent with the suggestions of commentators and almost uniform judicial practice. In addition, we will address the proper limits on the communication of social framework evidence via expert testimony. We focus on the practice of experts to “link” the findings of general social science research to the facts of specific cases. Based on the Federal Rules of Evidence and the constitutional division of labor between the expert and the jury, we will conclude that general research findings cannot be linked by an expert witness to the facts of a specific case. If linkages from general research findings to a specific case are to be made, those linkages must be recognized as arguments to be made by the attorneys, rather than evidentiary proof that can be offered by expert witnesses.

sex stereotyping and ingroup favoritism constrain women in their opportunity to become managers at Costco relative to those of men.”); *id.* at 5 n.1 (“In litigation, this method of analysis is known as ‘social framework analysis.’”) (citing Monahan & Walker, *Social Science in Law*, 4th ed., *supra* note 5); Expert Report—Eugene Borgida at 3–4, *Beck v. Boeing Co.*, 2004 WL 5495914 (W.D. Wash. Mar. 15, 2004) (No. 2:00-cv-00301-MJP) (stating that “the social scientific research literature on gender stereotyping and prejudice plays an important explanatory role in understanding how gender stereotypes affect pay and promotion and overtime practices at The Boeing Company” and making linkages between this general research and the specific conditions at Boeing); *id.* at 5 (“This opinion reflects the application of a *social framework analysis*.”). Dr. Bielby’s template for analyzing cases is now available outside of court documents, as Dr. Bielby published a slightly edited version of his expert report from the *Dukes* case. William T. Bielby, *Applying Social Research on Stereotyping and Cognitive Bias to Employment Discrimination Litigation: The Case of Allegations of Systematic Gender Bias at Wal-Mart Stores*, in *Handbook of Employment Discrimination Research* 395 (Laura Beth Nielsen & Robert L. Nelson eds., 2005).

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Finally, in Part III, we will illustrate our endorsement of communicating social frameworks via the testimony of expert witnesses—and of the limitations on such testimony—by application to *Dukes*. We find that the “social framework analysis” accepted by the district court and the Ninth Circuit in *Dukes*, in which the expert witness explicitly linked general research findings on gender discrimination to specific factual conclusions about Wal-Mart in particular, exceeded the limitations on expert testimony established by the Federal Rules of Evidence and by both the original and revised proposal of what constitutes “social framework” evidence.¹¹ We will thus offer a new template for social framework evidence in employment discrimination cases, one that endorses the use of social scientific evidence to provide a context for evaluating discrimination claims, but that insists on respecting the limits on the conclusions drawn from this social scientific evidence by expert witnesses testifying in court.

¹¹ Furthermore, because social framework evidence involves general social science research applicable to a wide range of cases, we believe it appropriate for appellate courts to engage in their own review of this evidence and its reliability, to reconcile inconsistent applications of the research, and to impose standards that encourage the use of reliable methods and fidelity to the underlying research. Cf. Michael J. Saks & David L. Faigman, *Expert Evidence After Daubert*, 1 *Ann. Rev. L. & Soc. Sci.* 105, 127 (2005) (“[C]ourts should require parties to remain within the bounds of the knowledge they have, forbidding wishful exaggerations, and requiring statements of the limits of what is known, whether those statements are informed by data showing error rates or by the absence of data on error rates.”). We recognize that, after *General Electric Co. v. Joiner*, 522 U.S. 136, 142–43 (1997), appellate courts are to defer to trial courts’ *Daubert* rulings. This rule respecting trial court judgments makes considerable sense in the context of expert testimony likely to have little direct import for other cases, but we believe that appellate courts should have greater authority to regulate the uses of social framework evidence across cases. See 1 David L. Faigman et al., *Modern Scientific Evidence: The Law and Science of Expert Testimony* 95–96 (2006) (“One of the most coherent explanations of whether a trial court ruling is reviewed on a deferential or a plenary basis is whether the matter being decided is specific to the case at bar or whether it has trans-case implications. Thus . . . matters of law, which by definition are trans-case, are reviewed de novo. . . . Some facts have a trans-case nature. Some of the ‘facts’ of science fall into this category, and it may make sense to decide those as matters of law.” (citations omitted)).

I. "SOCIAL FRAMEWORK": AN INTELLECTUAL HISTORY

A. *The Original Proposal of "Social Framework"*

We have referred to "social framework" as the "third"¹² use of social science in law. Before addressing social framework, we briefly consider the first two uses of social science for legal purposes—what we have termed "social authority"¹³ and "social facts."¹⁴

1. *"Social Authority": Using Science to Make Law*

Kenneth Culp Davis, in a seminal article published in 1942, proposed the term "legislative facts" for facts that were used by courts to help decide broad questions of law or policy that affect many cases.¹⁵ Legislative facts were to be distinguished from "adjudicative facts"—facts that were used to decide questions of interest only to the specific parties to a lawsuit, such as whether a particular traffic light was red or green when a party drove through an intersection.¹⁶

Davis's position was that "[t]he rules of evidence for finding facts which form the basis for creation of law and determination of policy should differ from the rules for finding facts which concern only the parties to a particular case."¹⁷ Judicial acceptance of social science research as a form of legislative fact was most famously embodied in *Brown v. Board of Education*.¹⁸ In the decades since

¹² Walker & Monahan, *Social Frameworks*, supra note 6, at 559, 570.

¹³ John Monahan & Laurens Walker, *Social Authority: Obtaining, Evaluating, and Establishing Social Science in Law*, 134 U. Pa. L. Rev. 477, 478 (1986) [hereinafter Monahan & Walker, *Social Authority*].

¹⁴ Laurens Walker & John Monahan, *Social Facts: Scientific Methodology as Legal Precedent*, 76 Cal. L. Rev. 877, 881–82 & n.26 (1988) [hereinafter Walker & Monahan, *Social Facts*].

¹⁵ Davis defined "legislative facts" as follows: "When 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." Kenneth Culp Davis, *An Approach to Problems of Evidence in the Administrative Process*, 55 Harv. L. Rev. 364, 402 (1942) [hereinafter Davis, *An Approach to Problems of Evidence*].

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ 347 U.S. 483 (1954). In that case, the Supreme Court cited the published research of numerous social scientists to support its empirical assertion that the segregation of

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Brown, social science research has frequently been invoked by courts to demonstrate the validity of empirical assumptions made in the process of modifying existing law or creating new law.¹⁹

Criticism of using social science to establish legislative facts has focused on three topics: (1) how should social science research used to create or modify law be *obtained*; (2) once obtained, how should it be *evaluated*; and (3) once evaluated, how should a court's conclusions about research be *established* so as to affect subsequent courts that address the same empirical issue.²⁰ On the first issue, the acknowledgement of the Advisory Committee to the Federal Rules of Evidence that there was "[n]o rule"²¹ that addressed legislative facts has been taken by many to illustrate the "total failure" of the

public schools instills in an African American child "[a] sense of inferiority [that] affects the motivation of a child to learn." *Id.* at 494 & n.11.

¹⁹ For an overview of case law in which social science has been used to make law, see generally John Monahan & Laurens Walker, *Social Science in Law: Cases and Materials* 185–382 (6th ed. 2006) [hereinafter Monahan & Walker, *Social Science in Law*, 6th ed.]. The distinction between adjudicative and legislative facts "has been widely accepted in the federal appellate courts." *Broz v. Schweiker*, 677 F.2d 1351, 1357 (11th Cir. 1982). The Supreme Court has invoked these terms on numerous occasions. E.g., *Lockhart v. McCree*, 476 U.S. 162, 168 n.3 (1986); *Concerned Citizens of S. Ohio, Inc. v. Pine Creek Conservancy Dist.*, 429 U.S. 651, 657 (1977). In *Roper v. Simmons*, 543 U.S. 551 (2005), for example, the Supreme Court considered the question of whether the Eighth and Fourteenth Amendments permitted the execution of offenders who were under the age of eighteen at the time they committed a capital crime. The Court held that the Constitution prohibited such executions. In arriving at this conclusion, the Court noted that "as the scientific and sociological studies respondent and his *amici* cite tend to confirm, '[a] lack of maturity and an underdeveloped sense of responsibility are found in youth more often than in adults and are more understandable among the young. These qualities often result in impetuous and ill-considered actions and decisions.'" *Id.* at 569 (citation omitted). Numerous social science studies were brought to bear on this and other conclusions reached by the Court regarding empirically-demonstrated developmental differences between adolescents and adults. *Id.* at 569–75.

²⁰ Monahan & Walker, *Social Authority*, *supra* note 13, at 495.

²¹ Fed. R. Evid. 201(a) advisory committee's note. While providing judicial notice for adjudicative facts, the Federal Rules of Evidence do not provide a rule for Davis's concept of legislative fact. Rather, the Advisory Committee that wrote the Rules stated that it could construct "[n]o rule" to address how courts should deal with legislative facts. It appears from the Committee's commentary to the Rules that legislative facts can be (a) presented by the parties in briefs on appeal, (b) presented by the parties at trial by the testimony of expert witnesses, (c) found by the court through *sua sponte* library research, or (d) obtained by an appellate court remanding a case back to the trial court for the taking of evidence. See *id.*

Rules to provide guidance to courts regarding how to obtain social science research for the purpose of creating or modifying law.²²

After social science research has been obtained (the exact procedure for which is left unspecified by the Federal Rules of Evidence), the court must evaluate it. Social science research varies greatly in quality, and the risk of basing a legal rule on flawed research is significant. Yet the concept of legislative fact does not address this issue at all. Likewise, if one court draws conclusions from social science research about an empirical assumption underlying a legal rule, the concept of legislative fact gives no guidance to the next judge who confronts the same empirical question. It is difficult, therefore, to gainsay the conclusion of a leading text on evidence that “a viable formulation of rules . . . with regard to legislative facts has not proved feasible.”²³ Finally, after social science research has been obtained and evaluated, appellate courts’ evaluation of social science research should affect lower courts to the same extent that appellate courts’ evaluation of case precedent affects lower courts.

