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Reviewed work(s):

Source: *American Journal of Sociology*, Vol. 117, No. 3 (November 2011), pp. 888-954

Published by: [The University of Chicago Press](#)

Stable URL: <http://www.jstor.org/stable/10.1086/661984>

Accessed: 17/11/2011 01:24

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# When Organizations Rule: Judicial Deference to Institutionalized Employment Structures<sup>1</sup>

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This article offers a theoretical and empirical analysis of legal endogeneity—a powerful process through which institutionalized organizational structures influence judicial conceptions of compliance with antidiscrimination law. It finds that organizational structures (e.g., grievance and evaluation procedures, antiharassment policies) become symbolic indicators of rational governance and compliance with antidiscrimination laws, first within organizations, but eventually in the judicial realm as well. Lawyers and judges tend to infer nondiscrimination from the mere presence of those structures. Judges increasingly defer to organizational structures in their opinions, ultimately inferring nondiscrimination from their presence. Legal endogeneity theory is tested by analyzing a random sample of 1,024 federal employment discrimination opinions (1965–99) and is found to have increased over time. Judicial deference is most likely when plaintiffs lack clout and when the legal theories require judges to rule on unobservable organizational attributes. The authors argue that legal endogeneity weakens the impact of law when organizational structures are viewed as indicators of legal compliance even in the face of discriminatory actions.

## INTRODUCTION

On June 20, 2011, the U.S. Supreme Court ruled in *Wal-Mart v. Dukes* that a class action lawsuit against Wal-Mart brought on behalf of its

<sup>1</sup> We would like to thank the Discrimination Research Group, funded by the American

female workers, who alleged widespread discrimination in pay and promotion, could not go forward. The issue before the Supreme Court was whether there were common questions of law or fact such that the female employees could sue as a class rather than individually. Despite statistical evidence showing that women were underrepresented in management and paid less than men, and testimony by sociologist William Bielby that Wal-Mart's corporate culture and discretionary personnel practices make it vulnerable to gender bias, the court maintained that there could be no common experience of discrimination. In a 5–4 decision, with the court divided along ideological lines and Justice Scalia writing for the majority, the court held that the female employees would not be able to establish discrimination across all of Wal-Mart's roughly 3,400 stores. In reaching that conclusion, the majority placed great weight on the fact that "Wal-Mart's announced policy forbids sex discrimination." Thus, despite substantial evidence that the formal policy had little impact on actual practices at Wal-Mart, the presence of a formal policy banning sex bias was an important factor in the court's decision to shut down the class action case.

The Wal-Mart decision exemplifies judicial deference to a formal organizational policy, the phenomenon we examine in this article. If all formal organizational policies prohibiting discrimination or guaranteeing fair treatment were followed in practice, judicial deference to these policies would make sense. Sociological research, however, shows that many of these practices are more symbolic than substantive (Edelman 1992; Edelman, Erlanger, and Lande 1993; Edelman and Petterson 1999; Edelman, Uggen, and Erlanger 1999; Kalev, Dobbin, and Kelly 2006). In light of this research, judicial deference to policies like Wal-Mart's gives organizations subtle influence over the meaning of laws that regulate them.

The notion of judicial deference runs counter to traditional sociological accounts of law and organizations, which typically portray law as ex-

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Bar Foundation, the Center for Advanced Study in the Behavioral Sciences, and the Ford Foundation for an invigorating exchange that influenced many of the ideas in this article. Some of the work on this article was completed while Lauren Edelman was a fellow at the Center for Advanced Study in the Behavioral Sciences in Stanford, California, and while Linda Krieger was a fellow at the Radcliffe Institute for Advanced Study at Harvard University. We thank the National Science Foundation (SES 0651870), the University of California (UC) Committee on Research, and the UC Berkeley School of Law for providing funds for data collection and analysis. In addition, we would like to thank Gregory Alexander, Rachel Best, Susan Bisom-Rapp, Howard Erlanger, Malcolm Feeley, Rosann Greenspan, Martin Krygier, Calvin Morrill, Michael Musheno, Laura Beth Nielsen, Vicki Schultz, Robin Stryker, Shaubin Talesh, and the *AJS* reviewers for extremely helpful comments on earlier versions of this article. We also thank Rachel Best for her outstanding research assistance. Direct correspondence to Lauren B. Edelman, Center for Study of Law and Society, University of California, 2240 Piedmont Avenue, Berkeley, California 94720-2150. E-mail: leledman@law.berkeley.edu

ogenous to organizations, that is, as formed relatively autonomously from organizational actors, structures, and institutions. These approaches generally understand law as coercive, determinative, and concrete, and as imposed upon organizations by the state in a top-down fashion. The exogenous view of law is common in the organizations literature (e.g., Meyer and Rowan 1977; DiMaggio and Powell 1983; Fligstein 1990; Paternoster and Simpson 1996) and in the regulation literature (e.g., Hawkins 1984; Kagan and Scholz 1984; Vaughan 1998; Gunningham and Johnstone 1999; Kagan, Gunningham, and Thornton 2003). It also represents lay understandings of law.

In contrast, the idea of judicial deference is central to legal endogeneity theory, which contends that law acquires meaning from (and thus becomes in part endogenous to) the social arenas that it seeks to regulate (Edelman et al. 1999; Edelman 2002, 2005, 2007; Talesh 2009). This article builds upon earlier work on legal endogeneity theory by examining the extent to which courts are influenced by institutionalized organizational structures. Legal endogeneity theory articulates the process through which everyday organizational practices, routines, and structures subtly influence legal thinking, legal categories, and legal logic. It suggests that as certain organizational structures become widely institutionalized and taken for granted as rational forms of organizational governance, legal actors and legal institutions become increasingly likely to associate those structures with legal compliance. As a result, the meaning of law derives in part from institutionalized organizational structures; in other words, law becomes in part endogenous to organizations. Law is never fully endogenous to organizational fields, because legal actors also take into account constitutions, the intent of legislators, the meaning of legal texts, and other sources that are relatively internal to the legal system. However, legal endogeneity theory emphasizes the extent to which organizational structures influence the content and meaning of law.

Legal endogeneity theory is not the first approach to posit a bottom-up relationship between organizations and law. A good deal of political science and some legal scholarship points to forms of upward influence of organizations on law through lobbying and capture (Stigler 1971; Hawkins 1984; Burstein 1985; Ayres and Braithwaite 1992; Blumrosen 1993; Leech et al. 2002; Kamieniecki 2006) or through amicus briefs designed to influence judicial thinking (Krislov 1963; Songer and Sheehan 1993; Spriggs and Wahlbeck 1997; Collins 2004; Hansford 2004).

Legal endogeneity theory does not contradict extant work on lobbying, administrative capture, or influencing judicial outcomes through amicus participation; rather, it extends this work by suggesting that there is another, more subtle, path through which organizations influence law. Whereas political science and legal accounts generally portray organi-

zations as actively seeking to influence legal institutions, which then react to organizational arguments, legal endogeneity suggests that structures, practices, and ideas that become institutionalized in organizational fields slowly infiltrate legal thinking, legal categories, and legal logic. Because legal endogeneity is less visible than lobbying, capture, and direct efforts to influence courts, lawyers and judges are less likely to be aware of the advantages it accords organizations composing the regulated field.

We focus on legal endogeneity in the context of judicial decision making, an arena that is often considered less susceptible to corporate influence than are legislatures or administrative agencies. We focus on particular judicial opinions in the area of Equal Employment Opportunity (EEO) law because ambiguous statutory language and highly contested politics give organizations substantial latitude to define the meaning of EEO compliance (Edelman 1992). We show that as certain organizational structures come to symbolize fairness and rationality, judges tend to associate those structures with legal compliance, often without considering the adequacy of those structures in particular organizational circumstances.

#### FROM SOCIOLEGAL THEORY TO LEGAL ENDOGENEITY

The idea of law as endogenous builds upon work in the sociology of law that suggests that law takes form through social interaction (Macaulay 1963; Friedman 1975; Ehrlich 2002). However, whereas much of this work is vague as to the mechanisms through which society influences law, we articulate a theory in which ideas and practices that become institutionalized symbols of rationality and compliance among organizations gradually take on similar meanings in law. Our analyses also build on work in the sociology of law that emphasizes the ambiguous, contingent, and contested nature of rights (Galanter 1974; Scheingold 1974; Miller and Sarat 1981; Tushnet 1984; Edelman 1992; Stryker 2003; Pedriana and Stryker 2004; Albiston 2005) by suggesting new ways in which social processes undermine the legal rights of disenfranchised social groups.

Legal endogeneity theory also challenges arguments that law is “autopoietic” or self-referential (Luhmann 1985; Teubner 1988, 1993) by showing how law draws much of its meaning from the social realms that it seeks to regulate.<sup>2</sup> And, legal endogeneity elaborates ideas about re-

<sup>2</sup> In the autopoietic view, law is a recursive and self-referential system in which external phenomena appear primarily as legal representations, constructed in terms of legal orientations and legal imperatives. Efforts to communicate across the boundaries of such systems are regarded as hazardous or impossible. Following Luhmann (1985), Teubner does briefly mention the possibility of “cognitive openness” (1988, p. 4) but is not clear about what this means (Lempert 1988) and does not explore the mechanisms

cursivity in law, which point to the cyclical relationship between formal lawmaking and cycles of social norm making (Halliday and Carruthers 2007; Halliday 2009; Liu and Halliday 2009). As Halliday and Carruthers note (2007, p. 1144), legal endogeneity is a form of recursivity that tends to be more invisible than the more overt efforts at reform (like lobbying or capture) that are typically studied. But whereas extant work on recursivity tends to emphasize the cyclicity between formal rules and norms in practice (or law in action), legal endogeneity theory calls attention to the constitutive sources of cyclicity, as institutionalized organizational structures are gradually incorporated into legal doctrine.

The idea of law as endogenous builds most directly on work on organizational fields in neoinstitutional organization theory (Meyer and Rowan 1977; DiMaggio and Powell 1983; Meyer and Scott 1983; Powell and DiMaggio 1991; Scott 2001, 2008; Scott and Davis 2007), by suggesting that organizational practices that become institutionalized within organizational fields tend to influence the thinking of legal actors, including lawmakers, administrators, litigants, and judges (Edelman et al. 1999; Edelman 2005, 2007; Talesh 2009). Although law can never be completely endogenous to organizational fields, we suggest that organizational fields are a more powerful source of meaning in law than has previously been recognized.

The present study builds directly upon Edelman et al. (1999), which first examined judicial deference to institutionalized grievance procedures, and it extends that work in several ways. First, Edelman et al. (1999) examined legal endogeneity only with respect to grievance procedures. This study examines legal endogeneity in the context of the full range of organizational structures, some that are specific to EEO law and many that are not. Second, the earlier article used a purposive sample of cases in which employers asserted a grievance procedure defense, whereas the present study uses a random sample of EEO opinions over a 35-year period. Third, the earlier study measured only judicial deference, whereas the present study develops a more nuanced way of conceptualizing legal endogeneity, to which we now turn.

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through which cognition might influence law. In autopoiesis theory, then, law is seen as mostly autonomous in that it has an internal logic that is largely closed to social influence, whereas in endogeneity theory, law is seen as permeated by social logic and meaning. Both theories posit circularity, but autopoiesis theory imagines recursivity only within law, whereas endogeneity theory imagines law and society as mutually recursive.

### Three Progressive Stages of Legal Endogeneity

Legal endogeneity is an abstract construct, and it operates through very subtle processes, making it difficult to study empirically. However, we suggest that three stages of legal endogeneity—reference, relevance, and deference—are directly observable. Further, we suggest that the stages build upon one another and thus represent increasing levels of legal endogeneity.

#### *Reference*

As organizational structures (such as grievance procedures or employee handbooks) become more common in organizational fields, judges first simply *reference* these structures in their opinions. Parties may also begin to reference them in their briefs because they view these structures as relevant to the question of compliance with the law. Although some EEO laws may indirectly invite consideration of organizational structures, no statute explicitly requires that organizations have these structures in place as a condition of compliance. Instead, judicial reference to organizational structures reflects the extent to which these structures have become commonplace in organizational life. Reference alone represents a low level of legal endogeneity, but it is a necessary precondition for relevance and deference. Further, reference is amplified as it becomes part of the case law. As courts pay more attention to structures, those structures become an increasingly integral part of the lexicon of law, and organizations pay increasing attention to them as a result.

#### *Relevance*

Over time, judges become more likely to find institutionalized organizational structures relevant to the issue of whether illegal discrimination occurred. As with reference, *relevance* is not statutorily required: nothing in the civil rights laws we study explicitly mandates that organizations adopt any organizational structures, or states that courts should consider such structures when determining whether discrimination has occurred. Yet as employers increasingly point to organizational structures to justify their actions as nondiscriminatory, judicial opinions begin to treat these structures as relevant to determinations of legal liability. Specifically, judges begin to consider the presence of organizational structures as potentially indicative of compliance or of rational governance, and hence, of nondiscrimination.<sup>3</sup> Even when courts view these structures as relevant,

<sup>3</sup> Judges may also consider the absence of organizational structures as indicative of

however, the structure is not usually determinative of a finding of discrimination in and of itself; rather, courts consider the structure along with other forms of evidence. Relevance indicates a considerably greater degree of legal endogeneity than does reference alone, but a lesser degree than does deference.

### *Deference*

In some instances, structures become so closely associated with rationality and nondiscriminatory treatment that judges no longer scrutinize their quality or evaluate whether they actually operate to reduce discrimination. In other cases, judges ignore clear evidence that the organizational structures in a particular case fail to ensure fair or nondiscriminatory treatment. Rather, judges simply defer to the structure, assuming that the mere presence of the structure means that the organization is complying with civil rights law, irrespective of whether the structure actually protects employees from discrimination or provides a more rational, fair, and non-arbitrary system of governance. Judicial deference to organizational structures is the most extreme form of legal endogeneity: here the symbolic meaning constructed by organizations is transferred into the judicial context in a way that discourages judges from evaluating whether or not these structures function to achieve legal ideals.

### *Summary and Example*

Reference, relevance, and deference should be understood as progressive stages of legal endogeneity. "Reference" indicates that organizational structures have entered the judicial lexicon, "relevance" suggests that organizational structures are treated as theoretically relevant to judicial evaluations of whether a legal violation has occurred, and "deference" occurs when organizational structures have become so closely associated with compliance that judges fail to scrutinize the adequacy or quality of the structures.

To clarify these constructs, consider *Little v. Republic Refining Co.* (1991), a case in which reference, relevance, and deference all occur. Ralph Little was hired in 1982 by Republic Refining Company in Puckett, Mississippi. He had twice been promoted and by 1986 was a supervisor in charge of maintenance activities. In July 1986, he was terminated at age

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discrimination. However, because there is no direct analogy to deference for cases in which the absence of the structure is discussed, we restrict our attention in this article to judicial attention to structures that are present in organizations. Including instances where judges noted the absence of structures, of which there were only 161 (in 118 cases), did not change the results but did present interpretation problems for deference.



61 and replaced by Carl Turner, age 39. Little filed suit, alleging discrimination in violation of the Age Discrimination in Employment Act (ADEA), and Republic countered that Little had been fired because of poor job performance (as measured by a formal evaluation procedure) and pursuant to a reduction in force (RIF). The jury at the district court level returned a verdict for Little, awarding him \$94,738. The district court, however, granted Republic's motion for a "judgment notwithstanding the verdict" (JNOV), which in essence disregards the jury verdict and finds in favor of the losing party. Little appealed, and the Fifth Circuit reviewed its decision, considering the facts and law *de novo*.

The circuit court referenced an organizational structure, the formal evaluation procedure, when it took for granted the employer's use of its evaluation procedure could be a basis for RIF selection. The court made the structure relevant to the question of discrimination when it noted that the employer's alleged nondiscriminatory reason for discharging the employee was that the employee (along with another employee) had ranked lowest in a series of evaluations using the evaluation procedure. The court deferred to that structure when, in spite of evidence that undermined the accuracy of the employer's evaluations (including the evaluating supervisor's testimony that he was pleased with appellant's performance and would not have terminated him), the court upheld the district court's finding in favor of the employer, noting that "even an incorrect belief that an employee's performance is inadequate constitutes a legitimate, non-discriminatory reason." In this case, then, the court deferred to the employer's use of its own evaluation structure, even though there was clear evidence, which was recognized by the jury in the district court case, that the employer acted in a discriminatory manner.

#### A NEOINSTITUTIONAL THEORY OF JUDICIAL BEHAVIOR

At first blush, it might appear that judicial deference to institutionalized organizational structures is a natural result of the formal law. However, EEO statutes do not explicitly specify that organizations must create particular structures like grievance procedures, training programs, or progressive discipline policies. If the formal law does not mandate particular organizational structures, how is it that courts come to see these structures as an important part of compliance with civil rights law? To answer this question, we offer a neoinstitutional theory of judicial behavior. First, however, we briefly review extant theories of judicial behavior.

### Prior Accounts of Judicial Decision Making

There is a large literature on judicial decision making, mostly by political scientists. Although a complete review of this literature is beyond the scope of this article, we offer a brief overview of existing theory to show how our institutional theory differs from and extends previous work.