In our original article on social authority, we argued that improvements in the manner that courts use social science information to create rules of law were possible only by abandoning the notion of legislative fact and developing a new concept that would fundamentally alter the way in which courts view social science materials.²⁴ As an alternative to legislative fact, we proposed “social authority” as an organizing principle for courts’ use of social science to create or modify a rule of law.²⁵ Under this rubric, courts would treat social science research relevant to creating or modifying a rule of law as if it were a source of “authority” rather than a source of “facts.” More specifically, we proposed that courts treat social science research much as they treat legal precedent under the common law.²⁶ A number of coherent procedures for obtaining,

²² Stephen A. Saltzburg & Kenneth R. Redden, *Federal Rules of Evidence Manual* 45 (3d ed. 1982).

²³ John W. Strong et al., *McCormick on Evidence* 503 (5th ed. 1999); see also Monahan & Walker, *Social Authority*, *supra* note 13, at 488.

²⁴ Monahan & Walker, *Social Authority*, *supra* note 13, at 488-89.

²⁵ *Id.* at 488.

²⁶ *Id.* The argument for this theory is that although there is a clear conceptual analogy between social science research and fact—both are “positive” in the sense that they concern the way the world is with no necessary implications for the way the

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evaluating, and establishing social science research flow from conceiving of it as social authority rather than as legislative fact.²⁷

2. “*Social Fact*”: *Using Science to Determine (Case-Specific) Facts*

Davis stated that “[w]hen an agency [or court] finds facts concerning immediate parties—what the 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.”²⁸ Adjudicative facts are used to determine (or “adjudicate”) what happened in a specific

world ought to be—there is an equally clear conceptual analogy between social science research and law (both are “general” in that they produce principles applicable beyond particular instances). It is, therefore, plausible to classify social science research either as fact or as law. The criterion for classification—whether to give priority to the fact analogy or to the law analogy—should depend on the quality of the judicial procedures that flow from that classification. *Id.* at 494–95.

²⁷ Making the heuristic presumption that courts should treat social science data the way they treat legal precedent produces two corollary ideas about how a court should obtain empirical research: (1) the parties should present empirical research to the court in written briefs, and (2) judges may find social science research by searching for it themselves, as they do with law. Oral testimony of expert witnesses and remanding cases to the trial court to obtain evidence would be disallowed. Likewise, under this view, the way that courts should evaluate empirical data can be found in the way they evaluate legal precedent. Courts should evaluate scientific research studies along four dimensions analogous to those used to evaluate case precedent: courts should place confidence in social science research to the extent that the research (a) has survived the critical review of the scientific community, (b) has used valid research methods, (c) is generalizable to the legal question at issue, and (d) is supported by a body of other research. Finally, because legal rules make clear that appellate courts are not bound by trial courts’ conclusions of law, appellate courts should also not be bound by trial courts’ conclusions about empirical research; thus, *de novo* review is the appropriate standard. Monahan & Walker, *Social Authority*, *supra* note 13, at 495–516. When trial or appellate courts are confronted with an empirical question underlying a rule of law for which no research, or only inadequate research, is available, then with regard to social facts, evidentiary rules should govern and the party with the burden of proof is thus disadvantaged. See John Monahan & Laurens Walker, *Empirical Questions Without Empirical Answers*, 1991 *Wis. L. Rev.* 569, 573–74 (1991). With regard to social authority, candid judicial speculation is appropriate when the rule was created in the common law, and judicial review of state action is appropriate when the rule is a product of legislation. See *id.* at 575–89. With regard to social frameworks, the law of jury instructions controls. See *id.* at 591.

²⁸ Davis, *supra* note 15, at 402.

case, and not for some larger purpose, such as to argue that the law should be changed.²⁹

²⁹ We are concerned in this Essay with that subset of adjudicative facts on which social science research is brought to bear. One of the most frequent uses of social science research as adjudicative or case-specific facts involves trademark disputes. The Lanham Trademark Act of 1946, as amended by the Trademark Law Revision Act of 1988, 15 U.S.C. §1127 (2006), states that the Patent and Trademark Office will refuse to register a new trademark if it so resembles a trademark already registered to another person “as to be likely . . . to cause confusion.” 15 U.S.C. § 1052(d) (2006). A person who sells a product that is likely to cause confusion with an already trademarked product is liable for trademark infringement. Social science research in the form of surveys of consumers or potential consumers to ascertain the degree of confusion between products has been admitted in American courts at least since 1940. See, e.g., *Oneida, Ltd. v. Nat’l Silver Co.*, 25 N.Y.S.2d 271, 286 (N.Y. Sup. Ct. 1940). Initially, such evidence was often successfully challenged as contravening the prohibition against hearsay, since the respondents to the surveys were not present in court to testify. See, e.g., *Elgin Nat’l Watch Co. v. Elgin Clock Co.*, 26 F.2d 376 (D. Del. 1928). By the time *Zippo Mfg. Co. v. Rogers Imp’s Inc.*, 216 F. Supp. 670 (S.D.N.Y. 1963), was decided, however, the hearsay objection was definitively laid to rest: “The weight of case authority, the consensus of legal writers, and reasoned policy considerations all indicate that the hearsay rule should not bar the admission of properly conducted public surveys.” *Id.* at 682 (citations omitted).

A wide variety of methodologies are now routinely used by both plaintiffs and defendants in trademark cases to determine the presence of consumer confusion. See Monahan & Walker, *Social Science in Law*, 6th ed., *supra* note 19, at 95–130. In *Kis, S.A. v. Foto Fantasy, Inc.*, 204 F. Supp. 2d 968, 969–71 (N.D. Tex. 2001), for example, the plaintiff and the defendant both owned photo booths that were placed inside shopping malls throughout the United States. Foto Fantasy, the defendant, placed a sketch of the actor Tom Cruise outside its booths, with a sign reading “SCAN IN YOUR FAVORITE CELEBRITIES.” Kis, the plaintiff, sued Foto Fantasy for violating the Lanham Act by creating confusion as to the association of Tom Cruise with defendant’s photo booths, leading consumers to patronize Foto Fantasy booths rather than Kis booths. To demonstrate consumer confusion, Kis introduced as an expert witness a social scientist who conducted an experiment in a shopping mall. In this experiment, several hundred potential consumers (demographically matched to the typical consumers of photo booths) were given pictures of a photo booth. A random half of these potential consumers were given pictures that included a sketch of Tom Cruise, and a random half were given pictures of photo booths without such a sketch. Of the subjects in the former group, 56 percent believed that the actor was associated with Foto Fantasy booths, a view shared by only 7 percent of the subjects in the latter group. The court denied the defendant’s motion to exclude the social science expert and held that any alleged methodological defects of the experiment went to “the weight, and not the admissibility, of the evidence.” *Id.* at 973 (footnote omitted). The use of survey research in consumer confusion trademark cases like *Kis* has become so routine that the failure of a trademark owner to conduct a survey may now give rise to an adverse inference. See, e.g., *Pharmacia Corp. v. Alcon Labs., Inc.*, 201 F. Supp. 2d 335, 373 (D.N.J. 2002).

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We have used the term “social facts”³⁰ to distinguish adjudicative facts that consist of findings from social science research (for example, “X% of adults believe the film that the government claims is obscene violates the standards of their community”) from the more typical adjudicative facts that are of a historical, individualized nature (for example, “who hit whom” in a car crash). The law regarding social facts is much more settled than that governing research used to determine legislative facts, or social authority. Such evidence is now routinely admitted in trademark cases,³¹ in obscenity litigation,³² and in many other areas.³³ Recently, social science research has come to play a decisive role in adjudicating damages to specific plaintiffs in mass tort cases.³⁴

3. “Social Framework”: Using Science to Provide Context

Most of the judicial uses of social science research fall into one of the two categories we have termed social authority and social fact. Beginning in the early 1980s, however, courts began to confront uses of social science research that did not conform to these classifications. A third use of social science in law emerged, and we referred to this use as “social frameworks.”³⁵

³⁰ Walker & Monahan, Social Facts, *supra* note 14, at 881 & n.26.

³¹ See *supra* note 29.

³² See, e.g., *Kaplan v. California*, 413 U.S. 115, 117 (1973) (recognizing that the parties presented “expert” testimony as to the content and nature of a purportedly obscene book); *Saliba v. State*, 475 N.E.2d 1181, 1190 (Ind. Ct. App. 1985) (admitting a public opinion poll as to the community standards regarding sexually explicit materials). See generally Monahan & Walker, *Social Science in Law*, 6th ed., *supra* note 19, at 130–57 (summarizing case law).

³³ Shari Seidman Diamond, *Survey Research*, in Faigman et al, *supra* note 11, at 393, 399–400 (noting the areas of law—such as obscenity, antitrust, trademark infringement, false advertising, and mass torts—in which the use of social fact surveys has become common).

³⁴ See Laurens Walker & John Monahan, *Sampling Damages*, 83 *Iowa L. Rev.* 545, 545 (1998) [hereinafter Walker & Monahan, *Sampling Damages*] (discussing the decisions of “three district courts which have endorsed a form of aggregation that centered on statistical sampling”); Laurens Walker & John Monahan, *Sampling Liability*, 85 *Va. L. Rev.* 329, 330 (1999) [hereinafter Walker & Monahan, *Sampling Liability*] (noting the adoption of legislation permitting the use of “statistical analysis” in determining causation for the purposes of tobacco-related Medicaid litigation).

³⁵ Walker & Monahan, *Social Frameworks*, *supra* note 6, at 570. See generally Monahan & Walker, *Social Science in Law*, 6th ed., *supra* note 19, at 383–605 (summarizing case law).