The traditional or “legal” model of judicial decision making posits that judges decide cases based on the facts, the law, judicial norms regarding precedent (*stare decisis*), and perhaps public policy (see Segal and Spaeth 1996, 2002; Cross 1997, 2003). In this view, judges—and courts—stand as impartial and autonomous institutions unswayed by political, economic, or social interests. They are “law finders” rather than “lawmakers,” simply applying existing law to the facts of the case at hand. At least since the advent of legal realism, however, sociolegal scholars have been skeptical of this view, suggesting that judicial decisions depend as much on their policy preferences and social biases as on precedent. As Oliver Wendell Holmes put it, the law is nothing more than “the prophecies of what courts will do” (Holmes 1897, pp. 460–61).

More recently, sociolegal scholars, and political scientists in particular, have developed much more nuanced theories to explain judicial behavior, albeit almost entirely in the context of the U.S. Supreme Court, and to some extent, appellate courts. Scholars who adopt attitudinal models of judicial decision making contend that judges decide cases in part based on their ideological attitudes and values, not solely on the facts and the law (Segal and Cover 1989; Baum 1992; Segal and Spaeth 1993, 1996, 2002; Spaeth and Segal 1999). Strategic theorists also look to judges’ ideological preferences but employ quantitative and game theoretic approaches to examine how judges strategically further those preferences within institutional constraints (Knight and Epstein 1996; Cross and Tiller 1998; Epstein and Knight 1998, 2000; Wahlbeck, Spriggs, and Maltzmann 1998). Historical-institutionalists in political science take a somewhat different and more interpretive approach that focuses on the contexts, traditions, norms, and cognitive structures that help constitute actors’ preferences and judicial behavior (Gillman and Clayton 1999; Maveety 2003; McGuire 2004).<sup>4</sup>

In contrast to the vast amount of work on Supreme Court decision making, there has been relatively little work on trial court decision making. One important exception is Feeley and Rubin (1999), who suggest

<sup>4</sup> Strategic and historical-institutional perspectives together are sometimes labeled “new institutionalist” perspectives by political scientists (see Maveety 2003, p. 25). New institutionalism in political science, however, is not entirely the same as the sociological new institutionalism employed in this article. For an excellent discussion of the shifting meaning of “new institutionalism” across disciplines, see Powell and DiMaggio (1991).

that trial court judges engage in purposive policy making, and in doing so often embrace concepts and ideas that have been developed in other social arenas. Focusing on the arena of prison reform litigation, Feeley and Rubin argue that judges in these cases examined the extent to which prison systems embrace their own conception of prison goals, thus in a sense deferring to the organizational priorities. This conception of judicial decision making has elements in common with the institutional perspective on judicial decision making that we discuss in the following section, although we argue that institutionalized organizational ideas affect judicial decision making in contexts other than purposive policy making.

### An Institutional Perspective on Judicial Decision Making

The institutional model of judicial decision making does not contradict or supplant the political science models of judicial decision making, which are well supported by empirical evidence. Indeed, political and institutional processes often coexist and should be taken into account in any theoretical explanation (Edelman and Stryker 2005; Talesh 2009). We do suggest, however, that extant accounts of judicial decision making fail to capture important attributes of the institutional environment that shape judicial behavior. Drawing on the neoinstitutional theory in sociology, we suggest that characteristics of the institutional environments in which judges work are important determinants of judicial decision making and ultimately lead to legal endogeneity.

Institutional theory employs the construct of “organizational fields” to explain organizational structure and behavior (DiMaggio and Powell 1983; Powell and DiMaggio 1991; Scott 2001, 2008). Organizational fields consist of a set of normative models and rules that influence organizational behavior. These norms and rules evolve from state entities, from the norms of professionals within and around organizations, and from patterns of organizational behavior that become so prevalent that their rationality and propriety are taken for granted rather than based on any objective evidence,<sup>5</sup> such as cost effectiveness. Recent work in neoinstitutional theory suggests that organizational fields tend to be characterized by multiple logics that may be contradictory, overlapping, and mutually influential (Friedland and Alford 1991; Heimer 1999; Scott et al. 2000; Stryker 2000, 2003; Schneiberg 2002; Lounsbury, Ventresca, and Hirsch 2003; Schnei-

<sup>5</sup> Throughout this article, we use the term “rational” in the Selznickian sense, i.e., to refer to organizational structures or practices that are grounded in reason in a way that reduces managerial or bureaucratic arbitrariness, rather than in economic sense of the word, that is, to refer to structures that are cost effective (Selznick 1969; cf. Weber’s conception of bureaucratic authority as legal-rational in Gerth and Mills [1946]).

berg and Soule 2004; Schneiberg and Clemens 2006; Edelman 2007; Morrill 2009). The notion of overlapping fields with multiple logics suggests a mechanism through which ideas that become institutionalized within organizational fields come to influence judicial decision making.

### *The Legalization of Organizational Fields*

Organizational fields become legalized as organizations respond to their legal environments by creating symbolic compliance structures such as grievance procedures, affirmative action and diversity offices, and sexual harassment policies, as a way of demonstrating attention to legal norms (Edelman 1990, 1992). Over time, these compliance structures diffuse and become institutionalized, and organizations that do not adopt them begin to look suspect. Further, as legal environments construct formal rule-bound governance as rational, organizations tend to formalize all aspects of organizational governance, adopting not only compliance structures but also formal governance structures such as human resources offices, internal labor markets, progressive discipline, and evaluation procedures (Baron, Dobbin, and Jennings 1986; Dobbin and Sutton 1998), as well as other formal employment practices, such as market-based pay systems (Nelson and Bridges 1999). In this way, principles that are institutionalized within legal fields infiltrate and legalize organizational fields.

Organizations' symbolic structures are not necessarily effective, however, in achieving legal goals. Studies of the effectiveness of these structures raise serious concerns about the capacity of these structures to improve the workforce status of women and minorities. Two early studies (Baron, Mittman, and Newman 1991; Edelman and Petterson 1999) found that structures such as EEO offices and rules have virtually no impact on the workforce representation of women and minorities and that some affirmative action plans may even adversely affect women. A more thorough analysis made possible by the recent release of Equal Employment Opportunity Commission (EEOC) data to social scientists finds that some structures (those that establish authority and accountability, such as affirmative action plans, diversity staff, and diversity committees) can be effective in increasing the proportions of white and black women and black men. However, other structures, such as mentoring and networking programs and diversity training, had no significant impact (Kalev et al. 2006).

Several features of organizations help to explain why many organizational structures fail to reduce discrimination. First, studies of complex organizations show that organizations' informal cultures and structures often deviate substantially from their formal policies (Roethlisberger and Dickson 1939; Selznick 1949, 1957; Burawoy 1979; Edwards 1979; Gor-

don, Edwards, and Reich 1982; Scott and Davis 2007). Whether due to culture, informal structure, or overt intent, organizational structures are often “decoupled” from organizations’ core activities and therefore rendered merely symbolic (Weick 1976; Dobbin et al. 1988; Brunsson 1989; Orton and Weick 1990; Edelman 1992; Edelman and Petterson 1999; Sutton and Dobbin 1996). For example, organizations may adopt anti-discrimination policies but fail to revise their standard operating procedures to eliminate practices that violate those policies. They may create special compliance offices but give officers no authority to change practices; they may charge in-house counsel with monitoring compliance but exclude them from high-level organizational decision making (Stone 1975; Edelman 1990; Chambliss 1996; Edelman and Suchman 1999). In some cases, internal legal structures actually help organizations to *evade* legal constraints through contracts that waive legal protections, dispute resolution that undermines legal goals, and lawyers who collude with managers to put business goals above legal goals (Edelman et al. 1993; Suchman and Cahill 1996; Edelman and Suchman 1999; Nelson and Nielsen 2000).

Another reason is more subtle: when rights are articulated, adjudicated, and implemented through internal organizational structures, the law tends to become managerialized, or infused with business logic (Edelman et al. 1993; Edelman, Fuller, and Mara-Drita 2001). The managerialization of law is particularly clear in the case of organizational grievance procedures, where internal dispute handlers tend to recast discrimination complaints as typical managerial problems (e.g., poor management or interpersonal difficulties) rather than as legal violations, and to remedy those problems with managerial solutions (e.g., training programs, transferring the grievant, providing counseling) rather than through formal recognition of legal rights violations (Edelman et al. 1993; Edelman and Cahill 1998; Edelman and Suchman 1999; Albiston 2005). Managerialization also occurs as organizations build discretion into rules that are designed to implement laws (Edelman et al. 1991; Edelman and Suchman 1999) and when organizations create rules explicitly to evade law (Edelman 1992; Edelman and Suchman 1999; Sutton and Dobbin 1996). In-house counsel can be important players in the managerialization of law as they act as entrepreneur and strategic advisor, helping organizations to use the law to best serve their interests, rather than as cautionary checks on potentially illegal organizational actions (Rosen 1989; Suchman and Cahill 1996; Nelson and Nielsen 2000). Finally, managerialization also occurs through managerial rhetoric or new models of management that infuse legal constructs with managerial ideas. During the 1980s and 1990s, for example, managerial rhetoric helped to transform the notion of “diversity” so that it became partially disassociated from the legal ideal of equitable racial

and gender representation and transformed into a managerial ideal in which varying backgrounds and viewpoints of a diverse workforce could be harnessed for productive purposes (Edelman et al. 2001).

Neoinstitutional theories of law and organizations, then, suggest that as organizational structures become more prevalent, they acquire an aura of both rationality and legality that is independent of their actual impact on the rights or workforce status of employees (Dobbin et al. 1988; Edelman 1990, 1992; Edelman et al. 1999). Only close scrutiny of how those structures operate in particular organizations can reveal the extent to which these institutionalized structures actually promote legal ideals, both broad legal principles such as due process and the more substantive policies of antidiscrimination law. Yet, as we argue below, the institutionalization of organizational structures encourages judges to assume rather than to scrutinize the effectiveness of these structures.

### *The Managerialization of Legal Fields*

Just as organizations exist within organizational fields, courts exist within legal fields (Edelman et al. 2001; Edelman 2007). Legal fields comprise courts, legislatures, administrative agencies, legal academia, and all legal actors, as well as the various parties that enter into the legal system on an occasional basis. There is substantial overlap between organizational and legal fields because organizations and organizational actors are regular participants in the legal process (Edelman and Suchman 1997, 1999). Through this interplay, the boundaries of these fields tend to blur, and their logics tend to merge (Edelman et al. 2001; Edelman 2007). This merging of logics occurs in many ways: through the regular interplay of lawyers and personnel professionals; through the role of lawyers in arranging organizational transactions; through employers' introduction of organizational structures as defenses to allegations of legal violations; and through interactions among judges, lawyers, and other legal actors functioning in and through organizational fields. Ultimately, ideas about the legality and rationality of organizational structures, such as grievance procedures, antiharassment policies, employee handbooks, and multiperson decision-making processes, tend to flow into legal fields and to influence the thinking of lawyers, judges, and juries.

Lawyers play a particularly salient role in transferring ideas from organizational fields into legal fields. Defense lawyers help to create and reinforce assumptions about the fairness and rationality of employers' legal structures when they (increasingly) point to their clients' institutionalized structures as evidence of compliance and cite precedents that legitimate those structures (Bisom-Rapp 1999). The defense bar, along with employers and human resource professionals, in fact engage in a

concerted effort to establish these structures as the standard for compliance (Bisom-Rapp 1999; Edelman et al. 1999; Krawiec 2003, 2005) and encourage their clients to adopt them when they provide legal advice about compliance even outside of litigation. Plaintiffs' lawyers participate in the legitimization of these structures when they discourage employees from pursuing their cases because the organization has structures in place that make it look nondiscriminatory (Bisom-Rapp 1999). Lawyers (especially plaintiffs' lawyers) reinforce the idea that organizational structures constitute fair and legal treatment of employees when they fail to challenge inadequate or sham organizational structures in the context of litigation.

As employers, managers, employees, and lawyers all come to see organizational structures as indicators of rational governance, fair treatment of employees, and, ultimately, compliance with civil rights law, it is not surprising that judges would also make assumptions about the rationality and legality of these structures. Just as employers tend to take cues from norms and practices in their legal environments, judges tend to take cues from norms and practices that become institutionalized in organizations. Judicial decision making, then, should be understood, in part, as a function of the legal fields within which judges live and work. Since those legal fields overlap substantially with organizational fields, judges are highly susceptible to ideas about the rationality of organizational structures that become institutionalized within organizational fields.

Judicial acceptance of institutionalized organizational structures also occurs in part because courts presume that nondiscrimination is the norm and, conversely, that discrimination is an aberrant condition that exists only when employers or their agents do something that is wrong, unprofessional, and irrational.<sup>6</sup> This presumption, which is common throughout antidiscrimination doctrine, is reflected, for example, in the U.S. Supreme Court's statement in *Furnco Construction Co. v. Waters* (1978) that it is only "when all legitimate reasons . . . have been eliminated as possible reasons for the employer's actions" that "it is more likely than not the employer . . . based his decision on an impermissible consideration such as race." The legal presumption that discrimination is an aberration leads courts to look for signs or symptoms of employer legitimacy or rationality (Krieger 1995). If only "irrational" employers discriminate, and "rational"

<sup>6</sup> This assumption contradicts considerable social science research that suggests that much discrimination is unconscious and unintended (Greenwald and Banaji 1995; Krieger 1995; Gaertner and Dovidio 1997, 2000; Stangor 2000; Banaji, Nosek, and Greenwald 2004; Greenwald and Krieger 2006; Krieger and Fiske 2006), built into the structure of society as "institutional racism" (Haney Lopez 2000), or due to structural factors such as the lack of a critical mass of underrepresented employees (Kantor 1977; Schultz 2003).

employers adopt institutionalized structures, then the presence of structures associated with rationality supports an inference of nondiscrimination.

Judges are likely to be unaware of the extent to which organizations decouple formal structures from core activities or infuse managerial interests and objectives into the interpretation and implementation of formal policies and procedures. They are equally unlikely to be aware of empirical research questioning the efficacy of structures that appear fair and rational (Baron et al. 1991; Edelman et al. 1993; Edelman and Petterson 1999; Kalev et al. 2006). Thus, judges are unlikely to recognize instances where employers' legal structures fail to protect legal rights, or in some case, even thwart those rights. Because employers' legal structures look superficially like legal institutions (organizational policies and rules look like legal rules, grievance procedures look like judicial proceedings, etc.) and give organizational governance an aura of rationality, the legitimacy of these structures seems obvious, and judges often fail even to question whether these organizational structures actually operate to reduce discrimination (cf. Meyer and Rowan 1977; DiMaggio and Powell 1983). As a result, these structures can create the appearance of compliance even when they fail to achieve legal goals (Edelman 1992). Rather than assessing whether or not discrimination occurred based on the close scrutiny of the facts in each case, institutionalized organizational structures become a heuristic from which judges (often unwittingly) infer nondiscrimination. The problem is that this heuristic is often inaccurate: organizational structures may appear to promote fair treatment and rational governance while failing to do so in reality.

Recent empirical work in psychology helps to explain why institutionalized ideas may have such a powerful effect on judges. Guthrie, Rachlinski, and Wistrich (2007, p. 5) argue that, in contrast to the formalist suggestion that judges are deliberative decision makers or the realist contention that judges used their decisions to rationalize their preferences (cf. Leiter 1999; Bix 2006), "judges are predominantly intuitive decision makers, and intuitive judgments are often flawed." Guthrie et al. suggest that intuition tends to be quick, automatic, and heuristic based and, therefore, highly subject to error. Taken together with sociological work on institutionalization, this work suggests that institutionalized ideas about organizational structures will easily influence judicial decisions.

### *Legal Endogeneity and Judicial Decision Making*

The endogeneity of law, then, occurs as ideas about law and compliance, which have become managerialized through organizational fields, influence, and eventually become institutionalized within, legal fields. As or-



ganizational structures become increasingly associated with fair treatment and rational governance within organizational fields, they are more likely to be seen as evidence of compliance by actors in legal fields. Lawyers who represent employers increasingly invoke those structures as evidence of fair and rational governance, and lawyers who represent employees may discourage potential plaintiffs where those structures exist, which reinforces the notion that these structures constitute compliance with civil rights law. Judges, as participants in the same social environment, also become more likely to associate these structures with organizational governance that is fair, rational, and nondiscriminatory—leading them to become increasingly likely to refer to those structures, to find them relevant to the legal issues, and to defer to those structures without adequate scrutiny.

The endogeneity of law, moreover, is an iterative process. Every time a court treats an organizational structure as evidence of nondiscrimination, those structures acquire greater legal legitimacy, both within organizational communities and within the legal community. That legal legitimacy, in turn, encourages further legitimacy within organizational fields and a greater likelihood that the structures will be invoked in court. The iterative nature of the institutionalization process suggests that, over time, courts will become increasingly likely to infer nondiscrimination from organizational structures.

The institutionalization of organizational structures in legal as well as organizational fields gives employers a form of power that has not previously been recognized in either the sociology of organizations or the sociology of law. Organization theorists recognize the power of employers over employees within organizations, organizational fields, and society generally (Marx 1954; Edwards 1979; Pfeffer 1981; Gordon et al. 1982; Perrow 1986; Clegg 1990), but they tend to see the legal realm as a neutral terrain for the resolution of disputes (see discussion in Suchman and Edelman 1996). Sociologists of law pay less attention to the power dynamics within organizations but are more likely to see legal terrain as subject to power, emphasizing organizations' power over individual litigants in legislatures (Burstein 1985), in the courtroom (Galanter 1974; Albiston 1999; Edelman and Suchman 1999; Stryker 2007), and in alternative dispute resolution (Edelman and Cahill 1998; Edelman and Suchman 1999). The type of power suggested by legal endogeneity theory is far more subtle and affects all actors within organizational and legal fields. As law becomes managerialized by condoning and legitimating organizational structures that symbolize but often fail to achieve legal goals, employers gain a form of hegemonic power within legal fields that reinforces their power in organizational fields.

### Hypotheses about Legal Endogeneity

In this section, we discuss hypotheses about legal endogeneity and, more precisely, about the three components of legal endogeneity discussed earlier: *reference* to institutionalized organizational structures in judicial decisions, the *relevance* of institutionalized organizational structures to judicial decision making, and judicial *deference* to institutionalized organizational structures. Our hypotheses draw on the neoinstitutional theory discussed above (which pertains mostly to the institutionalization of organizational structures over time) and on law and society scholarship (which offers theoretical and empirical accounts of the factors that may explain variation in reference, relevance, and deference), as well as on characteristics of legal doctrine.

#### *Time*

Neoinstitutional theory suggests that legal endogeneity will increase over time, as organizational structures become increasingly institutionalized not only within organizational fields but also within legal fields. As this happens, judges will become more likely to refer to these structures in their written opinions, to treat these structures as relevant to the legal outcome, and to defer to the structures. This argument suggests that reference, relevance, and deference should increase over time. In fact, however, reference may increase over time only to the extent that the structures we are examining become institutionalized during the observation period.

#### *Plaintiff Characteristics*

Extant sociolegal literature suggests that parties with greater social status enjoy considerable advantages in the legal process (Mayhew and Reiss 1969; Galanter 1974; Balbus 1977; Bumiller 1988; Crenshaw 1989; Sarat 1990; White 1990; Williams 1991; Seron and Munger 1996; Albiston 1999; Bobo and Suh 2000; Wakefield and Uggen 2004). Research shows that minorities and the poor face substantial obstacles in mobilizing legal rights ranging from psychological and structural barriers to filing claims (Feltiner, Abel, and Sarat 1981; Burstein and Monaghan 1986; Bumiller 1988; Gwartney-Gibbs and Lach 1994; Nielsen and Nelson 2005; Hirsh and Kornrich 2008) to weaker legal counsel (Galanter 1974; Heinz et al. 2005) to structural aspects of litigation that disadvantage parties that lack social clout (Galanter 1974; Albiston 1999; Wakefield and Uggen 2004). Galanter (1974) shows how repeat players (almost always advantaged parties) play for stronger rules. Similarly, Albiston (1999) shows that employers tend

to settle cases that would create weak precedent and to litigate cases that would create strong precedent. Formal rights to equality, therefore, fall far short of their mark when it comes to remedying the social disenfranchisement of minorities, women, and other disadvantaged social groups (Galanter 1974; Scheingold 1974; Tushnet 1984; Crenshaw 1989; Williams 1991; Edelman 1992; Seron and Munger 1996; Albiston 2005; Stryker 2007). Since many of these disadvantages operate throughout the litigation process, we expect that deference will be more likely in cases involving female and minority plaintiffs and less likely in cases involving more powerful plaintiffs (government organizations, union members, and managers or professionals).

### *Legal Theories*

As mentioned earlier, no statutes require organizations to defer to institutionalized organizational structures. However, to the extent that legal theories make organizational structures salient, one would expect greater reference to and relevance of those structures. To explain how judges may come to see institutionalized organizational structures as relevant to law, even when statutes do not explicitly mandate these structures, we provide a very brief discussion of the relevant civil rights law.

Federal civil rights statutes prohibit employment discrimination based on certain protected characteristics. The statutes we focus on in this study include: Title VII of the Civil Rights Act of 1964 (hereafter Title VII), which prohibits discrimination on the basis of race, color, sex, national origin, and religion; the Age Discrimination in Employment Act of 1967 (ADEA), which prohibits employment discrimination based on age (40 or older); the Equal Pay Act (EPA), which prohibits gender-based wage disparity for equal work; and two post-Civil War civil rights statutes: 42 U.S.C. §1981, which prohibits race discrimination in the making and enforcement of contracts,<sup>7</sup> including employment contracts, and 42 U.S.C. §1983, which provides a statutory basis for asserting violations of the Equal Protection Clause of the Fourteenth Amendment, including those involving alleged employment discrimination.

These statutes prohibit discrimination in employment, but they do not

<sup>7</sup> Under judicial doctrine interpreting §1981, race is defined by the standards of the Reconstructionist Era. Thus, the definition of race under this statute is broader than it is under Title VII. In *St. Francis College v. Al-Khazraji* (1987), the Supreme Court held that (in passing §1981 during the Reconstruction Era), “Congress intended to protect from discrimination identifiable classes of persons who were subjected to intentional discrimination solely because of their ancestry or ethnic characteristics. Such discrimination is ‘racial discrimination’ that Congress intended Section 1981 to forbid, whether or not it would be classified as racial in terms of modern scientific theory.”

define the term “discrimination.” Courts developed several theories of discrimination, which have different implications for how judges should think about organizational structures. Two theories in particular—disparate treatment theory and sexual harassment theory—provided openings for organizational ideas about compliance and rationality to influence judicial thinking without actually mandating the structures.

*Disparate treatment theory.*—The most common type of discrimination case involves allegations that the employer treated an applicant or employee unfavorably because of that person’s membership in a protected class. The theory that courts use to address these types of cases is called disparate treatment theory. Disparate treatment cases generally focus on the question of whether the employer *intended* to discriminate. Although nothing in the text of Title VII or any of the other civil rights statutes explicitly discusses intent to discriminate, the Supreme Court held in *McDonnell Douglas Corporation v. Green* (1973) that to prevail in an individual disparate treatment case, a plaintiff must prove discriminatory intent.<sup>8</sup> Subsequent cases placed increasing emphasis on requiring the plaintiff to prove the state of mind of a discriminating employer.<sup>9</sup> The increasing focus on intent results largely from the fact that, since the enactment of Title VII, fewer employers have risked making explicitly racist or sexist statements, so discriminatory intent must generally be proven inferentially from circumstantial evidence.

By centering attention on intent to discriminate—an unobservable trait—disparate treatment theory provides an opening for organizational structures that symbolize compliance, fair treatment, or rational governance to become proxies for the absence of intent to discriminate. As the symbolic value of these structures comes to be taken for granted, lawyers

<sup>8</sup> To prove intent, the plaintiff must establish a prima facie case, or raise an inference, of discrimination. Once the plaintiff has established the elements of a prima facie case, the onus shifts to the employer to articulate some “legitimate, nondiscriminatory reason” for its action. If the employer does so, the plaintiff must be afforded an opportunity to show that the reason given by the employer was pretextual, a “cover-up” for a discriminatory decision.

<sup>9</sup> For example, in *Texas Dept. of Community Affairs v. Burdine* (1981, pp. 253, 255), the court clarified the allocation of the burden of proving intent to discriminate in a disparate treatment case, holding that the burden that shifts to the defendant after the plaintiff’s establishment of the prima facie case is merely a burden of coming forward with evidence, and not a burden of persuasion. The plaintiff maintains the burden of proving intent to discriminate at all times. The court revisited the issue of disparate treatment proof two years later in *United States Postal Service Board of Governors v. Aikens* (1983). In *Aikens*, the court held that once an employer had offered evidence of a legitimate nondiscriminatory reason for a challenged decision, the legal analysis should shift away from the elements of the prima facie case and move to the ultimate question of discriminatory intent. The court’s 1983 decision in *Aikens*, then, placed the court’s focus squarely on the question of discriminatory intent.

become more likely to invoke them as evidence of nondiscrimination. Judges, in turn, become more likely to find the structures legally relevant and to defer to them as indicators of compliance. Thus, we expect that there will be greater relevance and deference when structures that are invoked in the context of a disparate treatment analysis than in other contexts.

*Sexual harassment theory.*—In sexual harassment cases, the courts have, since the mid-1980s, explicitly encouraged organizations to create certain policies and practices by suggesting that such policies could (and in later cases, would) help insulate organizations from liability and/or damages. In *Meritor Savings Bank v. Vinson* (1986), the Supreme Court recognized two theories of sexual harassment liability, quid pro quo and hostile work environment, which had been developed in the lower courts during the previous 10 years. Employers may be liable for quid pro quo harassment when a supervisor uses authority delegated by the employer to inflict a tangible job detriment in retaliation for the refusal of sexual advances or conditions a job benefit (such as a promotion) on acquiescence to sexual advances.<sup>10</sup> Since the employer is vicariously liable for the supervisor's actions, there is no room for the organizational structures to influence judicial opinions under the quid pro quo theory.

Under hostile work environment theory, however, employers may be liable when there is a "hostile or abusive work environment" that is "sufficiently severe or pervasive" so as to alter the plaintiff's conditions of employment (*Burlington Industries, Inc. v. Ellerth* 1998, p. 67). In contrast to the vicarious liability standard in quid pro quo harassment, the court suggested in *Meritor* that employers are not automatically liable for the harassing actions of their supervisors if the employers have no notice of a hostile work environment. Although the court did not issue a definitive rule on employer liability for hostile environment harassment in *Meritor*, it implied that an employer might escape liability through the presence of a reasonable and effective grievance procedure. In making that point, the court referred to (but did not formally adopt) the EEOC's 1980 guidelines on sexual and other forms of harassment, which had endorsed the establishment of organizational internal grievance procedures as a way of combating harassment.<sup>11</sup> The court, however, noted that *Meritor Sav-*

<sup>10</sup> *Burlington Industries, Inc. v. Ellerth* (1988). Under quid pro quo theory, the sexual harassment is attributable to the employer regardless of notice or antiharassment policies and procedures.

<sup>11</sup> The 1980 EEOC guidelines, which would have been in effect at the time of *Meritor* in 1986, do not instruct employers to adopt official policies grievance procedures. Some suggestions are offered in C.F.R. §1604.11(f), but the entry in the Federal Register explicitly states that these suggestions are meant only to "illustrate several kinds of action which might be appropriate" and that "since each workplace requires its own

ings Bank's grievance procedure was so defective that it could not possibly have insulated the employer from liability.<sup>12</sup> Nonetheless, by suggesting that a more effective grievance procedure could have allowed the employer to avoid liability,<sup>13</sup> the *Meritor* court led employers in numerous subsequent cases to argue that their grievance procedures *should* insulate them from liability (Edelman et al. 1999).

Twelve years later, in *Faragher v. City of Boca Raton* (1998) and *Burlington Industries, Inc. v. Ellerth* (1998), the court considerably strengthened its endorsement of organizational antiharassment policies and grievance procedures. In these cases, the court held that an employer may be held vicariously liable for an actionable hostile work environment created by a supervisor in the victim's chain of command. However, if there has been no tangible employment action (e.g., demotion, discharge, or undesirable reassignment), the employer may raise an affirmative defense

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individualized program to prevent sexual harassment, the specific steps to be included in the program should be developed by each employer." In its amicus brief in *Meritor*, the EEOC, its then-existing 1980 guidelines notwithstanding, urged the Supreme Court to adopt a rule requiring that a Title VII plaintiff should be required to have utilized an existing internal grievance procedure, so long as that procedure met certain standards of "user-friendliness" (Brief for the United States and the Equal Employment Opportunity Commission as Amici Curiae, *Meritor Savings Bank v. Vinson* 1986, p. 29). Although the guidelines were rewritten in 1999 following the Supreme Court's decisions in *Faragher* and *Ellerth*, which make the existence of grievance procedures and policies an affirmative defense in hostile environment harassment cases, the language of §1604.11(f) did not change. Although the 1999 *Compliance Manual* still had no direct instructions to create grievance procedures or policies, the *Manual* does encourage organizations to "take all steps necessary to prevent sexual harassment from occurring, such as affirmatively raising the subject, expressing strong disapproval, developing appropriate sanctions, informing employees of their right to raise and how to raise the issue of harassment under Title VII, and developing methods to sensitize all concerned" [§1604.11(f)]. The EEOC Web site <http://www.eeoc.gov/eeoc/publications/fs-sex.cfm> (accessed September 3, 2011) does mention the value of sexual harassment training and an effective grievance process: "Prevention is the best tool to eliminate sexual harassment in the workplace. Employers are encouraged to take steps necessary to prevent sexual harassment from occurring. They should clearly communicate to employees that sexual harassment will not be tolerated. They can do so by providing sexual harassment training to their employees and by establishing an effective complaint or grievance process and taking immediate and appropriate action when an employee complains." The gradual change in EEOC approach is, in our view, completely consistent with the endogenous construction of law.

<sup>12</sup> The court noted that while the existence of a grievance procedure and an antidiscrimination policy were "plainly relevant," the bank's policy did not refer to sexual harassment specifically, and the grievance procedure required the employee to complain to her first-line supervisor, who was, in fact, her harasser (*Meritor Savings Bank v. Vinson* 1986, pp. 72–73).

<sup>13</sup> The specific language was: "Petitioner's contention that respondent's failure should insulate it from liability might be substantially stronger if its procedures were better calculated to encourage victims of harassment to come forward" (*Meritor Savings Bank v. Vinson* 1986, p. 73).

to liability or damages.<sup>14</sup> The defense requires the employer to show that (1) the employer exercised reasonable care to prevent and promptly correct any sexually harassing behavior, and (2) the employee unreasonably failed to take advantage of any preventive or corrective opportunities provided by the employer or to avoid harm otherwise (*Burlington Industries, Inc. v. Ellerth* 1998, p. 765; *Faragher v. City of Boca Raton* 1998, p. 807). The court specifically mentioned that an antiharassment policy with a complaint procedure, although “not necessary in every instance as a matter of law,” would address the first element of the defense (*Faragher v. City of Boca Raton* 1998). Hostile work environment theory, then, has evolved in a way that encourages employers to offer the presence of grievance procedures and formal policies as an affirmative defense, but the doctrine specifies that the policies must be effective to insulate employers. Thus, we expect that there will be greater reference and relevance, but not deference, when structures are invoked in the context of a hostile work environment analysis.

### *Judicial Politics*

As discussed earlier, a substantial literature in political science suggests that judges’ political preferences are critical to explaining judicial decision making (Segal and Cover 1989; Baum 1992; Segal and Spaeth 1996, 2002). This literature, broadly speaking, suggests that more conservative judges would tend to favor employers while more liberal judges would tend to favor employees (e.g., Schultz 1990; Segal and Spaeth 1993; Pinello 1999; Sunstein, Schkade, and Ellman 2004; Sunstein et al. 2006). In contrast, legal endogeneity theory would predict that both conservative and liberal judges would be subject to institutionalized ideas about organizational structures, which may reduce the difference between liberal and conservative judges. However, because institutionalized structures symbolize fair treatment, it is also possible that liberal judges would be more impressed with these structures and would defer more frequently. Thus, we do not offer a hypothesis about the effect of judicial politics, but we do include a judicial politics variable in our models.

<sup>14</sup> However, if the harasser is a senior officer high enough in the organization to control the policies of the employer, he is considered “the employer” for purposes of Title VII. In this situation, liability automatically attaches, and “the employer” is liable even if there is a formal policy prohibiting the harassment (*Harris v. Forklift Systems, Inc.* 1993; *Ackel v. National Communications, Inc.* 2003).

*Summary Judgment*

We also control for whether the opinion constituted a court's ruling on a motion for summary judgment. In these motions, the moving party (almost always the employer/defendant) argues that the undisputed facts show that the plaintiff's case is so weak that no reasonable jury would be able to find in his or her favor, and that the court should therefore decide the case in the moving party's favor as a matter of law. The court must evaluate this motion in the light most favorable to the nonmoving party, almost always the plaintiff in employment discrimination cases. From a legal standpoint, this standard might be expected to produce more careful consideration of the plaintiff's case, and hence less deference.

But legal endogeneity theory suggests several reasons why, despite this legal standard, one would expect to see greater deference in summary judgment opinions in the district courts. In general, judicial deference involves the drawing of inferences about employers' compliance from the presence of institutionalized employment structures. Absent careful deliberation, or to the extent that organizational structures have become naturalized as signals of compliance or rationality, judges may not even recognize that they are drawing inferences when they defer to such structures.

For a number of reasons, this heuristic use of organizational structures is especially likely to occur in district courts. First, proceedings in the district courts are more likely to center on factual issues, whereas proceedings in the circuit courts are more likely to center on questions of law. Second, there is only one judge in a district court proceeding, while there are three in a circuit court proceeding. Third, counsel in district court cases may be less experienced or expert than those who handle appeals. Each of these factors reduces the likelihood of careful deliberation and increases the likelihood of erroneous intuitive judgments based on institutionalized notions of compliance (cf. Guthrie et al. 2007).

Conversely, given the appellate focus on legal issues, circuit court judges may be more likely to apply the proper legal standard for summary judgment, which prohibits the drawing of inferences in favor of the moving party/employer. The presence of three judges on a circuit court panel increases the odds that at least one judge may draw attention to this problem. Similarly, more experienced and expert plaintiffs' counsel are more likely than their inexperienced or nonexpert counterparts to challenge the adequacy of organizational structures or to point that drawing inferences against the plaintiff—as judicial deference entails—would violate the legal standard for summary judgment.

Thus, we expect that there will be greater deference in summary judg-



ment opinions in district courts but less deference in summary judgment opinions in the circuit courts.