We first identified four “notable examples” of social frameworks: eyewitness identification, risk assessments of violence, battered woman syndrome, and rape trauma syndrome.³⁶ In cases in each of these areas, social science research was not being used to provide social authority. No creation or modification of a rule of law was sought. Rather, the parties offering the research accepted the applicable legal rules and sought to show that the research would help the jury to decide the specific factual issues being litigated. At the same time, social science research in these cases was not being used to provide social facts. The parties to the cases were not involved in the research at all: the experts relied on “off the rack” studies published before the events giving rise to the litigation ever took place.

The way social science was used in these areas, however, did reflect the defining characteristics of both social authority and social fact. The research used demonstrated the critical component of social authority—generality—for the research in question sought to describe general processes of behavior or general causation principles. The research also possessed the critical component of social fact—specificity—for the research possessed relevance to the specific case at hand. The research used in these cases was thus neither wholly social authority nor wholly social fact but had elements of both of the existing categories. Instead, this use of social science research was best characterized as a third category, which we termed “social framework,”³⁷ to denote the use of general conclusions from social science research to help determine specific factual issues in a case.

When we first identified the concept of social frameworks, social science research used as a social framework was always introduced in the same way as case-specific social facts—by expert testimony before a jury. We proposed an alternative to treating social frameworks as if they were case-specific social facts, recognizing the similarity of social frameworks to both social authority and social fact.³⁸ The proposal was for a two-stage procedure for the judicial management of this use of social science. First, the generality that social

³⁶ Walker & Monahan, *Social Frameworks*, supra note 6, at 563.

³⁷ *Id.* at 570.

³⁸ See *id.* at 587–98.

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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 decision on a social framework affect later courts as one court's decision on a matter of law affects later courts. Second, the specificity that social frameworks share with research used as case-specific social fact suggests jurors should be allowed to use the research to help them decide the dispute at hand, but this general research should be communicated via judicial instruction that reflects the reliable general causation principles revealed by the research. The jurors would then be in a position to apply the general social framework to the specific evidence produced at trial, if they believed such application was warranted.

B. How Courts and Scholars Have Reacted to "Social Framework"

By 2008, the social framework concept was much discussed and often cited.³⁹ A fair reading of these sources yields two conclusions. First, the concept of social framework that we offered to capture the use of general conclusions from social science research to help determine factual issues in a specific case has been adopted widely. Second, the procedures we proposed for the judicial management of this use of social science have been uniformly ignored. Here, we consider both reactions.

1. Widespread Acceptance of the Social Framework Concept

The claim that courts are allowing the introduction of general social science research to frame or provide context for the determination of specific factual issues in litigation has met widespread agreement. David Faigman "adopts Monahan and Walker's tripar-

³⁹ As of August 18, 2008, the Walker & Monahan article on social frameworks had been cited 155 times in court opinions, treatises, and journals found within the Westlaw database. The social framework concept has become so accepted in discussions of social science evidence that it is often referenced without attribution to Monahan and Walker. For instance, an August 18, 2008 search of Westlaw's ALLCASES database using the query ["SOCIAL FRAMEWORK" & (WALKER /5 MONAHAN)] yielded 13 cases citing Walker and Monahan's discussion of social frameworks, whereas the query ["SOCIAL FRAMEWORK" & EXPERT & DA(AFT 1986)] yielded 38 cases discussing the social framework concept.

tite analysis rather than Davis' dichotomy primarily because the former explains more fully the role social science research plays in the courts."⁴⁰ Elsewhere, Faigman and colleagues, while acknowledging the limitations of our approach, noted that the "basic insights [behind the social framework concept] are essential to any viable strategy for evaluating scientific evidence."⁴¹ Similarly, Michael Saks has stated that "the Monahan-Walker theory provides familiar and powerful concepts both for understanding what courts have been doing, and for guiding courts in future considerations of social science knowledge,"⁴² and that although it is not "the definitive word on the subject, [t]he theory is important because it appears to fit the evidence of the behavior of diverse judges in diverse cases well."⁴³ Others have expressed the view, as phrased by Mark A. Small, that social framework constitutes "a conceptual bridge that is useful for understanding how social science can be used by legislatures and courts."⁴⁴

Courts as well as commentators have found use in the concept of social framework. For example, shortly after our original social frameworks article was published, the Idaho Court of Appeals stated:

Authors of the most highly developed thesis on the subject have identified three roles that such research can play in court. . . . In

⁴⁰ David L. Faigman, *To Have and Have Not: Assessing the Value of Social Science to the Law as Science and Policy*, 38 *Emory L.J.* 1005, 1068 n.238 (1989) (emphasis omitted).

⁴¹ David L. Faigman et al., *Check Your Crystal Ball at the Courthouse Door, Please: Exploring the Past, Understanding the Present, and Worrying About the Future of Scientific Evidence*, 15 *Cardozo L. Rev.* 1799, 1825 (1994).

⁴² Michael J. Saks, *Judicial Attention to the Way the World Works*, 75 *Iowa L. Rev.* 1011, 1030 (1990).

⁴³ *Id.* at 1031.

⁴⁴ Mark A. Small, *Legal Psychology and Therapeutic Jurisprudence*, 37 *St. Louis U. L.J.* 675, 681 (1993) (footnote omitted); see also Richard D. Friedman, *Anchors and Flotsam: Is Evidence Law "Adrift"?*, 107 *Yale L.J.* 1921, 1943 n.112 (1998) (reviewing Mirjan R. Damaska, *Evidence Law Adrift* (1997)) (noting that the concepts of social authority, social fact, and social framework have "considerable merit"). Not all scholarly commentary has been in accord. Robert Mosteller argued that "substantial uncertainty remains as to whether courts are capable of evaluating such research as they evaluate legal precedent and whether it is wise to accord such facts the longevity that is often associated with legal precedent." Robert P. Mosteller, *Legal Doctrines Governing the Admissibility of Expert Testimony Concerning Social Framework Evidence*, 52 *Law & Contemp. Probs.* 85, 110 n.90 (1989).

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the middle of the spectrum is an emerging new category of data—findings of researchers which provide insight into the likelihood that certain events or behavior will occur under given conditions. This category includes research on eyewitness perception and recollection. Walker and Monahan describe this third category as a “social framework,” and they define it as “the use of general conclusions from social science research in determining factual issues in a specific case.” . . . The Walker and Monahan procedural scheme may not be universally accepted, and we do not mandate it But we agree with the authors’ underlying thesis: “A novel role for empirical research is emerging—a use of general research conclusions to set a background context for deciding crucial factual issues at trial.” . . . The courts should not categorically bar this new contribution of social science to the law. Rather, each introduction of a social framework—such as eyewitness observation research—should be evaluated carefully on its own empirical and legal merits.⁴⁵

2. Widespread Rejection of the Procedure Proposed for Communicating Social Frameworks

While acceptance of social framework as a concept that captured a new and important development in courts’ use of social science research was immediate and widespread, the procedure that we advocated for communicating social framework information to the jury—namely, judicial instruction—has rarely been endorsed by scholars or implemented by courts. From the beginning, others have argued that expert testimony is a “higher quality” procedure for communicating social framework information than is jury in-

⁴⁵ State v. Alger, 764 P.2d 119, 127–28 (Idaho Ct. App. 1988) (citations omitted); see also United States v. Hessling, 845 F.2d 617, 620 (6th Cir. 1988) (“The findings of social science research can provide an invaluable frame of reference in deciding factual issues involved in a specific case.”); Hannon v. State, 84 P.3d 320, 352 (Wyo. 2004) (describing the type of testimony at issue “as ‘social frameworks,’ meaning the use of social science research to provide a context for assisting a jury to decide a specific factual issue. . . . Expert testimony . . . is often considered helpful because experts can systematize and explain such conditions better than laypeople.” (citations omitted)); Warner v. State, 28 P.3d 21, 30 (Wyo. 2001) (“The expert evidence offered in this case can be classified as falling within the emerging field of ‘social framework and syndrome’ evidence and is considered a proper subject for expert testimony, particularly in sexual assault cases.” (citations omitted)).

struction, because juries can understand live testimony from an expert better than they can understand instructions that are read to them by a judge. For example, Neil Vidmar and Regina Schuller stated:

Research comparing the delivery of social framework information by judicial instructions to delivery by means of expert testimony has been limited to studies of information bearing on eyewitness reliability. These studies indicate that delivery of social framework evidence through judicial instructions will not be as effective as delivery by means of expert testimony.⁴⁶

⁴⁶ Neil J. Vidmar & Regina A. Schuller, *Juries and Expert Evidence: Social Framework Testimony*, 52 *Law & Contemp. Probs.* 133, 173 (1989). This view has been echoed by several other commentators. See Erica Beecher-Monas, *Domestic Violence: Competing Conceptions of Equality in the Law of Evidence*, 47 *Loy. L. Rev.* 81, 85 n.12 (2001) (arguing that it was unlikely “that jury instructions [would] sufficiently solve the problem of dispelling juror misconceptions”); Laura Etlinger, *Social Science Research in Domestic Violence Law: A Proposal to Focus on Evidentiary Use*, 58 *Alb. L. Rev.* 1259, 1285–86 (1995) (“Those who have criticized Monahan and Walker’s and Monahan’s suggestion [to use jury instructions] caution . . . that initial studies indicate jury instructions may be less effective than expert testimony in presenting social framework evidence to the jury.”); Ian Freckelton, *The Syndrome Evidence Phenomenon: Time to Move On?*, in *Psychology in the Courts: International Advances in Knowledge* 155, 176 (Ronald Roesch et al. eds., 2001) (expressing doubt that jury instructions would be able to “disabuse jurors of stereotypes, assumptions and modes of analysis which might have become the norm in the course of a multi-day or multi-week trial”); Marilyn MacCrimmon, *Fact Determination: Common Sense Knowledge, Judicial Notice, and Social Science Evidence (Article 2)*, in 1 *International Commentary on Evidence* 1, 17 n.117 (1998) (“There appears to be a lack of empirical support for the view that jury instructions given at the end of the trial are effective in countering misperceptions about eyewitness identification.”); Mosteller, *supra* note 44, at 110 n.93 (“[T]he [jury] instruction format for presentation of this information removes . . . its effectiveness for the jury.”); Aviva Orenstein, *No Bad Men!: A Feminist Analysis of Character Evidence in Rape Trials*, 49 *Hastings L.J.* 663, 709 n.187 (1998) (arguing that because jury instructions “come at the end of the trial [and] are often boring and confusing,” jury instructions may be an ineffective method of conveying social framework evidence); Paul Roberts, *Expert Evidence in Canadian Criminal Proceedings: More Lessons from North America*, in 1 *Law and Science: Current Legal Issues* 175, 201 (Helen Reece ed., 1998) (“In the absence of empirical research it is impossible to tell whether [letting the judge instruct the jury on battered women’s syndrome (BWS)] would be a fairer, more effective, or more efficient way of communicating information about BWS to juries.”); Saks, *supra* note 42, at 1024 n.42 (“Judges cannot be expected to instruct the jury on all manner of frameworks in every discipline whose facts come into issue in a trial.”).

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Perhaps partially as a result of widespread scholarly misgivings about the effectiveness of jury instructions—as compared with expert testimony—in conveying social framework information to fact-finders,⁴⁷ courts have been exceedingly reluctant to order that instructions be used. Indeed, only two cases have adopted instructions as the preferred method of communicating social framework information to a jury, and both have been in the area of eyewitness identification.⁴⁸

In sum, despite broad-based agreement that general findings from social science research were being used to provide context for the determination of specific factual issues in litigation, our proposal to communicate those general findings to the jury via judicial instruction has been almost uniformly disregarded in favor of continuing the preexisting practice of communicating general research findings through the testimony of expert witnesses.

⁴⁷ Not all scholarly reaction to the use of jury instructions has been negative. See Jennifer Kulynych, *Psychiatric Neuroimaging Evidence: A High-Tech Crystal Ball?*, 49 *Stan. L. Rev.* 1249, 1267 (1997) (arguing that the use of jury instructions to communicate social frameworks “minimize[s] the likelihood of undue prejudice” arising from the use of social science research).

⁴⁸ In *State v. Ledbetter*, 881 A.2d 290 (Conn. 2005), the court ordered that the following instruction be given in relevant cases:

In this case, the state has presented evidence that an eyewitness identified the defendant in connection with the crime charged. That identification was the result of an identification procedure in which the individual conducting the procedure either indicated to the witness that a suspect was present in the procedure or failed to warn the witness that the perpetrator may or may not be in the procedure.

Psychological studies have shown that indicating to a witness that a suspect is present in an identification procedure or failing to warn the witness that the perpetrator may or may not be in the procedure increases the likelihood that the witness will select one of the individuals in the procedure, even when the perpetrator is not present. Thus, such behavior on the part of the procedure administrator tends to increase the probability of a misidentification.

This information is not intended to direct you to give more or less weight to the eyewitness identification evidence offered by the state. It is your duty to determine whether that evidence is to be believed. You may, however, take into account the results of the psychological studies, as just explained to you, in making that determination.

Id. at 318–19. Similarly, in *State v. Cromedy*, 727 A.2d 457 (N.J. 1999), the court held that “a cross-racial identification . . . requires a special jury instruction in an appropriate case.” *Id.* at 467.

II. SOCIAL FRAMEWORK: A REVISED PROPOSAL

Although we remain committed to social framework as a valuable concept to describe general findings from social science research used to provide context to determine specific factual issues at trial, we are no longer committed to our proposal that frameworks be delivered to the jury only by instruction. Some judges may prefer the use of instructions, and we continue to view instruction as an acceptable method.⁴⁹ Generally, however, we view the criticism of the commentators as well taken and the practical judgment of the courts as persuasive. Both sources suggest that expert testimony is often the most effective mechanism for informing the jury about relevant general research that would be helpful in carrying out its fact-finding responsibilities. Since those responsibilities are a ubiquitous aspect of our system of justice, the best possible mode of communicating frameworks is clearly desirable. Often, as our critics have convinced us, communicating social frameworks by means of the testimony of expert witnesses will be more effective than communicating frameworks via instruction. For example, “live” testimony may be more understandable to juries, cross-examination of experts may help explain methodological aspects of the research, and, in some jurisdictions, jurors can submit clarifying questions to be asked of the witness.⁵⁰

However, using experts to communicate social frameworks to juries leads to an important question, and one that did not arise when

⁴⁹ Judges will, of course, continue to screen expert testimony for relevancy, as required by Federal Rule of Evidence 402. Fed. R. Evid. 402 (“Evidence which is not relevant is not admissible.”). As applied, Rule 402 requires only providing evidence “having any tendency” to make a material fact “more probable or less probable than it would be without the evidence.” Fed. R. Evid. 401. Also, judges will continue to apply the special relevance requirement for expert evidence, per Federal Rule of Evidence 702. Fed. R. Evid. 702 (stating that expert testimony must “assist the trier of fact to understand the evidence or to determine a fact in issue”). As we discussed in the original article on social frameworks, this requirement may be met where the testimony provides knowledge about behavioral patterns that lay persons cannot reasonably be expected to possess, such as information about common responses to spousal or partner abuse, or contradicts laypersons’ commonly held beliefs, such as information about the nature of the general relationship between eyewitness confidence and accuracy. See Walker & Monahan, *Social Frameworks*, supra note 6, at 578–580.

⁵⁰ See generally Neil Vidmar, *Expert Evidence, the Adversary System, and the Jury*, 95 *Am. J. Pub. Health* S137 (2005).

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we proposed that social frameworks be communicated by means of judicial instruction: what, if anything, can the expert testify to by way of linking the general research to the specific facts of the case before the jury? Thus far, courts have not answered this question uniformly. In *International Healthcare Exchange v. Global Healthcare Exchange*, for example, the court allowed an expert to apply general principles identified in the gender stereotyping literature to the facts of the case and to “opine[] . . . that Plaintiff’s work assignments and termination were the product of such stereotyping.”⁵¹ Other courts have barred experts presenting social frameworks from linking the general research findings to any issue in the specific case on trial.⁵²

⁵¹ 470 F. Supp. 2d 345, 355 (S.D.N.Y. 2007); see also, e.g., *Butler v. Home Depot, Inc.*, 984 F. Supp. 1257, 1265 (N.D. Cal. 1997) (permitting an expert to testify about the “specific barriers to the advancement of women at Home Depot”); *Jenson v. Eveleth Taconite Co.*, 824 F. Supp. 847, 864 n.34, 882–83 (D. Minn. 1993) (permitting expert to “opine[] that sex stereotyping affected all decisions at [the employer]”); *Stender v. Lucky Stores, Inc.*, 803 F. Supp. 259, 303, 327 (N.D. Cal. 1992) (finding persuasive the testimony by Dr. Bielby that “women are disproportionately assigned to departments with limited promotion opportunities at Lucky” because of personnel systems that allow too much subjectivity and discretion and that, in turn, allow gender and race stereotypes to affect personnel decisions); *Hnot v. Willis Group Holdings*, No. 01 CIV 6558 GEL, 2007 WL 1599154, at *3 (S.D.N.Y. Jun. 1, 2007) (allowing expert to “identify particular circumstances allegedly present in the evidence as consistent with the phenomena [of gender stereotyping] he describes as a general matter”).

⁵² See, e.g., *Rowe Entm’t, Inc. v. William Morris Agency, Inc.*, No. 98 Civ. 8272(RPP), 2003 WL 22272587, at *8–9 (S.D.N.Y. Oct 2, 2003) (“Insofar as Professor Feagin’s Report and proposed testimony is based on his finding of specific actions of alleged racial discrimination against Plaintiffs, it still fails to meet the requirements of Rule 702. . . . To have an ‘expert’ testify that the facts alleged in the Amended Complaint amount to racial discrimination, or to testify that certain deposition testimony constitutes racial discrimination, would (1) invade the province of the jury to determine whether those facts were, in actuality, acts of racial discrimination . . . , and (2) ‘invade the province of the court to determine the applicable law and to instruct the jury as to that law.’” (citations omitted)); *Dang Vang v. Toyed*, 944 F.2d 476, 481–82 (9th Cir. 1991) (holding that the trial court did not abuse its discretion in admitting an epidemiologist’s general testimony on Hmong culture, while precluding the expert from giving “his opinion regarding the specifics of [the] case, such as whether there was a rape or why these particular plaintiffs did not report the rape”); *Mull v. United States*, 402 F.2d 571, 574 (9th Cir. 1968) (“[T]his man, a cultural anthropologist [cannot] say that on a given state of facts [the defendant] would be incapable of entertaining an intent. There just isn’t any field for the expert in cultural anthropology for any such testimony as that”); *People v. Poddar*, 103 Cal. Rptr. 84, 88 (1972) (holding that the trial court properly excluded testimony by an anthropologist linking adjustment difficulties of Indian students to specific facts of the case).

We believe that courts in the latter group are correct as a matter of law: experts presenting social frameworks should be prohibited from providing any linkage to the case at hand, leaving application (or not) of the general research findings entirely to the fact-finder. We continue to believe that “[t]he role of the jury is . . . to apply[] the social framework . . . to the specific facts of the case,”⁵³ and “[i]n applying a framework . . . , the jury is free to determine that the general research findings are inapposite to the facts of the specific case before it.”⁵⁴ We base our conclusion, as explained below, on the Federal Rules of Evidence and the “contextual” nature of social frameworks. We argue that linkage is not permissible under current understanding of the rules governing expert testimony nor appropriate given the limits of general social science research. Further, we argue that both the Sixth and Seventh Amendments to the Constitution reserve speculative judgments for the jury.