### *Other Control Variables*

We control for a number of other variables that might affect reference, relevance, or deference. First, for circuit court cases, we control for whether the employer won in the lower court. Although questions of law in civil rights cases are reviewed *de novo* by circuit court judges, some issues are given a more lenient standard of review in which circuit court judges give deference to the opinions of district court judges. Controlling for the outcome at the district court level ensures that any deference by circuit to district court judges does not muddy our circuit court findings. Second, we control for whether organizations are in a goods-producing or a service industry because type of industry has been shown to affect organizational behavior in other analyses (Sutton et al. 1994; Edelman and Petterson 1999).

## METHODS

To study legal endogeneity, we use data coded from written judicial opinions in federal civil rights cases over a 35-year period. Although reported opinions do not necessarily reflect the actual thought processes of the judges who write them,<sup>15</sup> these opinions compose the existing doctrinal environment of organizations and of prospective civil rights litigants. It is the written opinions of courts (and not the unobserved thought processes of their authors) that influence how lawyers, litigants, and other judges understand law and how these actors formulate future legal arguments.

We include opinions resulting from civil rights cases litigated in the federal district and circuit courts from 1965 to 1999.<sup>16</sup> We exclude U.S. Supreme Court cases both because of their relatively small numbers and because we treat these cases as independent variables in order to examine their effect on judicial reasoning in the circuit and district courts. Although most legal analyses focus on Supreme Court opinions, with some attention to appellate (circuit court) opinions, it is the lower courts that are sociologically most interesting. District court opinions constitute the vast majority of federal court opinions, and they also provide the greatest op-

<sup>15</sup> As discussed above, a large literature on judicial behavior suggests that judges' written opinions are influenced by their (unstated) political views, attitudes, and role conceptions (see, e.g., Segal and Spaeth 1993; Clayton and Gillman 1999).

<sup>16</sup> This 35-year period represents the time frame during which the most important developments in legal doctrine concerning civil rights in employment occurred.

portunity for social life to influence law. It is in district courts that legal doctrine meets society most directly as lawyers and parties contest facts as well as law and make critical decisions about what types of actions are legally relevant, what legal rights to mobilize, and what types of defenses to advance. Appellate court opinions are also numerous, and, although appellate opinions focus more on legal concepts than on factual contexts, appellate opinions provide a critical terrain for the negotiation of social norms, policy considerations, and understandings of law. Thus, our focus is on the making of law in the federal district and circuit courts.

We focus on opinions resulting from cases brought under the following federal civil rights statutes: Title VII of the Civil Rights Act of 1964, the Age Discrimination in Employment Act of 1967, the Equal Pay Act of 1963, and two post-Civil War civil rights statutes: 42 U.S.C. §1981 and 42 U.S.C. §1983. These civil rights statutes are similar in structure in that each prohibits discrimination against particular classes of employees. We did not include opinions resulting from cases brought under the Americans with Disabilities Act of 1990 or its federal sector equivalent, the Rehabilitation Act of 1973, because the accommodation requirement made it difficult to discern deference in a standard manner across opinions.<sup>17</sup> We also excluded opinions resulting from cases brought under the Family and Medical Leave Act of 1993 due to complicated issues involving notice. Many cases raise claims under multiple statutes. We included opinions that involved any of these statutes but coded only the portions of each opinion that pertain to the statutes listed above.

### Sampling Frame and Sample Selection

We used the Westlaw database to select all reported federal employment opinions decided by the U.S. district and circuit courts between 1965 and 1999,<sup>18</sup> which yielded 34,578 district court opinions and 16,604 circuit court opinions.<sup>19</sup> We intentionally used a broad search term in order to

<sup>17</sup> Our codebook includes items pertaining to the Family and Medical Leave Act and the Americans with Disabilities Act because we originally planned to include those cases. Those items will facilitate future studies that may include these statutes.

<sup>18</sup> Westlaw is one of two comprehensive databases of judicial decisions. We chose Westlaw over Lexis primarily because it was easier to import the data into SAS and to order the cases chronologically.

<sup>19</sup> Not all cases are reported. When a court renders an opinion, it may order that the opinion be published in official case reports, it may make the opinion generally available for public distribution but specify that it be considered legally unpublished and therefore not cited as precedent, or it may simply file the opinion, in which case it generally does not appear either in official reporters or in online databases. The Westlaw federal database is based on extensive efforts to include all published and (legally) unpublished cases (Edelman et al. 1999). The only way to include unreported cases

include all possible federal civil rights opinions issued under the five acts listed above.<sup>20</sup> Since the number of opinions in the universe rises dramatically over time, and we wanted a sample that reflected the incidence of opinions over time in the district and circuit courts, respectively, we put all opinions in chronological order within court, selected a random starting number, and then selected every fiftieth opinion. This generated an initial sample of 332 circuit court opinions and 692 district court opinions.<sup>21</sup>

Once the initial sample was selected, we then began a process of “qualifying” the opinions into our final sample. Because our search term was overinclusive, some opinions initially selected were not actually civil rights opinions but were included because they mentioned a civil rights statute, often in comparison to the statute principally at stake in the case. Qualification involved reading each opinion and then rejecting it if any of the following criteria applied: the decision was not principally about civil rights; the decision did not involve adjudication on the merits of the case;<sup>22</sup> or, the case arose from an appeal of a decision by the Merit Systems

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would be to send someone to each jurisdiction to collect them. Such an approach is not only impractical, it is unnecessary for our study since unreported cases would not generally be read and would not be cited by lawyers and judges.

<sup>20</sup> Our Westlaw search term was: (“title vii” (“age discrimination”/3 “employment act”) (“rehabilitation act”) (“equal pay act”) (american!/3 disabilit!/1 act) (famill!/3 “medical leave act”) (fmla % (marin! lien))) & <date restriction, from 1/1/1965–12/31/1999>. This search was performed separately in Westlaw’s Court of Appeals database (CTA) and in its District Court database (DIST).

<sup>21</sup> One risk of our sampling strategy was that our results could be biased by multiple opinions from a single case. However, of our 1,024 opinions, only nine involved opinions within the same case at the district and circuit levels, seven involved two district court opinions within the same case, and one involved two circuit court opinions within the same case. This small number of duplicates would not have affected our results.

<sup>22</sup> Cases are considered adjudicated on the merits if the following two criteria are met. First, as a procedural matter, they must involve one of the following: bench trial (FFCL: findings of fact and conclusions of law), appeal from bench trial; directed verdict, appeal from directed verdict; enforcement action: consent decree or judgment; judgment as a matter of law (JNOV), appeal from judgment as a matter of law; jury verdict, appeal from jury verdict; preliminary injunction, appeal from preliminary injunction; summary judgment brought by defendant; summary judgment brought by plaintiff; summary judgment, appeal from grant of, to defendant; summary judgment, appeal from grant of, to plaintiff; summary judgment, cross motions. Second, an opinion does not represent a “merits adjudication” for study purposes if the court’s decision is based on any of the following grounds: whether the defendant is a covered entity; whether the plaintiff has standing to sue; issues regarding the timeliness of the plaintiff’s charge or suit; issues regarding compliance with other prerequisites to suit; whether the defendant is protected by sovereign, qualified, or Eleventh Amendment immunity; issue preclusion (collateral estoppel) or claim preclusion (res judicata); whether certain evidence is admissible or should have been admitted; or the opinion deals only with calculation of damages.

Protection Board.<sup>23</sup> If none of these criteria applied, the opinion was included in the final sample.<sup>24</sup> If one of these criteria applied, then the coder recorded a rejection code (showing which criterion caused rejection), replaced the rejected opinion with the next opinion (chronologically) in the sampling frame, and repeated the qualification procedure until an opinion was selected into the sample. Figure 1 shows the number of district and circuit court opinions over time in the final sample, which is proportionate to the number of opinions each year in the sampling frame.<sup>25</sup> In our sample, as in the population, there are very few opinions in the early years after the passage of Title VII.

### Coding

Our coding scheme includes data at both the opinion level and the organizational structure level. At the opinion level, we collected data on the court, judges, plaintiffs, defendants, statutory claims involved in the case, challenged actions, legal theories on which the claims were based, and a variety of other factors. Most importantly, we coded all organizational structures that were explicitly mentioned in each judicial opinion. Then, for each structure mentioned in the opinion, we coded a variety of structure-level characteristics, including the causes of action and legal theories to which the structure was linked, whether and how the structure was relevant to the legal outcomes, who won on the claim to which the structure was relevant, and whether and how the court discussed the adequacy or quality of the structure.

Given the complexity of our coding scheme, we took numerous measures to ensure coder reliability. First, we developed and refined the coding scheme (in particular, the 45 organizational structures and structural characteristics) through an iterative procedure involving trial coding of opinions by five researchers over a period of about one year. Once the data

<sup>23</sup> The Merit Systems Protection Board was established by the Civil Service Reform Act of 1978 to administer the federal government's merit-based system of employment. We exclude these cases because they may involve different considerations than other types of EEO cases.

<sup>24</sup> Summary judgment opinions were included because they involve decisions on the merits of the case and may involve consideration of organizational structures. However, our analyses control for summary judgment rulings and examine empirically whether these rulings differ from other opinions.

<sup>25</sup> Importantly, as detailed in appendix A, the sampling strategy we use gives rise to the same sample selection probabilities as those obtained under simple random sampling from, with the resulting sample equivalent to a simple random sample drawn on, a population of civil rights cases.

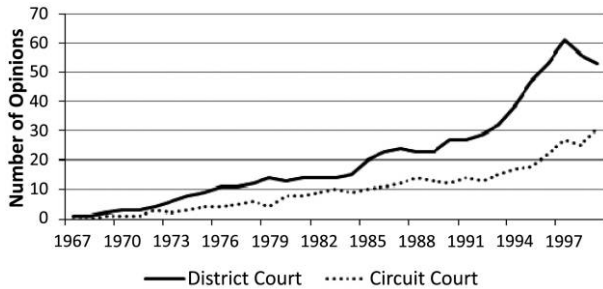


FIG. 1.—Number of district and circuit court opinions per year in sample

were coded, we also ran a series of reliability checks to ensure that there were no systematic differences among the coders.<sup>26</sup>

We also coded several variables using supplemental data or sources. Employee occupation was recorded from the opinions and then coded (along with occupational prestige) using the Bureau of Labor Statistics Standard Occupation Classification System. Employer industry was recorded and then coded using the Bureau of Labor Statistics Standard

<sup>26</sup> Each week, five opinions were selected, and all the researchers independently determined the organizational structures at issue and coded them. Discrepancies were discussed and used to refine the coding scheme. This process was repeated until we came up with a set of structure categories and other codes that could be reliably coded (with about 90% agreement) independently by the five researchers. One of those researchers then completed all of the case qualification and circuit court coding and, with one of the principal investigators, supervised and trained the district court coders. Each of the district court coders was required to have completed a course in EEO law and to have completed at least 100 hours of coding training. During the training, coders practice coded opinions that had already been coded by trained coders. They did not begin actual coding until they could accurately and consistently reproduce the coding of previously coded opinions. For the district court opinions, 5% of the cases were randomly selected and recoded by a second coder after about 300 cases had been coded. Discrepancies were corrected, examined by the principal investigators, and used to inform the coders, who recoded the variables where discrepancies had been discovered for all previously coded cases. Subsequent reliability checks at various points during the coding process showed no systematic discrepancies and over 90% agreement. As a further precaution, we periodically included *coder* in our quantitative analyses and found that, with one exception prior to the initial reconciliation of discrepancies, the variable was not statistically significant. We do not report a Cohen's Kappa or other coding reliability measure because, after the initial correction of discrepancies, difficult coding decisions were made jointly by the coding team and thus standard double-coding techniques would not have provided independent measures. However, due to the long period of coder training, frequent accuracy checks by the principal investigators, and joint decision making on difficult cases, we are confident that our coding reflects coding reliability that is well above the acceptable standard.

Industrial Classification System (SIC). To code judicial politics, we used data on judges from the Federal Judicial Center.

## Measures

### *Dependent Variables*

As discussed earlier, legal endogeneity is measured by its three observable manifestations that represent progressive stages of endogeneity: reference, relevance, and deference. Reference is operationalized as a dummy variable representing whether or not there is any explicit mention of an organizational structure or practice in the opinion. Relevance is measured as a dummy variable representing whether or not the court considers the presence of an organizational structure to be relevant to the legal question of discrimination (specifically whether “the presence of the structure might be evidence of nondiscrimination”). Since the court cannot consider the presence of the organizational structure without referring to it, relevance cannot exist without reference. Deference is operationalized as a dummy variable that is coded 1 if relevance exists and if one of the following conditions exist: (1) the opinion reflects no consideration of the quality or adequacy of the organizational structure, (2) the opinion explicitly states that the organizational structure is inadequate but that the inadequacy does not matter, or (3) the opinion states that the adequacy of the organizational structure was considered but there are clear indicators that the structure was inadequate and that the court gave only superficial consideration to the question of adequacy without engaging in meaningful scrutiny.<sup>27</sup>

<sup>27</sup> Of the structures where relevance was present, those coded as involving judicial deference included: 39% in which the court failed to discuss the adequacy of the structures at all (20% in the circuit courts and 53% in the district courts); 3% in which the court explicitly stated that the structure was inadequate but that inadequacy did not matter (3% in both the circuit and district courts); and 7% in which the court stated that the structure was adequate despite clear evidence that the structure was inadequate (5% in the circuit courts and 9% in the district courts). We coded structures as involving deference under this last condition only if certain factors were present that indicated that, in spite of general language to the contrary, the court did not engage in meaningful scrutiny of the policy/structure for bias. These factors included (1) the court’s disregard of evidence that suggested that the policy was applied unequally to employees of different protected classes; (2) the court’s disregard of evidence that ignored bias at the lower level(s) of a multilevel structure; (3) the court’s reference to the importance of “management prerogative” while dismissing evidence of potential bias in the operation of the policy/structure. Two coders had to agree that these factors were present in order for the third condition to be met. We also ran our analyses without coding these structures as having been deferred to, and there were no substantial differences in the results.

Those coded as not involving judicial deference included 27% in which the court

*Independent Variables*

*Plaintiff characteristics.*—Plaintiff characteristics are coded from the written opinions. While it was almost always possible to code the plaintiff's sex and whether the plaintiff was a government or public interest organization, and information on the plaintiff's occupation was generally available, information on the plaintiff's race was generally available in cases involving claims of race discrimination but was frequently not mentioned in other cases. The race dummy variable, therefore, should be understood as representing an explicit mention that the plaintiff was a racial or ethnic minority (in comparison to both explicit mention that the plaintiff was white and opinions where there was no mention of the plaintiff's race or ethnicity). Similarly, *union member* is a dummy variable representing an explicit mention that the plaintiff was a union member (in comparison to both explicit information that the plaintiff was not a union member and cases where that information was unavailable). The race and union member variables, then, capture the salience to the case of being a racial or ethnic minority or a union member.<sup>28</sup>

*Organization characteristics.*—The industry of the employer was coded from the Bureau of Labor and Statistics SIC codes. The dummy variable “goods producing industry” measures whether or not organizations are in industries associated with manufacturing as opposed to service.<sup>29</sup>

*Legal theories applied to structure.*—The *disparate treatment* and *hostile work environment* dummy variables measure whether or not the court discusses the particular structure in the context of disparate treatment or hostile work environment theories, respectively. These are linear combinations of the estimated effect due to the legal theory used in the case and the estimated effect due to the particular structure being discussed in the context of that legal theory.<sup>30</sup>

*Judicial politics.*—To measure judicial politics, we use the judicial com-

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said that the structure was inadequate and that mattered (37% in the circuit courts and 19% in the district courts), and 24% in which the court stated that the structure was adequate and there was no strong evidence contradicting that statement (35% in the circuit courts and 17% in the district courts).

<sup>28</sup> We also coded the plaintiff's occupation and prestige scores using the Bureau of Labor and Statistics occupation and prestige scores. Plaintiff occupation and prestige had no impact in any of our models and are not included in the tables presented here.

<sup>29</sup> Using the two-digit SIC codes, traditional goods-producing industries (and related extractive industries) include 12 (Agriculture, Forestry, Fishing and Hunting); 21 (Mining); 22 (Utilities); 23 (Construction); and 31 (Manufacturing).

<sup>30</sup> For example, in a disparate treatment case, when a specific structure (such as a grievance procedure) is discussed in the context of the employer's intent to discriminate under the disparate treatment theory, the total estimated disparate-treatment-applied-to-structure effect is the sum of the disparate treatment case-level effect plus the structure-discussed-in-the-context-of-intent structure-level effect.

mon space score method for calculating judges' political orientations proposed by Giles, Hettinger, and Peppers (2001), which range from  $-1$  for most liberal to  $+1$  for most conservative.<sup>31</sup>

*Summary judgment.*—This is a dummy variable that measures whether or not the opinion pertains to a motion for summary judgment.