A. Reliability Constraints on Expert Testimony

The paradigmatic linkage question is presented when an expert testifies about general research—that is, research that did not involve the parties in the case before the court⁵⁵—and then proposes to apply that research to the specific case at hand. Any such linkage offered by the expert, however, would violate Federal Rule of Evidence 702, which requires, as a threshold matter, that testimony offered by an expert be based on “sufficient facts or data.”⁵⁶ No field of social science of which we are aware permits its experts to speculate that a general finding, derived from group averages or ecological correlations, applies to each member of the group or applies to one specific group member but not to another. For example, in presenting social framework evidence on eyewitness identification, the expert can testify on general research that cross-racial identification is, on average, worse than same-race identification.

⁵³ Walker & Monahan, *Social Frameworks*, supra note 6, at 592.

⁵⁴ *Id.* at 594 n.117.

⁵⁵ Research that involved the parties in the case before the court would be considered social fact (or what Davis called “adjudicative fact”) rather than social framework. See supra Subsection I.A.2.

⁵⁶ Fed. R. Evid. 702. Furthermore, the data forming the basis of an opinion may only be from inadmissible sources of evidence if these data are “of a type reasonably relied on by experts in the particular field.” Fed. R. Evid. 703.

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But the expert would be engaging in pure speculation to further testify that this particular witness of race A misidentified this particular defendant of race B.⁵⁷ Testimony of this kind would improperly treat findings drawn from aggregate data as if they revealed constant effects across individuals and settings,⁵⁸ and would ignore the potential confounding and moderating variables that were statistically or experimentally controlled in the research settings but

⁵⁷ On own-race bias in identifications, see generally Christian A. Meissner & John C. Brigham, Thirty Years of Investigating the Own-Race Bias in Memory for Faces: A Meta-Analytic Review, 7 *Psychol. Pub. Pol'y & L.* 3 (2001). On the problems of speculation and subjective interpretation, see generally Raymond Boudon, *The Art of Self-Persuasion* 56–73 (1994) (discussing Simmel's model of social scientific epistemology).

⁵⁸ Most studies in social science test for causal relations or correlations between variables using aggregated data (for example, an experiment often tests whether different levels of a variable lead to statistically significant differences in the average behavior of groups exposed to the different levels of the variable). Cf. Faigman et al., *supra* note 11, at 50 (“Virtually all scientific evidence shares this basic dichotomy between the general and the specific.”). Findings drawn from aggregate data do not imply generally applicable findings because differences in behavior of just a small number of subjects may lead to statistically significant differences across conditions of a study. “A *general-type proposition* asserts something which is presumably true of each and every member of a designable class. An *aggregate-type proposition* asserts something which is presumably true of the class considered as an aggregate.” David Bakan, *The General and the Aggregate: A Methodological Distinction*, 5 *Perceptual & Motor Skills* 211, 211 (1955); see also Alan Agresti & Barbara Finlay, *Statistical Methods for the Social Sciences* 353 (3d ed. 1997) (“Making predictions about individuals based on the behavior of aggregate groups is known as the ecological fallacy.”); Klaus Fiedler et al., *Pseudocontingencies in a Simulated Classroom*, 92 *J. Personality & Soc. Psychol.* 665, 665 (2007) (“Stating that the average achievement of school classes increases with their average socioeconomic status is different from stating that an individual student's achievement increases with socioeconomic status. The relationship can be strong at group level but negligible at individual level, a pattern commonly referred to as an ecological correlation. . . . Thus, contingencies assessed at group level might be misleading when assessing individual-level contingencies.”); James T. Lamiell, ‘Nomothetic’ and ‘Idiographic’: Contrasting Windelbrand's Understanding with Contemporary Usage, 8 *Theory & Psychol.* 23, 34 (1998) (“Under no circumstances that have ever been or, in all likelihood, ever will be realized empirically can [personality psychology] properly be said to produce knowledge of what is generally true of persons.”). Thus, it is not proper to assume that a social scientific finding is a good description of all individuals studied, much less any particular individual within a study. Without studies of the individuals or organizations involved in a particular case—“social facts”—there are no reliable means of stating that a particular organization and its members will exhibit an effect found within aggregated data. See Michael J. Saks, *Improving APA Science Translation Amicus Briefs*, 17 *Law & Hum. Behav.* 235, 244 (1993).

that could not be controlled in the specific case where the behavior in question occurred.⁵⁹

Were this prohibition against linkage not apparent from a reading of the text of Federal Rule of Evidence 702, the Supreme Court's interpretations of this rule make it evident that unscientific speculation about the linkage of general research to a specific case is improper. Writing for the Court in *Daubert v. Merrell Dow Pharmaceuticals*, Justice Blackman stated that

⁵⁹ Social science studies rarely find strong correlational or causal relationships among variables. Instead, most of the effects associated with variables studied by social scientists are small to moderate and can be overwhelmed, qualified, or even reversed due to the influence of other variables or combinations of variables. See Paul E. Meehl, *Theoretical Risks and Tabular Asterisks: Sir Karl, Sir Ronald, and the Slow Progress of Soft Psychology*, 46 *J. Consulting & Clinical Psychol.* 806, 814 (1978) (“[T]he statistical dependencies we observe are always somewhat, and often strongly, dependent on the institution-cum-population setting in which the measurements were obtained.”); F.D. Richard et al., *One Hundred Years of Social Psychology Quantitatively Described*, 7 *Rev. Gen. Psychol.* 331, 339 (2003) (finding from a quantitative summary of over 25,000 social psychological studies that roughly 30% of the studies yielded small effect sizes, roughly 50% yielded moderate effect sizes, and less than 25% yielded large effect sizes); Judy D. Olian et al., *The Impact of Applicant Gender Compared to Qualifications on Hiring Recommendations: A Meta-analysis of Experimental Studies*, 41 *Organizational Behav. & Hum. Decision Processes* 180, 191 (1988) (finding that, while gender accounted for 4% of the variance in hiring recommendations within experimental studies of gender bias effects on applicant hiring, job qualifications accounted for 35% of the variance). Most importantly, the effects of the many potential influencing variables in any given setting cannot be inferred, in a scientifically reliable fashion, after-the-fact from a reading of litigation materials. Rather, some sort of experimental or statistical test would be needed to estimate the influence of various variables. See Gary King et al., *Designing Social Inquiry: Scientific Inference in Qualitative Research* 211 (1994) (“In general, we conclude, the single observation is not a useful technique for testing hypotheses and theories.”); Tim Büthe, *Taking Temporality Seriously: Modeling History and the Use of Narratives as Evidence*, 96 *Am. Pol. Sci. Rev.* 481, 489 (2002) (“[D]ue to the limited truth claims of narratives, those who use historical narratives as empirical evidence for a causal explanation will probably fail to assess alternative explanations and, if they try, will fail to convince skeptics. . . . The interpretive freedom of the author makes it unlikely that less convincing alternative narratives would be accepted as sound evidence of the failure of the alternative explanations.”); Paul W. Holland, *Statistics and Causal Inference*, 81 *J. Am. Stat. Ass'n* 945, 947 (1986) (discussing the need for statistical or experimental studies to reach causal conclusions); Arend Lijphart, *The Comparable-Cases Strategy in Comparative Research*, 8 *Comp. Pol. Stud.* 158, 160 (1975) (“Case studies . . . are intensive but uncontrolled examinations of single cases that cannot directly result in empirical generalizations and cannot even be used to test hypotheses.”).

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[t]he subject of an expert's testimony must be "scientific . . . knowledge." The adjective "scientific" implies a grounding in the methods and procedures of science. Similarly, the word "knowledge" connotes more than subjective belief or unsupported speculation Faced with a proffer of expert scientific testimony, then, the trial judge must determine at the outset . . . whether the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact in issue.⁶⁰

The Court's subsequent decision in *Kumho Tire Co. v. Carmichael* emphasized that

[t]he objective of [*Daubert's* gatekeeping] requirement is to ensure the reliability and relevancy of expert testimony. It is to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.⁶¹

⁶⁰ 509 U.S. 579, 590–93 (1993) (footnotes omitted). Rule 702 was amended to conform to the Court's interpretation. See Fed. R. Evid. 702 advisory committee's note ("Rule 702 has been amended in response to *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and to the many cases applying *Daubert*."). In the paradigm linkage case, the three specific requirements of Rule 702 focused on the reliability of opinions—that testimony be based on "sufficient facts or data," that testimony be the product of "reliable principles and methods," and that reliable principles and methods be applied "reliably to the facts of the case"—are not met. Fed. R. Evid. 702. Speculation fails all three requirements because linkage is not based on sufficient data and employs no reliable method, which renders any application unreliable.

⁶¹ 526 U.S. 137, 152 (1999). In *Kumho Tire*, the "relevant issue was whether the expert could reliably determine the cause of *this* tire's separation." *Id.* at 154. *Kumho Tire* establishes that it is not sufficient for an expert to invoke the reliability of the general social science research contained within a social framework to support inferences drawn from this general research to the case at hand: Rule 702's reliability analysis governs the "task at hand"—application of the research to the specific case—as well. *Id.* at 141 (quoting *Daubert*); see also Fed. R. Evid. 702(3) (requiring that an expert's principles and methods be applied "reliably to the facts of the case"); D. Michael Risinger et al., *The Daubert/Kumho Implications of Observer Effects in Forensic Science: Hidden Problems of Expectation and Suggestion*, 90 Cal. L. Rev. 1, 4 (2002) ("[Reliability] judgment[s] must be made concerning the 'task at hand,' instead of globally in regard to the average dependability of a broadly defined area of expertise. In other words, reliability cannot be judged 'as drafted,' but must be judged only specifically 'as applied.'" (footnotes omitted)).

And in *General Electric v. Joiner*, the Court rejected *ipse dixit* as a sufficient basis for expert opinions to qualify as relevant and reliable under Rule 702.⁶² Extrapolations from existing data to the case at hand must satisfy the requirements of Rule 702 just as testimony about a social framework must satisfy the requirements of Rule 702. There is no special exception to the reliability requirement for linkage opinions, even if they are couched as opinions on “ultimate issues,” for reliability is a prerequisite to the giving of ultimate issue opinions under Rule 704.⁶³

There is little doubt that those experts who purport to link findings from academic studies to behaviors in particular cases do not apply the same level of intellectual rigor used to produce the empirical studies from which they extrapolate.⁶⁴ Any attempt to link basic research findings to specific organizational settings and outcomes requires that many assessments be made about the presence and operation within the organization of variables that have been found to be important within the basic research settings. To make these assessments in a scientifically reliable way, the variables must be clearly defined, measured, and their relationships systematically tested, with the definitions, measurements, and tests reported in a transparent way so that another researcher could attempt to replicate the assessments.⁶⁵ To qualify as scientific, a system of meas-

⁶² 522 U.S. 136, 146 (1997) (“[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert.”); see also *Kumho Tire*, 526 U.S. at 157 (quoting *Joiner*).

⁶³ The inadmissibility of testimony linking general research to specific cases under Rule 702 vitiates the effect of Rule 704. Rule 704 states, in part, that “testimony in the form of an opinion or inference *otherwise admissible* is not objectionable because it embraces an ultimate issue to be decided by the trier of fact.” Fed. R. Evid. 704(a) (emphasis added). As Judge Weinstein notes, “[t]he rules governing opinions and expert testimony are of particular importance in determining whether opinion testimony on ultimate issues should be permitted under rule 704 For example, the testimony must meet the criterion of helpfulness imposed by . . . Rule 702.” Jack B. Weinstein & Margaret A. Berger, Weinstein’s Evidence Manual § 704.03[1].

⁶⁴ See *infra* Part III.

⁶⁵ See, e.g., David L. Hull, *Science as a Process* 347 (1988) (“To count as scientific, a finding must be replicable.”); Olaf Helmer & Nicholas Rescher, *On the Epistemology of the Inexact Sciences*, 6 *Mgmt. Sci.* 25, 27 (1960) (“[I]t is *objectivity*, i.e., the intersubjectivity of findings independent of any one person’s intuitive judgment, which distinguishes science from intuitive guesswork however brilliant.”); Peter Railton, *Marx and Objectivity of Science*, 2 *PSA* 1984: Proceedings of the 1984 Biennial Meeting of the Philosophy of Science Association 813, 815 (Peter D. Asquith & Philip Kitcher

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urement or testing cannot be a private system that only one researcher (or expert) can apply. A scientific paper that contained only a series of descriptive conclusions and did not disclose the particular methods used and measurements taken to reach those conclusions would be promptly rejected by a scientific journal. Unfortunately, some courts have allowed experts to link social frameworks to the facts of particular cases despite the experts' failure to meet these scientific requirements.⁶⁶ As Faigman states, “[e]xperts’ case-specific conclusions appear largely to be based on an admixture of an unknown combination of knowledge of the subject, experience over the years, commitment to the client or cause, intuition, and blind faith. Science it is not”⁶⁷

Social framework linkage via unscientific means thus presents the dangers of confirmation bias and other “observer effects” much discussed with respect to “first generation” forensic evidence that relies on an expert’s subjective judgment, experience, and intuition.⁶⁸ The social framework expert who seeks to bridge the gap be-

eds., 1985) (“[O]bjective inquiry uses procedures that are intersubjective, and independent of particular individuals or circumstances—e.g., its experiments are reproducible, its methods are determinate, its criteria are effective, and it makes no essential use of introspective or subjectively privileged evidence in theory assessment.”). See generally Gregory Mitchell, *Empirical Legal Scholarship as Scientific Dialogue*, 83 N.C. L. Rev. 167, 180–88 (discussing the importance of publicity and transparency to the scientific process).

⁶⁶ See supra note 51 and accompanying text.

⁶⁷ David L. Faigman, *The Limits of Science in the Courtroom*, in *Beyond Common Sense: Psychological Science in the Courtroom* 303, 310 (Eugene Borgida & Susan T. Fiske eds., 2008); see also Faigman et al., supra note 59, at 51 (“[A]llowing experts to take the next step and apply the science to the case without research supporting their ability to do so invites unfounded speculation.”); id. at 52. (“Ordinarily, experts should not be allowed to testify about the specific application of scientific knowledge or a scientific test unless that knowledge or test has been demonstrated to be reliable and valid.”).

⁶⁸ See Erin Murphy, *The New Forensics: Criminal Justice, False Certainty, and the Second Generation of Scientific Evidence*, 95 Cal. L. Rev. 721, 726–31 (2007) (distinguishing between “first generation” and “second generation” forensic evidence); id. at 729 (“[U]nlike first-generation methods that largely rely upon intuitive methods that lead to findings of general inclusion, second-generation sciences use technically sophisticated methods that provide individuated findings related with the highest levels of confidence.”). Broadly defined, “observer effects” refer to experts’ motivational states and cognitive limits that “influence their perceptions and interpretations of what they observe.” Risinger et al., supra note 61, at 6; see also Keith A. Findley & Michael S. Scott, *The Multiple Dimensions of Tunnel Vision in Criminal Cases*, 2006

tween general principles and a specific case must rely on his or her subjective judgments and interpretations of case-specific data to decide which general principles apply and which do not, to determine which causal hypotheses should be rejected and which should be accepted, and to decide how much weight to give conflicting pieces of possibly unrepresentative evidence within a record assembled by the parties in the context of litigation. Making these determinations in a reliable and unbiased fashion is difficult enough when relying on “social fact” research that involves the parties before the court; doing so without such case-specific research presents a substantial risk that an expert’s preexisting beliefs, values, and expectations will bias the resulting opinions.⁶⁹ In requiring reliable extrapolations and rejecting *ipse dixit* as sufficient justification for an expert opinion, the Supreme Court recognized the potential for error that arises when experts rely not on reliable data analyzed using validated methods but rather on subjective judgments about what happened in a particular case.⁷⁰

B. Constitutional Division of Labor

If, in cases where social frameworks are admitted, speculation about the import of general research for the present case is to some extent inevitable, jurors can consider the evidence in a case and apply the social framework in light of this evidence as well as an expert can.⁷¹ Indeed, a primary reason for curtailing unscientific

Wis. L. Rev. 291 (describing the adverse effects of “tunnel vision” on the criminal justice system).

⁶⁹ For a discussion of various possible “observer effects” on expert testimony, see Risinger et al., *supra* note 61, at 12–27. As Risinger and colleagues note, “[s]ensitivity to the problems of [such] observer effects has become integral to the modern scientific method.” *Id.* at 6; see also Mike Redmayne, *Expert Evidence and Criminal Justice* 16 (2001) (“[A] feature of good scientific practice is the institution of processes—such as blind testing, the use of precise measurements, standardized procedures, statistical analysis—that control for bias.”).

⁷⁰ See Fed. R. Evid. 702 advisory committee’s note (noting that one of the specific factors for testing reliability explicated by the *Daubert* Court included “whether the expert’s technique or theory can be or has been tested—that is, whether the expert’s theory can be challenged in some objective sense, or whether it is instead simply a subjective, conclusory approach that cannot reasonably be assessed for reliability”).

⁷¹ Subject to the usual constraints on attorney arguments, attorneys would be permitted to argue that jurors should, or should not, make linkages between the case and the social framework.

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linkage when social framework evidence is admitted via expert testimony is to avoid jury deference to experts where such deference is not warranted.⁷² Allowing the expert to link the framework to a specific case risks short-circuiting a fuller fact-finding process that would likely be required otherwise and risks intrusion on the jury's role as interpreter and consolidator of the admissible evidence. Furthermore, not only does placing discretion to speculate in the hands of the jury avoid the pretense that *scientific* experts possess some expertise at *unscientific* speculation,⁷³ but both the Sixth and Seventh Amendments to the Constitution reserve speculative judgments for the jury.⁷⁴ As the Supreme Court stated in *Lavender v. Kurn*,

[w]henever facts are in dispute or the evidence is such that fair-minded men may draw different inferences, a measure of speculation and conjecture is required on the part of those whose duty it is to settle the dispute by choosing what seems to them to be the most reasonable inference.⁷⁵

It is important to keep in mind, as well, that social frameworks should be most helpful to the jury where they bring into question jurors' possibly flawed intuitions or inaccurate beliefs about behavior, such as the conditions under which eyewitness testimony tends to be more or less accurate.⁷⁶ In these cases, social science research

⁷² See, e.g., Julie Seaman, *Triangulating Testimonial Hearsay: The Constitutional Boundaries of Expert Opinion Testimony*, 96 *Geo. L.J.* 827, 860 (2008) (“[P]ermitting the jury to rely on the credibility determination of the expert as to the underlying evidence is indistinguishable from admitting expert opinion based upon nothing but ‘the ipse dixit of the expert.’” (citations omitted)).

⁷³ And of course, any such speculation by the jury is supposed to be guided speculation, based on (competing) expert testimony about the meaning of social framework research or the direction provided by judicial instructions.

⁷⁴ U.S. Const. amend. VI (guaranteeing the right to a trial “by an impartial jury”); U.S. Const. amend. VII (preserving the right to trial by jury according to the rules of the common law).