*Structures.*—As noted earlier, explicit mentions of organizational structures were coded from the opinions. As shown in table 1, we coded a total of 45 categories of organizational structures, three of which are residual categories. For this analysis, the 45 types of structures were grouped into three broad categories. *Compliance structures* refer to structures that are specifically designed to comply with law or to symbolize compliance with law, such as affirmative action offices and grievance procedures. *Personnel structures* are those structures generally associated with the rational governance of human resources such as job postings, progressive discipline policies, and employee handbooks. *General business structures* refer to structures related to general business practices other than governance, such as pay plans, formal task allocation procedures, and tests for job allocation.<sup>32</sup>

### Statistical Model of Legal Endogeneity

To elaborate our statistical model of legal endogeneity, first let  $Y_{ijt}^*$  be an unobserved continuous measure of (the degree of) legal endogeneity for

<sup>31</sup> Giles et al. (2001) propose a method of measuring judicial politics that makes use of the preference scores developed by Poole and Rosenthal (1997) and Poole (1998), which measure senators' and presidents' political orientations based on their voting records. Poole (1998) then developed "common space scores" by placing the presidents and senators on a metric that is common across time and institutions. The use of common space scores to measure judicial preferences has been shown to be more accurate than relying on the party affiliation of the appointing president (Giles et al. 2001). It takes into account the recognized role of senators in judicial appointments. Where both senators are of the same party as the president, the judge's score is calculated as the average of the senators' common space scores, which range from  $-1$  (most liberal) to  $+1$  (most conservative). Where only one senator is of the same party as the president, the judge's score is assigned as the common space score of that senator. Where neither senator is out of the same party as the president, the judge's score is assigned as the president's common space score. Michael Giles generously provided us with scores for circuit court judges, which we merged with our database. For district court judges, we used data on judges from the National Judicial Center and Giles's methodology to calculate judges' political orientation scores.

<sup>32</sup> In some cases, generally for business structures and sometimes for personnel structures, it is usually not the structure per se that courts consider relevant or defer to, but rather an organization's adherence to its own policy. For example, if a firm has an English-only policy and someone is fired for speaking Spanish, a court might defer to that policy by finding that the employee was fired in accordance with the policy but fail to determine whether the policy was enforced in a fair way (no attention to adequacy).



TABLE 1  
TYPES OF ORGANIZATIONAL STRUCTURES

| Compliance Structures   | Personnel Structures  | General Business Structures  |
|---|---|--|
| Formal grievance procedure (written multilevel procedure)                                     | HR office with no explicit EEO function   | Appearance requirements  |
| Formal open door policy (written statement that boss' door always open)                       | Attendance policy   | Define job and allocate tasks (including restructuring)              |
| Informal open-door policy (not written but exists in practice)                                | Employee handbook   | Inside candidates, preference for                                    |
| No written policy but court says employer generally follows a process that indicates fairness | Evaluation procedure (including rebuttal and complaints; including quantitative rating systems) | Language skills, including good English or no accent, preference for |
| OTHER ways to complain  | Job posting/notice of interest in new job   | Physical requirements (age, weight, height)                          |
| Diversity office or officer   | Leave policy (including rules for giving notice)  | Recent education, preference for                                     |
| EEO/AA office or officer  | Multiperson decision-making process, formal   | Restructuring (reduction in force, downsizing, involving job loss)   |
| Employer's willingness to discuss accommodations  | Multiperson decision-making process, informal   | Set pay based on competition, availability, labor market             |
| Employer's offer of accommodations  | Policy regarding notice time for leave  | Set pay based on employer's special needs                            |
| HR office with explicit EEO function  | Progressive discipline policy (verbal warning, written warning, fired)                          | Set pay based on skill   |
| Legally required poster   | Record-keeping procedure  | Set time, place, and attendance (including restructuring)            |
| Simple policy prohibiting illegal activity  | Recruitment program   | Subjective evaluation criteria (e.g., leadership skills), use of     |
| OTHER explicit efforts at preventing discrimination (e.g., AAP)                               | Seniority/tenure policy   | Tests, use of  |
|   | Training program (may be external to organization)  | Word of mouth recruitment, use of                                    |
|   | Written job description   | Workplace behavioral rules   |
|   | OTHER standardized personnel practices/policies (must be ongoing/not ad hoc practice)           | OTHER employer prerogatives (must be ongoing/not ad hoc practice)    |

structure  $i$  in court case  $j$  at time  $t$ . The term  $Y_{ijt}^*$  then comprises latent continuous reference, relevance, and deference components such that  $Y_{ijt}^* = [Y_{ijt}^{\text{Ref}}, Y_{ijt}^{\text{Rel}}, Y_{ijt}^{\text{Def}}]$  with ordered constraint  $Y_{ijt}^{\text{Ref}} < Y_{ijt}^{\text{Rel}} < Y_{ijt}^{\text{Def}}$ . We model each of these components as a function of the observed independent variables, structure types and time, and the structure-time interaction to capture the across-structure differences in trends indicated above. Let  $X_{ijt}$  represent the set of independent variables measured on structure  $i$  and court opinion  $j$  at time  $t$ . Further, let  $\sigma_i$  be the main effect for structure  $i$ ,  $\tau_t$  be the main effect for time  $t$ , and  $\gamma_{it}$  be the interaction effect for structure  $i$  at time  $t$ . From this, the general model for each component  $[Y_{ijt}^{\text{Ref}}, Y_{ijt}^{\text{Rel}}, Y_{ijt}^{\text{Def}}]$  can be written as a set of three related equations,

$$\begin{aligned} Y_{ijt}^{\text{Ref}} &= X_{ijt}\beta^{\text{Ref}} + \sigma_i^{\text{Ref}} + \tau_t^{\text{Ref}} + \gamma_{it}^{\text{Ref}} + \varepsilon_{ijt}^{\text{Ref}}, \\ Y_{ijt}^{\text{Rel}} &= X_{ijt}\beta^{\text{Rel}} + \sigma_i^{\text{Rel}} + \tau_t^{\text{Rel}} + \gamma_{it}^{\text{Rel}} + \varepsilon_{ijt}^{\text{Rel}}, \\ Y_{ijt}^{\text{Def}} &= X_{ijt}\beta^{\text{Def}} + \sigma_i^{\text{Def}} + \tau_t^{\text{Def}} + \gamma_{it}^{\text{Def}} + \varepsilon_{ijt}^{\text{Def}}, \end{aligned} \tag{1}$$

where the superscripts Ref, Rel, and Def indicate equation-specific items for reference, relevance, and deference, respectively; the  $\beta$  are vectors of model estimates related to the sets of independent variables in  $X_{ijt}$ , including the usual constant term; and the  $\varepsilon_{ijt}$  represent unmeasured characteristics. Here, we assume the  $\varepsilon_{ijt}$  are normally distributed with zero mean and unit variance. Appendix B provides our analysis of the functional form of the time trend in legal endogeneity, which provides evidence that the linear specification gives a reasonable approximation to the trends in these data.<sup>33</sup> We constrain the time effects  $\tau_t$  and the interaction  $\gamma_{it}$  accordingly. We also constrain the structure-specific effects  $\sigma_i$  and  $\gamma_{it}$  to contrast compliance, personnel, and business practices structures.

Maximum-likelihood estimates for the parameters in equation (1) are obtained using a probit specification where each of the (latent) components

<sup>33</sup> We did not use random effects in the time specification because the typical application of random effects for time trends requires repeated observations on the same units over time, as would be the case with, e.g., panel data. Our data are not structured this way. We also considered a nested structure, with periods constituting the typical level-2 units and court opinions constituting typical level-1 units. We rejected this strategy for two primary reasons. First, in the usual multilevel mixed model specification, level-2 units are random draws off of some population. In our data, time periods are not random draws. Second, for categorical outcomes, the meaning of the marginal (or mean structure) effects changes in important ways when conditional (or subject-specific) random effects are present. This, in turn, changes the character of the model in that no longer would the estimated effects of our independent variables refer to hypotheses regarding the population distributions of the reference, relevance, and deference outcomes. See Agresti (2002, chap. 12) and Molenberghs and Verbeke (2010, sec. 4) for useful discussions. Thus, a random effects specification for time is not a reasonable option for our analysis of these data.

$[Y_{ijt}^{\text{Ref}}, Y_{ijt}^{\text{Rel}}, Y_{ijt}^{\text{Def}}]$  of the (latent) legal endogeneity variable  $Y_{ijt}^*$  is related to observed indicators of reference, relevance, and deference, respectively. Let  $[D_{ijt}^{\text{Ref}}, D_{ijt}^{\text{Rel}}, D_{ijt}^{\text{Def}}]$  be the set of observed dummy variables indicating whether, respectively, reference, relevance, and/or deference is observed (as described above). Each of the latent components  $[Y_{ijt}^{\text{Ref}}, Y_{ijt}^{\text{Rel}}, Y_{ijt}^{\text{Def}}]$  is then related to the set of observed dummy variables  $[D_{ijt}^{\text{Ref}}, D_{ijt}^{\text{Rel}}, D_{ijt}^{\text{Def}}]$  such that

$$D_{ijt}^k = \begin{cases} 1 & \text{if } Y_{ijt}^k > 0 \\ 0 & \text{if } Y_{ijt}^k \leq 0, \end{cases} \quad (2)$$

where  $k = [\text{Ref}, \text{Rel}, \text{Def}]$ .<sup>34</sup>

The total number of analytic units contributing to the log-likelihood equals, for each court, the number of structures plus the number of court opinions with no structures. Recall that opinions are the sampling units, and note that multiple structures may be observed within some opinions. To properly account for this in the estimates, analytic units are weighted in the log-likelihood, with weights equal to one for those opinions with no structures and, for those with structures, inversely proportional to the total number of structures in the opinion. To properly account for this in the standard errors of the estimates, the cluster-corrected Huber-White sandwich estimator of the variance-covariance matrix is used.

While estimates of parameters in equation (1) give effects on the unconditional reference, relevance, and deference constructs, also available are effects on the conditional expected (mean) values of (1) relevance given reference and (2) deference given both relevance and reference. Given model constraints, these conditional effects are simple additive functions of the model parameters and given by

$$E\{Y_{ijt}^{\text{Rel}} | Y_{ijt}^{\text{Ref}}\} = X_{ijt}(\beta^{\text{Rel}} + \beta^{\text{Ref}}) + (\sigma_i^{\text{Rel}} + \sigma_i^{\text{Ref}}) + (\tau_t^{\text{Rel}} + \tau_t^{\text{Ref}}) + (\gamma_{it}^{\text{Rel}} + \gamma_{it}^{\text{Ref}}), \quad (3a)$$

$$E\{Y_{ijt}^{\text{Def}} | Y_{ijt}^{\text{Rel}}, Y_{ijt}^{\text{Ref}}\} = X_{ijt}(\beta^{\text{Def}} + \beta^{\text{Rel}} + \beta^{\text{Ref}}) + (\sigma_i^{\text{Def}} + \sigma_i^{\text{Rel}} + \sigma_i^{\text{Ref}}) + (\tau_t^{\text{Def}} + \tau_t^{\text{Rel}} + \tau_t^{\text{Ref}}) + (\gamma_{it}^{\text{Def}} + \gamma_{it}^{\text{Rel}} + \gamma_{it}^{\text{Ref}}). \quad (3b)$$

Equation (3a) shows that the effect of any independent variable on the *conditional* mean value of relevance *given* reference is equal to the sum of that independent variable's reference and relevance model coefficients. Similarly, the effect of any independent variable on the *conditional* mean value of deference *given* relevance *and* reference is equal to the sum of that independent variable's reference, relevance, and deference model

<sup>34</sup> This is the standard probit formulation (see, e.g., Maddala 1983; Greene 1993; Long 1997).

coefficients. We make use of this property for interpretation of various results below. See appendix C for modeling and estimation details, including the justification of equations (3a) and (3b).

## RESULTS

In this section, we present results from the probit models of legal endogeneity described above. Tables 2 and 3 give results for the district and circuit courts, respectively. In each table, results for reference are given in the first set of columns, followed by those for relevance and then deference. Within each, for inferential purposes, probit model estimates are given along with their standard errors. For interpretational purposes, approximate odds ratios are given using standard formulae translating probit coefficients to the logistic scale, and then exponentiating.<sup>35</sup> For the district court sample, there are 661 court opinions, giving a total of 2,031 observations—equal to the number of structures plus the number of opinions with no structures. For the circuit court sample, there are 332 court opinions and 706 total observations.

We organize the discussion below in terms of groups of explanatory variables. Within each group of variables, we discuss its impact on reference, relevance, and deference for the district and circuit courts, respectively. Where there are differences for the three types of structures (compliance, personnel, and business), we report those differences as well.

### Time

Figure 2 shows five-year moving averages of reference, relevance, and deference over time in the district and circuit courts, without controls for covariates. Reference is fairly high throughout the observed time period, probably because most of the personnel and business structures we observed were institutionalized prior to the civil rights era. Both relevance and deference, however, increase gradually over time after about 1980,<sup>36</sup> which is consistent with legal endogeneity theory. Given that federal civil rights statutes do not mandate these structures, one would not expect any

<sup>35</sup> It is well known that the probit and logistic distributions differ by a scale factor of  $\pi 3^{-0.5}$ , and that logistic and normal curves become, for practical purposes, indistinguishable when accounting for this scale factor. From this, multiplying the probit coefficient by  $\pi 3^{-0.5}$  translates it to an approximate logit scale. While exponentiating this product does not strictly translate into a constant odds ratio effect on an outcome from a probit specification, it nevertheless allows for an approximation and interpretation of probit coefficients on the odds scale.

<sup>36</sup> Due to the low number of opinions in the early years, patterns are less clear prior to about 1980.

TABLE 2  
 MULTIVARIATE PROBIT MODELS FOR DISTRICT COURT SAMPLE (2,031 TOTAL OBSERVATIONS; 661 COURT OPINIONS)

|   | REFERENCE |     |           | RELEVANCE |     |           | DEFERENCE |     |           |
|---|-----------|-----|-----------|-----------|-----|-----------|-----------|-----|-----------|
|   | Estimate  | SE  | Approx OR | Estimate  | SE  | Approx OR | Estimate  | SE  | Approx OR |
| <b>Plaintiff characteristics:</b>                       |           |     |           |           |     |           |           |     |           |
| Gov. or pub. interest org. ....                         | .20       | .44 | 1.45      | .03       | .16 | 1.05      | -.56      | .48 | .36       |
| Female .....  | .50       | .23 | 2.46**    | -.05      | .16 | .91       | -.03      | .21 | .95       |
| Minority .....  | .90       | .44 | 5.13**    | .31       | .14 | 1.75**    | .36       | .18 | 1.92**    |
| Minority female .....                                   | -.97      | .64 | .17       | -.36      | .24 | .52       | -.35      | .32 | .53       |
| Union member .....                                      | .62       | .42 | 3.09      | .06       | .11 | 1.11      | -.03      | .12 | .96       |
| Manager/professional occ. ....                          | .34       | .26 | 1.84      | .09       | .09 | 1.18      | .07       | .09 | 1.13      |
| <b>Organization characteristics:</b>                    |           |     |           |           |     |           |           |     |           |
| Goods producing industry .....                          | .32       | .36 | 1.80      | -.11      | .10 | .82       | -.21      | .08 | .69***    |
| <b>Legal theories applied to structure:<sup>a</sup></b> |           |     |           |           |     |           |           |     |           |
| Disparate treatment .....                               | -.55      | .24 | .37**     | .52       | .11 | 2.57***   | .36       | .11 | 1.93***   |
| Hostile work environment .....                          | -.73      | .26 | .27***    | .67       | .31 | 3.36**    | .28       | .38 | 1.67      |
| <b>Other case characteristics:</b>                      |           |     |           |           |     |           |           |     |           |
| Judicial politics—conservative scale .....              | -.18      | .29 | .72       | .08       | .17 | 1.17      | -.02      | .17 | .97       |
| Summary judgment .....                                  | .12       | .25 | 1.23      | .14       | .08 | 1.30*     | .14       | .07 | 1.30**    |
| <b>Types of structures:</b>                             |           |     |           |           |     |           |           |     |           |
| Main effects—deviations from average:                   |           |     |           |           |     |           |           |     |           |
| Compliance structure .....                              | -1.01     | .26 | .16***    | -.28      | .10 | .61***    | -.20      | .10 | .70*      |
| Personnel structure .....                               | .82       | .15 | 4.40***   | .12       | .06 | 1.24**    | .14       | .06 | 1.30**    |
| Business structure .....                                | .19       | .15 | 1.42      | .16       | .07 | 1.33**    | .05       | .07 | 1.10      |
| Linear trends—annual scale:                             |           |     |           |           |     |           |           |     |           |
| Compliance structure .....                              | .05       | .03 | 1.09      | .04       | .01 | 1.08***   | .03       | .01 | 1.06***   |
| Personnel structure .....                               | .04       | .01 | 1.07***   | .00       | .01 | 1.00      | .00       | .01 | .99       |
| Business structure .....                                | -.01      | .01 | .98       | .01       | .01 | 1.02      | .02       | .01 | 1.03      |
| Intercept .....   | -.08      | .27 | .86       | -1.43     | .16 | .07***    | -1.53     | .20 | .06***    |

<sup>a</sup>The "legal theories applied to structure" effect for reference is with respect to the court opinion in general. See text for details.

\*  $P < .10$ .

\*\*  $P < .05$ .

\*\*\*  $P < .01$ .