⁷⁵ 327 U.S. 645, 653 (1946); see also *Boeing Co. v. Shipman*, 411 F.2d 365, 392 (5th Cir. 1969) (“[T]he formulas evolved . . . especially in *Lavender v. Kurn* . . . operate to restore the historic common-law function of the jury in passing on disputed questions of fact.”).

⁷⁶ See Walker & Monahan, *Social Frameworks*, supra note 6, at 579 (“The framework cases that have been adjudicated to date suggest that judges often find that empirical research provides uncommon and otherwise unavailable insights into factual issues at trial.”); id. at 580 (“Knowledge of certain topics, therefore, appears not to be

provides a framework for evaluating the reasonableness and credibility of a party's testimony or theory of a case, without the expert offering any case-specific inferences or linkages. If social framework testimony cannot somehow assist the trier of fact absent linkage by the expert, then the framework testimony should not be admitted.⁷⁷

Finally, we remain convinced that, because social framework testimony possesses a general, law-like aspect, its admission raises issues analogous to those presented by the creation and use of precedent in the common law. Accordingly, we believe it appropriate for a judge to exercise her power to comment on evidence to suggest how social framework evidence may apply to the case at hand,⁷⁸ and for appellate courts to then review this commentary to set limits on the proper uses of framework evidence and to ensure uniformity of use across cases. In this way, a common law of social frameworks may develop analogous to the common set of judicial instructions on social frameworks that we envisioned in our original proposal.

III. SOCIAL FRAMEWORK IN *DUKES V. WAL-MART*

In this Part, we illustrate the proposed limits on social framework testimony by reference to what has become its ascendant exemplar: the use of social science research on stereotyping to sup-

common among lay factfinders, and what passes for knowledge in other areas may be bogus. A growing number of courts have held that the use of social frameworks to correct beliefs that are erroneous does indeed 'assist the trier of fact.'" (citation omitted)).

⁷⁷The underlying general social science research that serves as the foundation of social framework opinion must itself be reliable, and the summary of this research provided by the expert must itself follow scientific norms of reliability for literature reviews. See Harris Cooper, Editorial, 129 *Psychol. Bull.* 3, 3 (2003) ("Today, it is widely accepted that those who accumulate and integrate other people's data ought to be held to similar standards of methodological rigor as the researchers whose evidence forms the bases of their review."). See generally Roy F. Baumeister & Mark R. Leary, Writing Narrative Literature Reviews, 1 *Rev. Gen. Psychol.* 311 (1997); Paul E. Meehl, Why Summaries of Research on Psychological Theories Are Often Uninterpretable, 66 *Psychol. Rep.* 195 (1990).

⁷⁸See Fed. R. Evid. 105. For instance, a judge might instruct the jury that it can only consider the social framework for purposes of evaluating the credibility of witnesses in an eyewitness case, whereas in a sexual harassment case a judge might instruct the jury that it can consider the social framework to decide whether conduct is objectively offensive.

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port claims for relief in employment discrimination class actions.⁷⁹ As one of the lawyers for the plaintiffs in *Dukes v. Wal-Mart* recently explained:

In class actions, expert testimony is generally used to provide a clearer causal link between the allegation that certain practices lead to discrimination and statistical evidence showing discriminatory outcomes. Expert testimony often proceeds under “social framework analysis,” in which the point is to provide information to the factfinder about how stereotyping operates, what stereotypes are prevalent, circumstances under which decisionmakers are more likely or less likely to rely on stereotypes, etc. In other words, they provide a social science framework within which evidence the plaintiffs present about the specific facts of their case can be more accurately evaluated.⁸⁰

If experts in these cases simply described social science findings on the circumstances under which gender stereotyping is more or less likely to occur within the research settings, leaving it to the fact-finder to determine the applicability of this research to the circumstances of a particular employer, such testimony would be entirely consistent with both our original argument—that social frameworks provide valuable contextual information to assist in understanding the facts of a particular case—and the argument here that experts be allowed to communicate the social framework to jurors but not make case-specific applications. In many cases, however, experts have not been content to provide a description of

⁷⁹ While we focus on a case involving social framework testimony about sex stereotypes, social framework testimony on other stereotypes, particularly racial stereotypes, has also become common in employment cases. For instance, Dr. Bielby recently provided social framework analyses in race discrimination class actions filed against Cargill and FedEx. Expert Report of William T. Bielby, *Satchell v. FedEx Express*, 2005 WL 2397522 (N.D. Cal. Sept. 28 2005) (No. C 03-2659 SI); Expert Report of William T. Bielby, *Arnold v. Cargill, Inc.*, 2006 WL 1716221 (D. Minn. Jun. 20, 2006) (No. 01-2086). In addition, social science research on perceptions of and reactions to workplace harassment is being increasingly used in employment cases. See Louise F. Fitzgerald & Linda L. Collinsworth, (Un)common Knowledge: The Legal Viability of Sexual Harassment Research, *in Beyond Common Sense*, supra note 67, at 103.

⁸⁰ Christine E. Webber, A Plaintiff’s Perspective on Some Evidentiary Issues and Jury Instructions in Employment Discrimination Litigation (With Sample Instructions), *ALI-ABA Business Law Course Materials Journal*, Feb. 2008, at 33.

the general research to create a context for the facts of the case, and judges have not required such circumspection.

For instance, Dr. Bielby, the sociologist testifying for the plaintiffs in *Dukes*, went well beyond a description of general research findings on the operation and prevalence of stereotypes and the conditions under which persons are more or less likely to rely on particular stereotypes. Dr. Bielby expressly linked general research on gender stereotyping to conditions across all Wal-Mart locations, concluding (1) that “[s]ubjective and discretionary features of the company’s personnel policy and practice make decisions about compensation and promotion vulnerable to gender bias” and (2) that “there are significant deficiencies in the company’s policies and practices for identifying and eliminating barriers to equal employment opportunity at Wal-Mart.”⁸¹ Dr. Bielby then linked his opinions about conditions at Wal-Mart to another expert’s statistical analysis of the pay and promotion disparities between female and male employees at Wal-Mart, purporting to identify specific “personnel policies and practices that contribute to those disparities.”⁸²

⁸¹ Bielby Declaration, *supra* note 2, at 5–6.

⁸² *Id.* at 15. In deciding to certify the class in *Dukes*, the district court relied heavily on Dr. Bielby’s testimony (1) that Wal-Mart had a “strong and widely shared organizational culture [that] promotes uniformity of practices,” (2) that Wal-Mart managers made decisions “with considerable discretion and little oversight” which under these conditions are likely to be biased against women due to the operation of stereotypes, and (3) that “Wal-Mart’s diversity and equal opportunity policies . . . have identifiable weaknesses that limit their effectiveness for identifying and eliminating discriminatory barriers.” *Dukes v. Wal-Mart, Inc.*, 222 F.R.D. 137, 151, 153 (N.D. Cal. 2004) (citing Bielby Declaration, *supra* note 2). Accepting these contentions, the court concluded that “Dr. Bielby’s testimony raises an inference of corporate uniformity and gender stereotyping that is common to all class members.” *Id.* at 154; see also Richard A. Nagareda, *Class Certification in the Age of Aggregate Proof*, 83 N.Y.U. L. Rev. (forthcoming 2008) (manuscript at 56–58), available at <http://ssrn.com/abstract=1247720> (discussing the importance of sociological evidence offered in *Dukes* to the class certification decision).

Similarly, the Ninth Circuit made clear that Dr. Bielby’s testimony went well beyond a description of social scientific research on gender stereotyping that would provide a context for evaluating other evidence offered in support of class certification: “Plaintiffs presented evidence from Dr. William Bielby, a sociologist, to interpret and explain the facts that suggest that Wal-Mart has and promotes a strong corporate culture—a culture that may include gender stereotyping.” *Dukes v. Wal-Mart, Inc.*, 509 F.3d 1168, 1178 (9th Cir. 2007). Nevertheless, the Ninth Circuit found Dr. Bielby’s testimony admissible—characterizing all of Wal-Mart’s objections as complaints about the persuasiveness of Dr. Bielby’s opinions rather than challenges to the scientific re-

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Dr. Bielby's testimony in *Dukes* departs from our conception of a social framework and exceeds the limits on expert framework testimony proposed above. The very idea of a social framework is to supply fact-finders with information about general social science research to provide a context or "framework" for the *fact-finder* to use when evaluating the evidence in a particular case. Thus, a social framework necessarily contains only general statements about reliable patterns of relations among variables as discovered within social scientific research, whether communicated via jury instructions or testimony of a qualified expert, and goes no further.

If the testimony of Dr. Bielby in *Dukes*, and similar testimony in other cases, clearly exceeds the limits of proper social framework testimony, as we have argued here, how is it that the district court and the Ninth Circuit in *Dukes*, as well as other courts, have found the type of social framework analysis offered by Dr. Bielby to be admissible?⁸³ The answer lies, we believe, in a confusion that has

liability of Bielby's social framework analysis—and found "no error in the district court's acceptance of Dr. Bielby's evidence to support its finding of commonality." *Id.* at 1179–80.

⁸³ The district court appeared to accept Dr. Bielby's assertion that he was following an accepted methodology by using "social framework analysis." *Dukes*, 222 F.R.D. at 191–92 ("Dr. Bielby conducted a 'social framework analysis' by combining an extensive review of documents and deposition testimony regarding Wal-Mart's culture and practices with his knowledge of the professional research and literature in the field. This is an acceptable social science methodology."), *aff'd*, 509 F.3d at 1179–80; *cf.* *Arnold v. Cargill*, 2006 WL 1716221, at *7 (D. Minn. Jun. 20, 2006) ("The Court . . . finds that Bielby's methodology [in a race discrimination case] is reliable."); *Butler v. Home Depot, Inc.*, 984 F. Supp. 1257, 1265 (N.D. Cal. 1997) ("To the extent that Professor Bielby offers conclusions [on gender discrimination at Home Depot] which lack foundation, Home Depot may attack such statements through vigorous cross-examination, presentation of contrary evidence, and requests for limiting instructions. At this juncture, however, the Court declines to exclude this evidence.").