TABLE 3  
 MULTIVARIATE PROBIT MODELS FOR CIRCUIT COURT SAMPLE (706 TOTAL OBSERVATIONS; 332 COURT OPINIONS)

|   | REFERENCE |     |           | RELEVANCE |     |           | DEFERENCE |     |           |
|---|-----------|-----|-----------|-----------|-----|-----------|-----------|-----|-----------|
|   | Estimate  | SE  | Approx OR | Estimate  | SE  | Approx OR | Estimate  | SE  | Approx OR |
| Employer won case in lower court .....            | -.37      | .29 | .51       | -.10      | .19 | .83       | .35       | .12 | 1.89***   |
| Plaintiff characteristics:                        |           |     |           |           |     |           |           |     |           |
| Gov. or pub. interest org. ....                   | .56       | .28 | 2.77**    | -.18      | .36 | .72       | -.10      | .22 | .14***    |
| Female .....                                      | -.26      | .26 | .62       | -.08      | .25 | .87       | -.07      | .29 | .87       |
| Minority .....                                    | .57       | .29 | 2.80**    | -.02      | .28 | .97       | -.27      | .13 | .61**     |
| Minority female .....                             | .78       | .56 | 4.12      | -.03      | .31 | .94       | .57       | .30 | 2.79*     |
| Union member .....                                | .81       | .36 | 4.35**    | -.36      | .16 | .52***    | -.80      | .16 | .23***    |
| Manager/professional occ. ....                    | .45       | .25 | 2.25*     | .17       | .20 | 1.36      | .00       | .11 | 1.00      |
| Organization characteristics:                     |           |     |           |           |     |           |           |     |           |
| Goods producing industry .....                    | .57       | .28 | 2.79**    | -.05      | .15 | .91       | .02       | .15 | 1.04      |
| Legal theories applied to structure: <sup>a</sup> |           |     |           |           |     |           |           |     |           |
| Disparate treatment .....                         | -.36      | .27 | .52       | 1.61      | .35 | 18.61***  | 1.35      | .41 | 11.48***  |
| Hostile work environment .....                    | .52       | .56 | 2.59      | .91       | .42 | 5.18**    | .38       | .46 | 2.01      |
| Other case characteristics:                       |           |     |           |           |     |           |           |     |           |
| Judicial politics—conservative scale .....        | -.31      | .47 | .57       | -.18      | .51 | .72       | -.53      | .27 | .38**     |
| Summary judgment .....                            | -.37      | .28 | .51       | -.10      | .19 | .83       | -.43      | .16 | .46***    |
| Types of structures:                              |           |     |           |           |     |           |           |     |           |
| Main effects—deviations from average:             |           |     |           |           |     |           |           |     |           |
| Compliance structure .....                        | -.35      | .30 | .53       | -.46      | .18 | .43***    | -.24      | .14 | .64*      |
| Personnel structure .....                         | .22       | .26 | 1.50      | -.03      | .13 | .95       | .01       | .11 | 1.03      |
| Business structure .....                          | .12       | .27 | 1.25      | .49       | .17 | 2.42***   | .23       | .14 | 1.51      |
| Linear trends—annual scale:                       |           |     |           |           |     |           |           |     |           |
| Compliance structure .....                        | .04       | .04 | 1.07      | .04       | .03 | 1.07      | .05       | .03 | 1.09      |
| Personnel structure .....                         | .05       | .02 | 1.10***   | -.03      | .01 | 1.06***   | .05       | .01 | 1.10***   |
| Business structure .....                          | .01       | .05 | 1.02      | -.03      | .01 | .95**     | .03       | .01 | 1.05***   |
| Intercept .....                                   | .17       | .41 | 1.35      | -.104     | .35 | .15***    | -.234     | .36 | .01***    |

<sup>a</sup> The "legal theories applied to structure" effect for reference is with respect to the court opinion in general. See text for details.

\*  $P < .10$ .

\*\*  $P < .05$ .

\*\*\*  $P < .01$ .

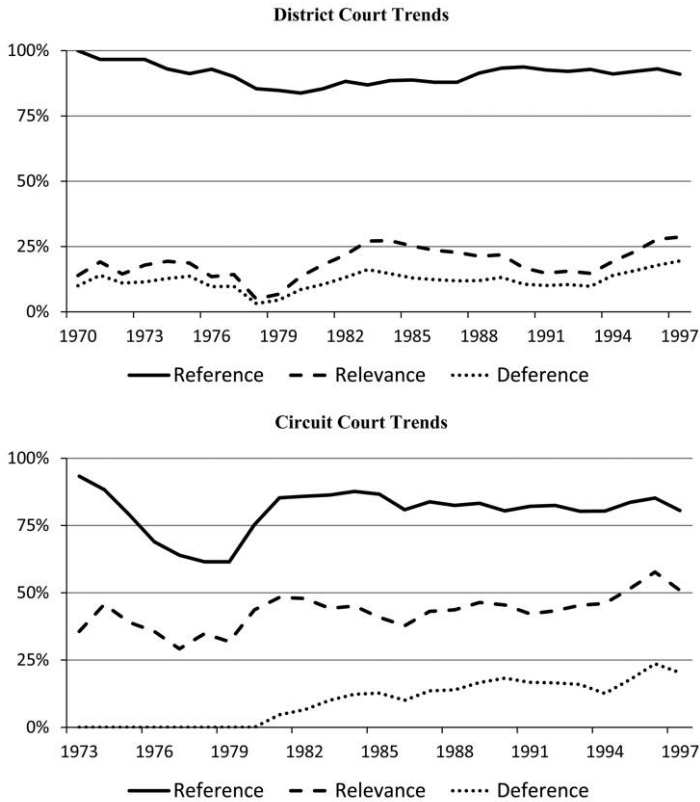


FIG. 2.—Reference, relevance, and deference in district and circuit courts

deference to organizational structures based on the formal law alone. Thus, the fact that courts are deferring to almost 25% of all structures by the end of the observation period, and to about half of structures where relevance occurs in the circuit courts and more than half in the district courts, provides support for the idea of legal endogeneity: judges are inferring fair and rational governance from the presence of institutionalized organizational structures.

The probit models in tables 2 and 3 introduce covariates and break down the linear time trends by type of structure. These models show significant increases over time in reference to personnel structures in both the district courts (table 2) and circuit courts (table 3). Specifically, the odds of reference to personnel structures increase on average by 7% in the district courts (1.07,  $P < .01$ ) annually and by 10% annually in the circuit courts (1.10,  $P < .01$ ). Relevance increases over time by about 8%

per year (1.08,  $P < .01$ ) for compliance structures in the district courts (table 2). In the circuit courts (table 3), there is no linear trend indicated in the relevance of compliance structures and a slight decrease in the odds that judges are viewing business structures as relevant (0.95,  $P < 0.05$ ).<sup>37</sup> However, the odds that judges in the circuit court will treat personnel structures as relevant have increased at a statistically significant 6% per year ( $P < .01$ ). Recall that the odds that judges refer to personnel structures have also increased over this time frame by 10% per year (see above). Thus, referring to the additive property of the expected values given in equation (3a) above, the approximate odds that judges see personnel structures as relevant *given* that it has been referenced have increased by 16% per year in the circuit court data.<sup>38</sup> Given that personnel structures are by far the most prevalent type of structure observed in the circuit court data, a 16% annual increase is a compelling result.

Most importantly, the odds of deference to compliance structures increase significantly at about 6% per year ( $P < .01$ ) in the district courts (table 2). In the circuit courts (table 3), results indicate that the odds of deference to personnel structures increase on average 10% per year ( $P < .01$ ), and the odds of deference to business structures increase on average 5% per year ( $P < .01$ ). Recall that we found a statistically significant 10% per year increase in reference to personnel structures, and a statistically significant 6% per year increase in relevance of personnel structures in the circuit courts over this time frame. Thus, considering the additive property given in equation (3b), the odds that a personnel structure is deferred to *given* that it has been referenced *and* judged relevant is estimated to have increased by 27% per year in the circuit court data.<sup>39</sup>

Our results, then, show that legal endogeneity is increasing over time, although not for all types of structures and courts. Two factors help to explain why we do not see increasing relevance and deference for all three types of structures in both courts. The first is that other factors in the model, in particular disparate treatment theory, absorb some of the time effect. Our results show that the odds of deference are significantly greater in disparate treatment opinions and that disparate treatment has become far more prevalent in civil rights cases over time, as shown in figure 3 (cf. Nielsen, Nelson, and Lancaster 2010). Second, if legal endogeneity

<sup>37</sup> Although the decrease in the odds of relevance to business structures is inconsistent with a neoinstitutional account, the odds of deference to business structures (given relevance) are increasing, which is consistent with that theory.

<sup>38</sup> This approximate odds ratio is obtained by calculating  $\phi = e^{\pi 3^{(-1/2)}(\hat{\beta}^{Ref} + \hat{\beta}^{Rel})} = e^{\pi 3^{(-1/2)}(0.05 + 0.03)}$ .

<sup>39</sup> This approximate odds ratio is obtained by calculating  $\phi = e^{\pi 3^{(-1/2)}(\hat{\beta}^{Ref} + \hat{\beta}^{Rel} + \hat{\beta}^{Def})} = e^{\pi 3^{(-1/2)}(0.05 + 0.03 + 0.05)}$ .



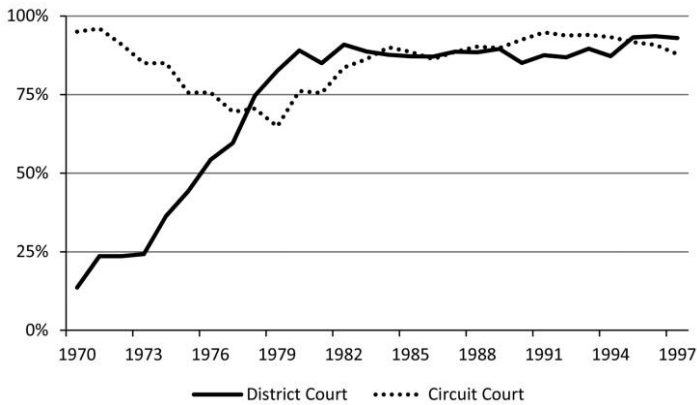


FIG. 3.—Percentage of structures invoked in the context of disparate treatment theory

theory is correct, employers should become more likely over time to litigate cases where courts are likely to defer to the presence of structures and to settle those where employers failed to create these structures (Albiston 1999), and plaintiffs' lawyers should become more likely over time to discourage employees from pursuing cases where judicial deference is likely (Bisom-Rapp 1999, 2001*a*, 2001*b*). Thus, legal endogeneity may become harder to observe in a sample of published judicial opinions precisely where it is becoming more powerful as a force in legal and organizational fields.

### Plaintiff Characteristics

We hypothesized that, following law and society theories suggesting that parties with greater social status enjoy considerable advantages in the legal process (e.g., Galanter 1974; Albiston 1999), legal endogeneity (especially judicial deference) would be greatest in opinions involving less powerful plaintiffs. Thus, we expected that deference would be more likely in opinions involving female and minority plaintiffs and less likely in opinions involving more powerful plaintiffs (government organizations, union members, and managers or professionals). Our results offer some support for this expectation.

In the district courts (table 2), deference occurs almost twice as often in opinions with minority male plaintiffs, when compared to minority

female and nonminority male and female plaintiffs.<sup>40</sup> In the circuit courts (table 3), on the other hand, judges defer to structures more often in opinions with minority female plaintiffs.<sup>41</sup> Also as hypothesized, we find lower odds of deference in opinions involving organizational (as opposed to individual) plaintiffs, although this effect is only statistically significant in the circuit courts. There, a government or public interest organization plaintiff significantly decreases the odds of deference by 86% (0.14,  $P < .01$ ).

In general, then, although not all the findings are statistically significant, where there are significant results, they are in the predicted directions, suggesting that deference operates at the expense of plaintiffs of lower socioeconomic status. Legal endogeneity, then, appears to be yet another manner in which the adversary system favors the “haves” over the “have nots” (Galanter 1974).

### Legal Theories

Our hypotheses with respect to legal theories were complex because of the sometimes different and sometimes overlapping predictions based upon legal doctrine and neoinstitutional organization theory. We suggested that legal doctrine would yield a hypothesis of lower reference to organizational structures in disparate treatment opinions (where nothing in the law makes structures relevant) in comparison to the omitted category, which includes disparate impact and compensation discrimination opinions, where structures are more likely to be referenced. We also expected greater relevance of and deference to organizational structures in disparate treatment opinions because the ambiguity of the intent requirement would lead judges to infer the rationality and fairness of organizational governance from the presence of institutionalized practices. With respect to hostile work environment theory, we hypothesized greater relevance of organizational structures based on the doctrinal developments in the *Mer-*

<sup>40</sup> The significant effect for minority status (1.92,  $P < .01$ ) refers directly to the comparison between minority males and nonminority males. Constructing comparisons between minority males and nonminority and minority females reveals similar effects of 2.02 and 2.00, respectively, on the approximate odds ratio scale.

<sup>41</sup> Specifically, they defer to structures about 1.5 times more often when compared to opinions involving nonminority male plaintiffs, about 1.75 times more often when compared to opinions involving nonminority female plaintiffs, and nearly 2.5 times more often when compared to opinions involving minority male plaintiffs. Constructing relevant pairwise contrasts between minority females and (1) nonminority males, (2) nonminority females, and (3) minority males reveals effects of 1.49, 1.70, and 2.44, respectively, on the approximate odds ratio scale.

*itor*, *Faragher*, and *Ellerth* cases, but not greater deference since the case law itself calls for attention to the quality of these structures.

Our findings are mostly consistent with these hypotheses. In the district court sample (table 2), the odds of reference to structures are lower in both hostile work environment opinions (0.27,  $P < .01$ ) and in disparate treatment opinions (0.37,  $P < .05$ ) than in other types of cases.<sup>42</sup> In the circuit courts (table 3), however, we find no statistically significant effects of legal theories on reference. Thus, for reference, the requirements of legal doctrine appear to explain the statistically significant findings for the district courts.

For relevance and deference, however, the more sociological explanations come into play. In the district courts (table 2), the odds that judges see structures as relevant are considerably higher in the context of both disparate treatment theory (2.57,  $P < .01$ ) and hostile work environment theory (3.36,  $P < .05$ ) in comparison to other legal theories. In the circuit courts (Table 3), the findings are even stronger. Judges are more than 18 times as likely to treat organizational structures as relevant in disparate treatment cases (18.61,  $P < .01$ ) and a little over five times more likely to see these structures as relevant in hostile work environment cases (5.18,  $P < .05$ ), in comparison to other legal theories.<sup>43</sup> These findings suggest that judges find organizational structures relevant where the legal theory requires proof of intent, as in disparate treatment theory, or where doctrine makes those structures relevant, as in hostile work environment theory.

Our findings with respect to deference are the most compelling. In contrast to what legal theory would predict but consistent with neoinstitutional theory, judicial deference occurs more often when the structure is invoked in the context of disparate treatment theory than in any other context. Specifically, as shown in table 2, deference to structures in the district courts is 15% ( $1.93/1.67 = 1.15$ ) more likely when disparate treatment theory is invoked relative to hostile work environment theory, and almost twice as likely (1.93,  $P < .01$ ) when disparate treatment theory is invoked compared to all other theories. This relationship is even more dramatic in the circuit courts (table 3), where judicial deference to a structure is nearly six ( $11.48/2.01 = 5.71$ ) times more likely when disparate treatment theory is invoked compared to hostile work environment theory, and over 11 times more likely (11.48,  $P < .01$ ) when disparate treatment

<sup>42</sup> In interpreting the coefficients for legal theories in tables 2 and 3, it is important to note that estimates for the effects of different legal theories are with respect to court opinions; i.e., these values reflect the estimated relative frequencies with which different legal theories are present in opinions where structures are referenced.

<sup>43</sup> While the disparate treatment effect is large, the standard error and other model diagnostics suggest the estimate is nevertheless statistically stable.

theory is invoked when compared to all other legal theories. This finding provides strong support for our contention that, in disparate treatment cases where the structure of the legal theory requires proof of intent but intent is difficult to observe, courts tend to infer employers' rationality and legal compliance and hence a lack of intent from the presence of institutionalized organizational structures. Given that over the course of our period of observation, structures become far more likely to be invoked in the context of disparate treatment theory (see fig. 3), this finding helps to explain how law is becoming more endogenous over time.

### Judicial Politics

Judicial politics do not appear to affect the odds of reference to or relevance of organizational structures in either the district or circuit courts, or the odds of deference in the district courts. However, in the circuit courts, our findings suggest that liberal circuit court judges are more likely to defer to organizational structures than are conservative judges (0.38,  $P < .05$ ). Given that our judicial politics scale is coded from  $-1$ , indicating the most liberal, to  $+1$ , indicating the most conservative, this result reveals that the most conservative judges are 86% less likely to defer to organizational structures than are the most liberal judges.<sup>44</sup> This is a somewhat counterintuitive finding, given that deference generally favors employers. It is also somewhat difficult to interpret given that most circuit court decisions are by three judge panels (so that the judicial politics variable is an average of their scores). This finding could indicate that liberal judges are more impressed by the trappings of legal rational governance than are conservative judges.

### Summary Judgment

As hypothesized, summary judgment operates differently in the district and circuit courts. In the district courts, opinions on motions for summary judgments are no more likely to reference organizational structures than are other opinions, but the odds are about 30% greater that judges addressing summary judgment matters will find organizational structures relevant (1.30,  $P < .1$ ) and that they will defer to their presence (1.30,  $P < .05$ ). In the circuit courts, however, the odds of deference to organizational structures are about 50% lower in opinions reviewing summary judgments (0.46,  $P < .01$ ). These findings suggest that legal endogeneity is more likely when judges focus more on facts, when judges are less experienced, and when a single judge (as opposed to a panel of judges)

<sup>44</sup> This approximate odds ratio is obtained by calculating  $e^{\pi_3(-1/2)(-0.53)}$ .

is making the decision. These factors make it more likely that judges will unwittingly infer nondiscrimination from the presence of institutionalized organizational structures without adequately scrutinizing whether those structures operate to reduce discrimination.