In considering Wal-Mart's *Daubert* motion directed at Dr. Bielby at the class certification stage, the district court applied "a lower *Daubert* standard" instead of "the full *Daubert* 'gatekeeper' standard." *Dukes*, 222 F.R.D. at 191. When expert evidence is offered at the class certification stage, most courts conduct a "modified *Daubert* analysis" that examines the validity of the expert's reasoning and methodology and whether the expert's opinions properly apply to the case at hand and support a finding that common questions of fact or law exist for class certification purposes. Joseph M. McLaughlin, *McLaughlin on Class Actions* § 3.07, at 3-76 (2d ed. 2006). Even under this modified *Daubert* standard, Dr. Bielby's social framework analysis fails because it lacks a reliable, scientific basis for linking general research to the corporate setting.

arisen between “social frameworks” and “social facts.”⁸⁴

⁸⁴ Dr. Bielby and others have claimed as the foundation for their opinions the concept of social framework as developed by the first two authors. For instance, the Ninth Circuit in *Dukes* accepted Dr. Bielby’s characterization of his methods as being consistent with the social framework concept introduced by Walker and Monahan. See *Dukes*, 509 F.3d at 1178 n.3. However, the real intellectual foundation for Bielby-style “social framework analysis” was laid by Susan Fiske and Eugene Borgida, two prominent social psychologists who have served as expert witnesses in employment discrimination cases. Explicitly building on Walker and Monahan’s concept of social frameworks, Fiske and Borgida described what they called the “newer methodology of social framework analysis,” in which “[c]onclusions aggregated from the research literature are applied to particular cases.” Susan T. Fiske & Eugene Borgida, *Social Framework Analysis as Expert Testimony in Sexual Harassment Suits*, in *Sexual Harassment in the Workplace: Proceedings of New York University 51st Annual Conference on Labor* 575, 575–77 (Samual Estreicher ed., 1999); see also Jane Goodman & Robert T. Croyle, *Social Framework Testimony in Employment Discrimination Cases*, 7 *Behav. Sci. & L.* 227 (1989) (anticipating the move to social framework analysis in their discussion of how experts may link social science research to the facts of a case). Whereas Walker and Monahan expressly argued that any inferences to be drawn from the general research to the specific case should be the province of the fact-finder working within a court’s instructions, Fiske and Borgida expressly advocated that experts make such linkages for the fact-finder:

The social framework approach helps educate fact-finders about the conditions under which gender stereotypes and prejudice are likely to influence impressions, evaluations, and behavior in social and organizational settings. *The social framework testimony provides a causal link from the organizational and social context to the outcomes for the target persons.* The link between context and outcomes is the psychological processes of the actors, as revealed in their treatment of targets.

Fiske and Borgida, *supra*, at 579 (emphasis added); see also *id.* at 583 (“Experts can render opinions as to the applicability of peer-reviewed, well-established findings regarding predisposing factors and indicators of discrimination, for a particular case, given the facts at hand. Social and organizational psychologists, if they have relevant qualifications, possess valid expertise for understanding gender discrimination and helping finders of fact to think about the best available scientific information.”).

Fiske and Borgida described “social framework analysis” as a “scientifically acceptable and well-established approach to using social science evidence in litigation,” in which experts draw on their “knowledge of social psychology and the established, peer-reviewed scientific research literature . . . to analyze the facts of the particular case.” *Id.* at 577–78. They provide no scientific authority for that proposition, however, and we are aware of no peer-reviewed journal within the social sciences that treats an approach akin to social framework analysis as a valid and reliable method for reaching descriptive or causal conclusions about individual cases. Indeed, it appears that social framework analysis exists solely as a litigation method, like much expert testimony within the domain of forensics, such as fingerprint and handwriting matches. See Jennifer L. Mnookin, *Scripting Expertise: The History of Handwriting Identification Evidence and the Judicial Construction of Reliability*, 87 *Va. L. Rev.* 1723, 1742 (2001); Murphy, *supra* note 68, at 726–27; Michael J. Saks & Jonathan J.

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Dr. Bielby claimed to present a social framework, but he testified about social facts specific to Wal-Mart. Unfortunately, his social fact research into conditions and behavior at Wal-Mart did not meet the standards expected of social scientific research into stereotyping and discrimination. Rather than conduct an audit study (in which persons of different sexes with matching qualifications pose as applicants for the same job⁸⁵), a controlled experiment into the effects of stereotyping on managerial decisions at Wal-Mart, or an objective observational study of conditions at Wal-Mart, Dr. Bielby simply reviewed the litigation record in light of his understanding of what social science research shows about stereotyping.⁸⁶ Dr. Bielby's report provides no verifiable method for measuring and testing any of the variables that were crucial to his conclusions and reflects nothing more than Dr. Bielby's "expert judgment" about how general stereotyping research applied to all

Koehler, *The Coming Paradigm Shift in Forensic Identification Science*, 309 *Sci.* 892, 892 (2005).

⁸⁵ See Devah Pager, *The Use of Field Experiments for Studies of Employment Discrimination: Contributions, Critiques, and Directions for the Future*, 609 *Annals Am. Acad. Pol. & Soc. Sci.* 104, 111 (2007).

⁸⁶ Bielby Declaration, *supra* note 2, at 5 ("My method is to look at distinctive features of the firm's policies and practices and to evaluate them against what social science research shows to be factors that create and sustain bias and those that minimize bias."). Dr. Bielby reviewed deposition testimony, documents produced in discovery regarding Wal-Mart's corporate culture and personnel policy and practices, and the reports of other experts for the plaintiffs. *Id.* at 4. Consider the variables that Dr. Bielby had to assess to reach his conclusions about Wal-Mart's vulnerability to gender bias: levels and types of subjectivity, levels and types of managerial discretion, levels and types of decisionmaker accountability, levels and types of individuating information about members of the class, levels and types of diversity training, and a host of other variables that are not directly observable, such as corporate culture and perceived pressures toward uniformity across all Wal-Mart stores. See Gregory Mitchell & Philip E. Tetlock, *Antidiscrimination Law and the Perils of Mindreading*, 67 *Ohio St. L.J.* 1023, 1107–15 (2006) (discussing organizational factors that affect the incidence and impact of intergroup bias). And for each of these variables, Dr. Bielby purported to provide a nationwide assessment for the time period 1998 to 2003, describing the effects of Wal-Mart's personnel policies and practices on all female employees during this time period regardless of geographic location or the characteristics of the managers at the particular stores. See Bielby Declaration, *supra* note 2, at 5, 40–41. However, absent systematic sampling of evidence and the use of objective coding measures or multiple observers using a common coding scheme whose reliability can be measured and verified, it is simply not possible to reach any scientifically sound descriptive claims regarding conditions at Wal-Mart, much less scientifically sound claims regarding the causes of employment outcomes across groups.

managers across all of Wal-Mart's stores nationwide for the multi-year class period.⁸⁷ Social framework analysis, as exemplified by Dr. Bielby's testimony in *Dukes v. Wal-Mart*, fails as social framework, due to its improper linkage of general research to specific facts, and fails as social fact, due to its reliance on methodologically inadequate subjective judgments to make case-specific factual determinations.

We recognize that "social fact" studies of the kind that would survive Rule 702 scrutiny might be costly and might require judicial involvement to ensure access to company personnel. But this possibility does not, in our view, justify the acceptance of unscientific speculation in the form of "social framework analysis." Indeed, as advocates of the use of social scientific techniques to help resolve legal disputes,⁸⁸ we would be pleased if court restrictions on social framework testimony led to more social fact research in litigation.

CONCLUSION

The concept of social framework has grown in importance since we introduced it twenty-one years ago. The idea that courts should allow the introduction of general social science research to provide context for the determination of factual issues in litigation has met with widespread judicial and academic approval. However, experience has shown that jury instructions are rarely seen as a feasible method of communicating contextual information to juries, and that courts will typically allow general information from social science research to be conveyed to the jury by expert witnesses. Where this occurs, we believe it essential that courts limit expert testimony to a description of the findings of relevant and reliable research and of the methodologies that produced those findings, and preclude the witness from speculatively linking the general re-

⁸⁷ As discussed in Part II, the scientific method places emphasis on transparent methods and seeks to limit the subjective judgment of the scientist. Dr. Bielby's "read the file" approach to organizational assessment does not satisfy basic requirements for valid and reliable quantitative or qualitative research. See generally John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Method Approaches* (2d ed. 2003); Kimberly A. Neuendorf, *The Content Analysis Guidebook* (2002).

⁸⁸ See Walker & Monahan, *Sampling Damages*, *supra* note 34, at 568; Walker & Monahan, *Sampling Evidence*, *supra* note 4, at 970; Walker & Monahan, *Sampling Liability*, *supra* note 34, at 350.

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search findings to alleged policies and practices of a specific firm. If testimony about a specific case is to be offered by an expert, that testimony should be based on valid “social fact” research that involves the parties before the court, rather than on subjective, unscientific extrapolation from general research conducted outside the case.

The landmark class action of *Dukes v. Wal-Mart* illustrates the centrality of social framework evidence to modern employment litigation and the promulgation of social frameworks via expert testimony rather than judicial instructions. But it also illustrates the need to revisit the substance of social framework evidence and for courts to police how experts make use of the social framework concept. *Dukes v. Wal-Mart* represents a high-water mark in the influence of social frameworks, but unfortunately this influence extends well beyond what is warranted by the underlying social science.