### Summary

Our findings on reference, relevance, and deference suggest that judicial constructions of law have over the past 40 years become increasingly likely to incorporate and eventually to defer to institutionalized organizational structures. Our findings also suggest that judicial deference is more likely in cases involving less powerful plaintiffs, that judicial evaluation of aspects of organizational behavior that are not easily observable (as in disparate treatment cases) appears to facilitate the infusion of business logic into legal logic, and that in the district courts, the heuristic use of institutionalized organizational structures to infer fair treatment in summary judgment opinions is especially likely.

### CONCLUSION

This article has developed the theory of legal endogeneity, which posits that institutionalized organizational structures work their way into judicial conceptions of organizational rationality and regulatory compliance. As judges come to infer nondiscriminatory treatment from the presence of those structures in organizational governance, law becomes increasingly endogenous to the organizational fields it seeks to regulate. Because legal endogeneity operates largely under the radar, it is a difficult construct to measure. However, this article operationalized legal endogeneity by identifying reference, relevance, and deference as progressive, observable stages of legal endogeneity, and it develops a modeling strategy to examine both time trends in and determinants of legal endogeneity.

Whereas Edelman et al. 1999 introduced the concept of legal endogeneity and provided an early test of the theory in the narrow context of grievance procedures, this study has examined judicial attention to a much broader array of institutionalized organizational structures in a random sample of judicial opinions in federal EEO cases over a 35-year period. Importantly, our findings probably underrepresent the actual degree of legal endogeneity because, to the extent that both parties and their attorneys see institutionalized organizational structures as indicators of compliance, potential employment discrimination complaints are likely to be settled or to be dropped altogether. Thus, an important effect of legal endogeneity may be to push potential cases out of the formal legal system.

Skeptics may argue that judicial attention to organizational structures can be explained by judges' strategic interest in encouraging organizations to create organizational policies or practices as a means of encouraging organizations to rationalize their governance systems. We have no doubt that this is true in isolated cases, but we think that this argument fails as a general explanation because it does not explain why the structures we discuss appear first in organizational fields and only later in the legal field. Most personnel structures we examined appeared before any civil rights legislation took effect (Slichter 1919; Gordon et al. 1982; Jacoby 1985; Baron et al. 1986), and most of the compliance structures we examined were institutionalized shortly after the 1964 Civil Rights Act (Edelman 1990, 1992; Sutton et al. 1994). Yet, as our data reveal, judicial attention to these structures—especially relevance and deference—occurs only later, mostly after the mid-1980s. Further, legal endogeneity theory provides a better explanation than do judges' strategic interests for why judges so frequently fail to consider the adequacy of organizational structures and sometimes even reject the notion that organizational structures ought to meet some standard of adequacy or quality.

Our findings on legal endogeneity have implications for several theoretical traditions in the social sciences. Legal endogeneity theory contributes to the growing neoinstitutional literature on organizations and law (e.g., Dobbin et al. 1988, 1993; Edelman 1990, 1992, 2007; Sutton et al. 1994; Dobbin and Sutton 1998; Edelman et al. 1999, 2001; Kelly and Dobbin 1999; Stryker 2003; Kalev et al. 2006; Dobbin 2009; Talesh 2009) by documenting an important yet subtle manner in which organizations mediate and transform law. It also stands as a corrective to analyses of institutional change that treat law as a largely exogenous source of change in other social fields (e.g., Fligstein 1990, 1991; Brint and Karabel 1991) by showing how law is itself highly subject to influence by ideas that become institutionalized within overlapping social fields. It complements theories of institutional change generally, which highlight how institutional change occurs through the overlap of organizational fields with other social fields (Friedland and Alford 1991; Heimer 1999; Scott et al. 2000; Stryker 2000; Schneiberg 2002; Lounsbury et al. 2003; Schneiberg and Soule 2004; Morrill 2009; Edelman, Leachman, and McAdam 2010). Legal endogeneity theory elaborates theories of regulation and regulatory influence in political science, law, and other fields (e.g., Stigler 1971; Ayres and Braithwaite 1992; Baumgartner and Jones 1993; Kamieniecki 2006), by pointing to a form of organizational influence on law that is more subtle and operates less visibly than lobbying, capture, and other forms of direct political influence. Our research has been limited to the judicial context, but related work suggests similar effects of organizational fields (sometimes in concert with more direct political activities) in the regulatory

and legislative arenas (Dobbin and Dowd 2000; Schneiberg and Bartley 2001; Krawiec 2003, 2005; Talesh 2009).

Legal endogeneity theory has important implications for theories of judicial behavior because it shows that judicial opinions are influenced not only by individual orientations and attitudes (Segal and Cover 1989; Baum 1992; Knight and Epstein 1996; Epstein and Knight 1998, 2000; Spaeth and Segal 1999; Segal and Spaeth 2002) or policy preferences (Feeley and Rubin 1999) but also by ideas about the rationality, propriety, and legality of organizational governance that become institutionalized through organizational fields.

Beyond theorizing the relationship of organizations and law, legal endogeneity theory provides a new twist on an old theme in the sociology of law, which is the idea that law is fundamentally a social phenomenon (Durkheim [1893] 1949; Hurst 1956; Macaulay 1963; Friedman 1975; Weber 1978; Ehrlich 2002). Whereas much of this work is vague as to the mechanisms through which society influences law, our research suggests that organizational fields—and the organizational practices and structures that become institutionalized through these fields—allow managerialized conceptions of law, which privilege business values, to influence legal fields and work themselves into judicial analysis and decision making. We show that especially where legal doctrine requires judges to assess unobservable traits, such as intent to discriminate, institutionalized organizational practices help to fill in the void.

There are a number of limitations of our study that should be addressed in future work. First, our data come exclusively from employment discrimination cases, raising the question of whether a similar process of institutionalization and endogeneity would apply to other areas of law. A number of empirical studies describe processes that suggest the operation of legal endogeneity (often without using that term) in legal arenas such as securities regulation (Krawiec 2003, 2005; Larson 2004; O'Brien 2007), consumer regulation (Talesh 2009), insurance (Schneiberg 1999; Schneiberg and Bartley 2001); and criminal justice (Bordt and Musheno 1988; Feeley and Rubin 1999; Grattet and Jenness 2005; Provine 2007). Legal endogeneity theory may be especially relevant to areas of law that represent attempts to standardize and codify existing customs and practices in a particular field, such as the Uniform Commercial Code, and to areas of law that, like employment discrimination, seek to reform existing customs and practices, such as environmental law or occupational safety and health law. Importantly, although we have emphasized the ways in which legal endogeneity undermines the ideals of civil rights law, legal endogeneity may in some contexts help to promote social reform objectives. For example, Aiken and Musheno (1994) found that courts sometimes adopt the discourse of social movements in ways that may benefit

“have not” populations; for example, courts adopted medical discourse rather than punitive frames with respect to persons living with HIV/AIDS. Further research is necessary to discern the context in which legal endogeneity promotes or hinders social change.

Second, our data pertain only to the United States. Future work should examine whether endogeneity operates in other countries, especially civil law countries. More work is needed to identify the contexts in which legal endogeneity operates, as well as variation in its breadth and impact across contexts. Third, an important question that we could not address in this article due to space considerations is how legal endogeneity affects the outcomes of judicial decisions. In future work, we will show that judicial deference gives important advantages to employers over employees.

The association between legal reform and endogeneity, especially given the judiciary’s traditional role as the enforcer of individual rights and unpopular reforms against populist or majoritarian pressures, suggests troubling but important policy implications. Our study has shown that in the employment discrimination context, the endogeneity of law can be an important barrier to the capacity of law to produce social change, because it leads judges to infer nondiscrimination from organizational structures that may in fact operate to perpetuate discrimination. Judicial deference to organizational structures may seem like a fair or efficient practice, but it tends to incentivize not only those organizational structures that in fact promote legal ideals but also those that fail to protect employees (Edelman and Suchman 1999; Marshall 2005). So, for example, judicial deference rewards the presence of antiharassment or family and medical leave policies that exist formally, but which employees fear using because of informal sanctions or retaliation (Albiston 2005); grievance procedures that are unpublicized, ineffective, or rarely used due to fears of retaliation (Bumiller 1988; Edelman et al. 1993; Edelman and Cahill 1998; Marshall 2005); affirmative action plans that do little to improve the status of women and minorities (Baron et al. 1991; Edelman and Petterson 1999); diversity training programs that are ineffective (Kalev et al. 2006); and many other potentially ineffectual organizational structures. Legal endogeneity, then, both can help to institutionalize legal goals and can act as an obstacle to social reform through law by legitimating organizational structures that mask or perpetuate discrimination. The Supreme Court’s deference to a formal organizational policy in *Wal-Mart v. Dukes* (2011) harms not just female employees at Wal-Mart but potentially all employees who work for companies with formal policies that mimic law but informal practices that evade law.

Because legal endogeneity theory calls attention to the potential of law to condone ineffective or sham organizational structures, it has important implications for the growing body of literature in law on delegated or



negotiated governance (e.g., Ayres and Braithwaite 1992; Freeman 1997, 2000; Lobel 2004; Bamberger 2006). This literature generally suggests that legislatures and administrative agencies ought to encourage organizational self-regulation in place of more traditional top-down or direct regulation. Although these accounts point to some important benefits of policies that encourage organizational self-regulation, they tend to neglect the potential of organizations to undermine legal ideals through ineffective or merely symbolic policies (cf. Shamir 2010). Lawmakers who are aware of the potential of delegated governance policies to exacerbate the negative risks of legal endogeneity could minimize the potential harm of such policies.

Within the context of litigation, awareness of the pitfalls of legal endogeneity should lead plaintiffs' lawyers to call into question the institutionalized association between organizational structures and nondiscrimination (or other legal values) and should encourage judges to distinguish those organizational structures that promote organizational justice from those that do not. Given that so many organizational personnel structures have acquired an institutionalized status as fair, efficient, and lawful, it is not surprising that lawyers and judges (and scholars) too often assume that these organizational structures tend to constrain arbitrariness, engender compliance, and promote justice. However, given empirical studies that point to the ineffectiveness of many organizational structures (Edelman et al. 1993, 1999; Edelman and Petterson 1999; Kalev et al. 2006), this article should encourage lawyers and judges to examine more closely whether or not particular organizational structures advance legal ideals. Legal endogeneity undermines civil rights ideals only to the extent that legal actors fail to question the effectiveness of institutionalized organizational structures.

## APPENDIX A

### Sampling Strategy Details

To fix notation and ideas, consider that for a simple random sample from a population of  $N_1$  civil rights cases, the probability that case  $i$  will be drawn into the sample is given by

$$\text{prob}\{\text{Case } i \text{ is selected}\} = \frac{1}{N_1}.$$

Next, note that for a random sample of civil rights cases drawn from a population comprising a mixture of  $N_1$  civil rights (CR) cases and  $N_0$  non-civil-rights (NCR) cases, where a randomly drawn CR case is accepted into the sample with certainty and a randomly drawn NCR case is rejected with certainty, the probability that a randomly drawn case is selected into the sample is given by the law of total probability,

$$\begin{aligned} \text{prob}\{\text{Case } i \text{ is selected}\} &= \text{prob}\{\text{CR case } i \text{ is drawn}\} \\ &\quad \text{prob}\{\text{Accept case } i|\text{CR case } i \text{ is drawn}\} \\ &\quad + \text{prob}\{\text{NCR case } i \text{ is drawn}\} \\ &\quad \text{prob}\{\text{Accept case } i|\text{NCR case } i \text{ is drawn}\} \\ &= \left(\frac{1}{N_1}\right)(1) + \left(\frac{1}{N_0}\right)(0) = \frac{1}{N_1}. \end{aligned}$$

Thus, the second sampling strategy gives rise to the same sample selection probabilities as those obtained under a simple random sampling strategy, with the resulting sample equivalent to a simple random sample drawn on a population of  $N_1$  civil rights cases.

Now consider a third sampling strategy, similar to the second, and that used to obtain the sample of civil rights cases for the project. As with the second, we have a population comprising a mixture of  $N_1$  CR cases and  $N_0$  NCR cases. Also consistent with the second strategy, drawn CR cases are accepted into the sample, and drawn NCR cases are rejected. Here, however, the mixed population of CR and NCR cases are first rank-ordered on some variable, say  $T$ . A random value is then drawn on  $T$ , say  $t_0$ , and the case in the population whose rank corresponds to  $t_0$  is drawn for consideration into the sample. Assuming only one case can be found at position  $t_0$  (i.e., assuming no ties on  $T$ ), the corresponding sample selection probability is given by

$$\begin{aligned} \text{prob}\{\text{Case } i \text{ is selected}\} &= \text{prob}\{\text{CR case } i \text{ is at position } t_0\} \\ &\quad \text{prob}\{\text{Accept case } i|\text{CR case } i \text{ is at position } t_0\} \\ &\quad + \text{prob}\{\text{NCR case } i \text{ is at position } t_0\} \\ &\quad \text{prob}\{\text{Accept case } i|\text{NCR case } i \text{ is at position } t_0\} \\ &= \left(\frac{1}{N_1}\right)(1) + \left(\frac{1}{N_0}\right)(0) = \frac{1}{N_1}. \end{aligned}$$

Similarly, the corresponding sample selection probability for a case in the population whose rank corresponds to  $t_0 + c$ , where  $c$  is any arbitrary positive integer, is given by

$$\begin{aligned}
 \text{prob}\{\text{Case } i \text{ is selected}\} &= \text{prob}\{\text{CR case } i \text{ is at position } t_0 + c\} \\
 &\quad \text{prob}\{\text{Accept case } i \mid \text{CR case } i \text{ is at position } t_0 + c\} \\
 &\quad + \text{prob}\{\text{NCR case } i \text{ is at position } t_0 + c\} \\
 &\text{prob}\{\text{Accept case } i \mid \text{NCR case } i \text{ is at position } t_0 + c\} \\
 &= \left(\frac{1}{N_1}\right)(1) + \left(\frac{1}{N_0}\right)(0) = \frac{1}{N_1}.
 \end{aligned}$$

Thus, the third sampling strategy—the one we use to obtain the sample analyzed in the article—gives rise to the same sample selection probabilities as those obtained under simple random sampling, with the resulting sample equivalent to a simple random sample drawn on a population of  $N_1$  civil rights cases. For our specific case, the variable  $T$  is the date/time of the court case and the constant  $c = k50$ , where  $k = 0, 1, 2, \dots$

Note that there is one additional variation on this strategy that we implemented in selecting the sample. That is, if a case at  $t_0 + k50$  was found to be an NCR case (or otherwise disqualified; see text for details), then the immediate next case at  $t_0 + k50 + 1$  was considered for inclusion into the sample. Given that a case's relative rank on  $T$  does not depend on some other case's relative rank on  $T$ , the resulting sample selection probabilities remain unchanged. This is due to the fact that, under this casewise independence,

$$\begin{aligned}
 &\text{prob}\{\text{CR case } i \text{ is at position } t_0 + k50 + 1 \\
 &\quad \mid \text{NCR case } i \text{ is at position } t_0 + k50\} \\
 &= \text{prob}\{\text{CR case } i \text{ is at position } t_0 + k50 + 1, \\
 &\quad \text{NCR case } i \text{ is at position } t_0 + k50\} / \\
 &\quad \text{prob}\{\text{NCR case } i \text{ is at position } t_0 + k50\} \\
 &= \text{prob}\{\text{CR case } i \text{ is at position } t_0 + k50 + 1\} \\
 &\quad \times \text{prob}\{\text{NCR case } i \text{ is at position } t_0 + k50\} \\
 &\quad / \text{prob}\{\text{NCR case } i \text{ is at position } t_0 + k50\} \\
 &= \text{prob}\{\text{CR case } i \text{ is at position } t_0 + k50 + 1\} \\
 &= \frac{1}{N_1}.
 \end{aligned}$$

The second line derives from the definition of a conditional probability and the third from the noted casewise independence. Replacing

prob{CR case  $i$  is at position  $t_0 + c$ } in the previous sample selection probability with this conditional probability, along with corresponding notational changes throughout the equation, gives the unchanged result. Again, this shows that the sampling strategy we use gives rise to the same sample selection probabilities as those obtained under simple random sampling, with the resulting sample equivalent to a simple random sample drawn on a population of  $N_1$  civil rights cases.

## APPENDIX B

### Specification of Time Trends in Legal Endogeneity

In this section, we provide an assessment of the functional form of time trends in legal endogeneity. Here we make use of a reduced form of the more general specification of that model, one that includes only time trend effects interacted by the three structure types (the  $\sigma_i$ ,  $\tau_i$ , and  $\gamma_{ii}$  parameters).

Table B1 gives model statistics for the saturated (i.e., observed), cubic, quadratic, linear, and no-trend specifications separately for the district and circuit court samples. Likelihood ratio tests (column headed "LR Test") and the log-likelihood Bayesian information criterion (BIC) statistic (column headed "LL BIC") show that, for structures in both samples, the linear specification gives a reasonable representation of time trends in reference, relevance, and deference. More precisely, the BIC statistic supports the linear trend specification for compliance and business structures in the district court sample, as well as for personnel structures in the circuit court sample. Further evidence for the linear trend specification over the quadratic is suggested by the likelihood ratio tests, showing no significant gain for the quadratic over the linear specification at the .01 level. However, the BIC statistic and likelihood ratio tests indicate support for the no-trend specification for personnel structures in the district court and for compliance and business structures in the circuit court. Combined, this information suggests that we need not consider in our multivariate models more complex specifications of time than the linear trend.

For readers unconvinced by the above results, additional information is provided here based on Akaike's information criteria (AIC) and additional log-linear analyses of these data. First, note that it has been known for some time that the AIC tends to overestimate the number of parameters needed to well-represent some data distribution, even in large samples and especially in estimating the order of temporal processes (Shibata 1976; Katz 1981; Kass and Raftery 1995). It has also been known for over a decade that the AIC does not properly account for parameter estimate uncertainty in statistical models, lacks a firm foundation in statistical theory, and is a rather ad hoc measure from a statistical information

TABLE B1  
 MODEL STATISTICS AND LIKELIHOOD RATIO (LR) TESTS FOR TRENDS IN REFERENCE,  
 RELEVANCE, AND DEFERENCE FOR DISTRICT AND CIRCUIT COURT SAMPLES BY STRUCTURE

| Model                               | Log-Likelihood | Params. | LR Test | <i>df</i> | <i>P</i> | LL BIC |
|-------------------------------------|----------------|---------|---------|-----------|----------|--------|
| District court ( <i>N</i> = 2,031): |                |         |         |           |          |        |
| Compliance structures:              |                |         |         |           |          |        |
| Saturated (observed) ....           | -2,743         | 99      |         |           |          | 6,240  |
| Cubic trend .....                   | -2,857         | 12      | 228     | 87        | .0000    | 5,805  |
| Quadratic trend .....               | -2,859         | 9       | 4       | 3         | .2615    | 5,787  |
| Linear trend .....                  | -2,861         | 6       | 4       | 3         | .2615    | 5,768  |
| No trend .....                      | -2,889         | 3       | 56      | 3         | .0000    | 5,801  |
| Personnel structures:               |                |         |         |           |          |        |
| Saturated (observed) ....           | -7,001         | 99      |         |           |          | 14,756 |
| Cubic trend .....                   | -7,158         | 12      | 314     | 87        | .0000    | 14,407 |
| Quadratic trend .....               | -7,159         | 9       | 2       | 3         | .5724    | 14,387 |
| Linear trend .....                  | -7,166         | 6       | 14      | 3         | .0029    | 14,378 |
| No trend .....                      | -7,168         | 3       | 4       | 3         | .2615    | 14,359 |
| Business structures:                |                |         |         |           |          |        |
| Saturated (observed) ....           | -5,410         | 99      |         |           |          | 11,574 |
| Cubic trend .....                   | -5,604         | 12      | 388     | 87        | .0000    | 11,299 |
| Quadratic trend .....               | -5,609         | 9       | 10      | 3         | .0186    | 11,287 |
| Linear trend .....                  | -5,614         | 6       | 10      | 3         | .0186    | 11,274 |
| No trend .....                      | -5,650         | 3       | 72      | 3         | .0000    | 11,323 |
| Circuit court ( <i>N</i> = 706):    |                |         |         |           |          |        |
| Compliance structures:              |                |         |         |           |          |        |
| Saturated (observed) ....           | -336           | 93      |         |           |          | 1,283  |
| Cubic Trend .....                   | -365           | 12      | 58      | 81        | .9771    | 809    |
| Quadratic trend .....               | -366           | 9       | 1       | 3         | .7626    | 791    |
| Linear trend .....                  | -367           | 6       | 3       | 3         | .3618    | 774    |
| No trend .....                      | -372           | 3       | 9       | 3         | .0367    | 763    |
| Personnel structures:               |                |         |         |           |          |        |
| Saturated (observed) ....           | -998           | 93      |         |           |          | 2,607  |
| Cubic trend .....                   | -1,045         | 12      | 93      | 81        | .1622    | 2,169  |
| Quadratic trend .....               | -1,048         | 9       | 6       | 3         | .1116    | 2,155  |
| Linear trend .....                  | -1,052         | 6       | 8       | 3         | .0460    | 2,143  |
| No trend .....                      | -1,066         | 3       | 28      | 3         | .0000    | 2,152  |
| Business structures:                |                |         |         |           |          |        |
| Saturated (observed) ....           | -856           | 93      |         |           |          | 2,323  |
| Cubic trend .....                   | -911           | 12      | 109     | 81        | .0208    | 1,901  |
| Quadratic trend .....               | -914           | 9       | 6       | 3         | .1032    | 1,887  |
| Linear trend .....                  | -917           | 6       | 6       | 3         | .1218    | 1,873  |
| No trend .....                      | -920           | 3       | 7       | 3         | .0700    | 1,861  |

NOTE.—Total sample sizes for each court refer to the number of structures plus the number court opinions with no structures mentioned.

standpoint (Kass and Raftery 1995). The BIC statistic, however, has a solid foundation in Bayes statistical theory and is not susceptible to the shortcomings inherent in the AIC (Kass and Raftery 1995; Raftery 1995).

That having been said, we nevertheless calculated the AIC for the series of models in table B1. In the circuit court sample, the linear trend model obtains either the smallest AIC—746 and 1,846 for compliance and busi-

ness structures—or, nearly indistinguishable from the smallest, a difference of only one point comparing values of 2,114 and 2,115, or about 5 one-hundredths of a percent, for personnel structures. So this, along with the combination of information from the BIC statistics and the likelihood ratio tests in table B1, suggests that the linear trend model is a reasonable representation of the circuit court data.

For the district court data, with larger sample sizes, the AIC indicates that the best model is the saturated model, the most complex model, for each structure. The BIC statistic, however, indicates that the linear trend model is the best for compliance structures and for business structures. At the .01 level, likelihood ratio tests also indicate that the linear model is preferred over the more complex quadratic model for compliance and business structures. Taking all of this information in concert suggests that the AIC is indeed, as noted above, overestimating the number of parameters needed to well-represent trends for compliance and business structures data. Therefore, it is only for personnel structures in the district court sample that one might reasonably conclude that the linear trend specification appears unnecessary. Here, the BIC statistic indicates that the model with no trend is the best representation of these data. Nevertheless, this evidence indicates that we are not missing any important statistical information by including the linear trend parameter in the more general model for this structure, for comparative purposes and model consistency across structures.

Finally, to be thorough and to be certain that we are not being unreasonable in using the linear trend model to represent the district court data, we estimated the linear-trend log-linear model for each structure to further test its goodness-of-fit. While not entirely consistent with the probit model specification—the probit model relies on an underlying normal distribution whereas the log-linear model does not—the log-linear model is another way to assess how well a specified trend fits these data using traditional goodness-of-fit tests (Agresti 2002). To ensure nonzero expected cell frequencies for these tests, we collapsed the data across three adjacent years, giving 11 nonoverlapping time periods from 1967 to 1999. Specifying separate linear trends for each structure (like we do for the models in table B1), the likelihood ratio (LR) and Pearson chi-square goodness-of-fit tests indicated a good fit to these data for reference ( $P > .01$  for both LR and Pearson chi-squares), relevance ( $P > .01$  for LR;  $P > .05$  for Pearson), and deference ( $P > .05$  for both LR and Pearson). Moreover, likelihood ratio tests comparing the quadratic and linear trend log-linear models indicate that the more complex quadratic specification does not capture any statistically significant information beyond that captured by the linear trend specification. Details of this analysis are available upon request.

## APPENDIX C

## Modeling and Estimation Details

To understand in more detail the modeling strategy adopted in the article, it is instructive to consider a number of related issues: (1) the joint distributions among the three latent constructs; (2) the conditional expected value of (a) the latent relevance construct given reference and (b) the latent deference construct given relevance and reference; and (3) the marginal, joint, and conditional probabilities of observed reference, relevance, and deference. We detail each in turn here, showing explicitly how our model specification, estimation, and calculations readily derive from well-known statistical foundations, and how the latent and observed distributions of reference, relevance, and deference are related with one another and with our general theory of legal endogeneity as presented in the article.

Recall from the article that, by definition, the three latent constructs making up legal endogeneity—reference, relevance, and deference—are normally distributed. Denote these here by  $Y_1$ ,  $Y_2$ , and  $Y_3$ , respectively. It is well known that the joint distribution of normal random variables is itself normal, in this case trivariate normal.

Equally well-known is the result that conditional expected values of multivariate normal random variables take on a specific form. General cases can be found in many statistics texts, such as Hogg and Tanis (1988). For our specific case, we are interested in two of these conditional expectations. First, the conditional expected value of the (normally distributed) latent relevance construct given the (normally distributed) latent reference construct is given by

$$E\{Y_2|Y_1\} = \alpha_2 + \left(\rho_{12} \frac{\sigma_2}{\sigma_1}\right) Y_1, \quad (C1)$$

where  $\alpha_2$  is a constant,  $\sigma_1$  and  $\sigma_2$  are the square roots of the variances of  $Y_1$  and  $Y_2$ , respectively, and  $\rho_{12}$  is the correlation between  $Y_1$  and  $Y_2$ . Second, the conditional expected value of the latent deference construct given the latent relevance and reference constructs is given by

$$E\{Y_3|Y_1, Y_2\} = \alpha_3 + \left(\rho_{13} \frac{\sigma_3}{\sigma_1}\right) Y_1 + \left(\rho_{23} \frac{\sigma_3}{\sigma_2}\right) Y_2, \quad (C2)$$

where  $\alpha_3$  is constant;  $\sigma_1$ ,  $\sigma_2$ , and  $\sigma_3$  are the square roots of the variances of  $Y_1$ ,  $Y_2$ , and  $Y_3$ , respectively; and  $\rho_{13}$  and  $\rho_{23}$  are the correlations between  $(Y_1, Y_3)$  and  $(Y_2, Y_3)$ , respectively.

These two conditional expectations form the basis for equations (3a) and (3b) in the article. The specific form of equations (3a) and (3b) derives from the typical probit model assumption constraining all variances to be equal to one for the latent constructs. It also derives from the not-so-

typical assumption that  $\rho_{12}$ ,  $\rho_{13}$ , and  $\rho_{23}$  are equal to one. While this assumption may appear overly restrictive, we show below that it necessarily must hold for the latent reference, relevance, and deference constructs, given the relationship among the observed reference, relevance, and deference counterparts.

At times, it may be useful to translate these conditional expectations in the latent variables directly into conditional probabilities in the observed counterparts. Unfortunately, there is no simple straightforward relationship between these two quantities in the probit model context. To see how to properly construct conditional probabilities from the probit model parameter estimates, and also to show that the correlations noted above must equal one, we next provide details for point 3, the marginal, joint, and conditional probabilities of observed reference, relevance, and deference.

Let  $D_1$ ,  $D_2$ , and  $D_3$  be dummy variables indicating observed reference, relevance, and deference, respectively. Recall that relevance can be observed only if reference is observed, and deference can be observed only if relevance is observed. Consider first the joint probability distribution for the corresponding two-way cross classification of  $D_1$  and  $D_2$ , shown in figure C1.

|       |   |                                  |   |   |
|-------|---|----------------------------------|---|---|
|       |   | $D_2$                            |   |   |
|       |   | 0                                | 1   |   |
| $D_1$ | 0 | $\pi_{00}$                       | $\pi_{01} = 0$                              | $\pi_{00} + \pi_{01} = \pi_{0+} = \pi_{00}$ |
|       | 1 | $\pi_{10}$                       | $\pi_{11}$                                  |   |
|       |   | $\pi_{00} + \pi_{10} = \pi_{+0}$ | $\pi_{01} + \pi_{11} = \pi_{+1} = \pi_{11}$ |   |

FIG. C1.—Two-way cross-classification

Here,  $\pi_{00}$  gives the probability that both reference and relevance are not observed,  $\pi_{01}$  gives the probability of observing relevance and not reference,  $\pi_{10}$  gives the probability of observing reference and not relevance, and  $\pi_{11}$  gives the probability of observing both reference and relevance. Given that relevance can be observed only if reference is observed ( $D_1 = 1$ ),  $\pi_{01}$  must equal zero, as shown in figure C1. That is, cell (0, 1) constitutes a structural zero.

From this, the marginal probabilities are constrained as shown and the cross-product ratio for the observed table is necessarily infinite positive. This, in turn, gives a correlation equal to one for any two normally distributed latent continuous constructs underlying  $D_1$  and  $D_2$ . Thus,  $\rho_{12}$  in equation (C1) above necessarily must be equal to one, giving rise to the



specific form of equation (3a) in the text. Identical results for the probabilities, cross-product ratios, and related correlations apply for relevance and deference, and for reference and deference. Thus,  $\rho_{13}$  and  $\rho_{23}$  in equation (C2) above necessarily must be equal to one, giving rise to the specific form of equation (3b) in the text.

Given the relational constraints and structural zeros in the full three-way cross classification of the observed reference, relevance, and deference, there are only four possible observed nonzero joint probabilities. These are given by  $\text{prob}\{D_1 = 0, D_2 = 0, D_3 = 0\}$ ,  $\text{prob}\{D_1 = 1, D_2 = 0, D_3 = 0\}$ ,  $\text{prob}\{D_1 = 1, D_2 = 1, D_3 = 0\}$ , and  $\text{prob}\{D_1 = 1, D_2 = 1, D_3 = 1\}$ . These four joint probabilities are, in turn, completely determined by the three marginal reference, relevance, and deference probability distributions that we model in the article. More precisely, it can be verified that these relations are given by

1.  $\text{prob}\{D_1 = 0, D_2 = 0, D_3 = 0\} = 1 - \text{prob}\{D_1 = 1\}$
2.  $\text{prob}\{D_1 = 1, D_2 = 0, D_3 = 0\} = \text{prob}\{D_1 = 1\} - \text{prob}\{D_2 = 1\}$
3.  $\text{prob}\{D_1 = 1, D_2 = 1, D_3 = 0\} = \text{prob}\{D_2 = 1\} - \text{prob}\{D_3 = 1\}$
4.  $\text{prob}\{D_1 = 1, D_2 = 1, D_3 = 1\} = \text{prob}\{D_3 = 1\}$

These relations form the basis for the log-likelihood used to estimate parameters for the probit specification given in the article. The general form of that log-likelihood is given by

$$\sum_{i=1}^N (I_1 \ln[1 - \text{prob}\{D_1 = 1\}] + I_2 \ln[\text{prob}\{D_1 = 1\} - \text{prob}\{D_2 = 1\}] + I_3 \ln[\text{prob}\{D_2 = 1\} - \text{prob}\{D_3 = 1\}] + I_4 \ln[\text{prob}\{D_3 = 1\}]),$$

where  $I_j (j = 1, \dots, 4)$  are indicator variables for the conditions given in the above four joint probabilities.

The specific form of this log-likelihood used in the article assumes the three latent reference, relevance, and deference constructs along with the corresponding equations discussed in the article. With normally distributed errors in the equations, the probabilities in the log-likelihood above are given by  $\text{prob}\{D_j = 1\} = \text{prob}\{Y_j > 0\} = \Phi\{\mu_j\}$ , where  $D_j, Y_j$ , and  $\mu_j (j = 1, 2, 3)$  are the observed, latent, and mean structures, respectively, for reference, relevance, and deference (denoted by subscripts 1, 2, and 3) and where  $\Phi\{\cdot\}$  is the cumulative distribution function for the standard unit normal distribution.

Given (1) the constraints on the joint distribution of observed reference, relevance, and deference, (2) the relation between the joint distribution and the marginal distributions of observed reference, relevance, and deference, (3) the corresponding latent dimensions of reference, relevance, and deference governing the legal endogeneity construct, and (4) the nor-

mally distributed errors in the equations for the latent reference, relevance, and deference adopted in the article, the derived log-likelihood above is precisely that obtained from a trivariate normal distribution with unit variances and correlations. Thus, model parameters for this log-likelihood can be estimated directly with any statistical package that allows users to maximize a generic log-likelihood (e.g., SAS' PROC NLP). It can also be approximated using any statistical package that has facility for estimating a trivariate probit model (e.g., SAS' PROC QLIM) by fixing correlations to nearly one for practical purposes (e.g., 0.99). The estimates presented in the article were obtained in this fashion using PROC QLIM.

Finally, in some cases, conditional probabilities from this model may be of interest. The correct form of these conditional probabilities is readily available in the probit model parameters. To simplify, consider here the reference and relevance equations from the text, and let

$$\begin{aligned} \mu_{ijt} &= X_{ijt} \beta^{\text{Ref}} + \sigma_i^{\text{Ref}} + \tau_t^{\text{Ref}} + \gamma_{it}^{\text{Ref}} \\ \mu_{2ijt} &= X_{ijt} \beta^{\text{Rel}} + \sigma_i^{\text{Rel}} + \tau_t^{\text{Rel}} + \gamma_{it}^{\text{Rel}}. \end{aligned}$$

From the above results, the conditional probability of relevance given reference is obtained by

$$\begin{aligned} \text{prob}\{D_2 = 1|D_1 = 1\} &= \text{prob}\{D_2 = 1, D_1 = 1\}/\text{prob}\{D_1 = 1\} \\ &= \text{prob}\{D_2 = 1\}/\text{prob}\{D_1 = 1\} = \Phi\{\mu_2\}/\Phi\{\mu_1\}. \end{aligned}$$

Similarly, the conditional probability of deference given relevance is obtained by

$$\begin{aligned} \text{prob}\{D_3 = 1|D_2 = 1\} &= \text{prob}\{D_3 = 1, D_2 = 1\}/\text{prob}\{D_2 = 1\} \\ &= \text{prob}\{D_3 = 1\}/\text{prob}\{D_2 = 1\} = \Phi\{\mu_3\}/\Phi\{\mu_2\}. \end{aligned}$$

These conditional probabilities can be easily empirically verified given any set of probabilities that conform to the above constraints, along with the estimated probit model parameters from the constrained log-likelihood given above.

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