The Impact of Panel Composition on Sex Discrimination Case Outcomes at the U.S. Circuit Courts

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This paper explores panel dynamics for sex discrimination cases at the U.S. Circuit Courts. It offers an interdisciplinary approach to studying panel judicial decision-making on the U.S. Circuit Courts by drawing on mainstream legal theory, contemporary political science, and the empirical legal sciences. After situating the issue within a multi-faceted theoretical framework provided by these three disciplines, hypotheses concerning the impact of the presence of female and minority judges on three-judge panels are put forth and empirically tested using logistic regression.

A. INTRODUCTION

When Supreme Court nominee Judge Sonia Sotomayor said, "I would hope that a wise Latina woman with the richness of her experiences would more often than not reach a better conclusion [in race and sex discrimination cases] than a white male who hasn't lived that life," she challenged the traditional view of the judiciary.[1] On the traditional view, the legitimacy of the judiciary depends on (at least the appearance of) the impartiality of judges. Under a system governed by the rule of law, the traditional argument goes, judges apply the law as it is rather than impose their own view of what the law should be. When Judge Sotomayor said that she would hope that a wise Latina woman would reach a different (and better) decision that a white male would reach, she seemed to suggest that not only was it unlikely, but also that it may be undesirable, for a judge to transcend his or her own experience when deciding cases at law.

A vast body of existing research examines the relationship between characteristics of judges and how they decide cases. The key characteristics of interest have been judges' ethnicity, gender, and ideology. Though the sources of the inter-judge variation continue to be contested, there is broad agreement in the field that individual judges exert some, even if minimal, direct influence over case outcomes. This phenomenon has come to be known as the "judge effect."

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1 "GOP vs. Sotomayor," *The Hill,* 2 June 2009. See also, "A Judge's View of Judging Is on the Record," *The New York Times,* 14 May 2009.

Researchers have recently explored whether individual judges exert some sort of indirect influence on case outcomes.[2] They have done so by examining inter-judge influences via "panel effects." The present study contributes to this body of literature by exploring whether individual judges exert a subtle but discernible influence over the other judges with which they work. A key place to look for panel effects is at the level of the United States Circuit Court of Appeal. This is because circuit court cases are decided by panels of three judges, with judges randomly selected from all judges in the circuit. The structure of the circuit court thus allows us to examine whether there is empirical support for indirect judge effects and, broadly, whether panel composition influences case outcomes. The present study makes a positive contribution to the literature on judicial decision-making by shifting the focus from direct to indirect judge effects and by linking this shift with recent research on panel composition and treatment effects at the circuit courts.

B. THEORY AND LITERATURE REVIEW

This study examines case outcomes for a subset of cases that reached the U.S. Circuit Courts between 1995 and 2002. The set of cases analyzed in this study are sex discrimination cases. There are advantages and disadvantages to limiting our analysis to this subset of cases. These will be discussed in greater detail later, but it is worth mentioning a few things here. By isolating this one area of the law, we enhance our ability to test indirect judge effects via panel dynamics. This is because sex discrimination is typically regarded as a gendered issue, which may stem from the fact that women have been historically discriminated against on account of their gender. Other groups, especially ethnic minorities, are similar to women in this regard because they may have more exposure to discrimination on account of ethnicity. It is therefore reasonable to suppose that women and minority judges, relative to their dominant group colleagues (i) tend to have lower thresholds for what counts as discrimination, given their possible nuanced understanding of the subtle ways practices and attitudes can be discriminatory, (ii) can more easily identify or empathize with individuals alleging discrimination, and (iii) are likely to regard sex discrimination as a serious matter requiring legal remedy.

If judges' background characteristics influence how they decide cases, several things could explain this. Judges may interpret the law in diverse ways by framing legal issues differently or by reasoning about the law using different interpretive principles. They may also perceive their judicial role differently. Furthermore, differences could be attributable to the possibility that groups share certain kinds of experiences that those outside the group do not typically share, as discussed above, and that these influence the paradigms with which judges structure and organize the world.

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[2] In their recent book, *Nudge,* Thaler and Sunstein explore how people are 'nudge-able,' by which they mean routinely influenced by those with which they work. On judicial decision-making, they write, "Federal judges on three-judge panels are affected by the votes of their colleagues." Richard Thaler and Cass Sunstein, *Nudge* (New Haven: Yale University Press, 2008).

There may be correlations, moreover, between a judge's experience and other background characteristics like ethnicity, gender, and ideology.

Given the collegial dynamics of the circuit courts, and the fact that cases are collectively decided rather than independently adjudicated, we may see that female and/or minority judges influence their male and/or white colleagues. If panel composition does affect case outcomes as hypothesized, then we should expect to see a differential between case outcomes that correlates with the presence of "non-traditional" judges on panels.[3] One reason for this expectation draws on what we know about decision-making dynamics on the circuit court. After briefs are submitted and oral arguments are presented to the panel, the three judges meet to discuss the existing law on the matter and the merits of each side's argument. Because of this, we have reason to think that each of the judges can exert some persuasive influence over the others. Yet, it is precisely for this reason that it is also plausible that a "non-traditional" judge who is in a numerical minority on the panel will be *less likely to dissent* in the face of a dominant group numerical majority.[4] A few explanations for this are dissent aversion/suppression, institutional legitimacy, and to ensure clarity for lower courts. If this is indeed the case, then we should expect to see the "non-traditional" position drowned out by the dominant views on the panel.

A brief survey of two theories of judicial decision-making will allow us to situate the present study in the larger body of literature and to identify its theoretical and empirical limitations. The two theories are formalism and attitudinalism. The limitation is that they both present a model of judicial decision-making that is too individualistic for the present context of the circuit court. A third theory—new institutionalism—avoids this limitation by emphasizing the collectivist nature of judicial decision-making via institutional dynamics of the courts. There are two competing new institutionalist hypotheses that seek to explain panel decision-making. The first is the suppressed dissent hypothesis and the second is the persuasive influence hypothesis.

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[3] For the purposes of this study, "traditional" judges refer to white male Republican-appointed judges. White male judges are regarded as traditional because historically, judges were white males. Most empirical research uses the political party of the appointing present as a proxy for ideology, where Republican-appointed judges are regarded as conservative. The present study does not depart from this convention. Moreover, because of a conservative element to the practice of law, for the purposes of this study, Republican-appointed judges are regarded as "traditional" as well. For empirical support for using the political party of the appointing President as a judge's political ideology, see Daniel Pinello, "Linking Party to Judicial Ideology in American Courts: A Meta-Analysis," *The Justice Systems Journal,* Vol. 20 No. 3 (1999): 219-254. Pinello conducted a meta-analysis on some 140 books, articles, dissertations, and conference papers in the fields of the empirical legal and political sciences from 1959 to 1999 that identified a link between judicial party affiliation and judicial ideology. The results of his meta-analysis show that roughly 38 percent of the variance of judicial ideology is explained by judge party, and this measure is higher for federal courts alone.

[4] It is important to note that this is not meant to suggest that judges (consciously) undermine their oath to be independent and to decide cases in accordance with the laws and Constitution of the United States; instead, it suggests only that reasonable people, including judges, can disagree about what the law requires, and that judges, like all of us, are not entirely impervious to their social and collegial environments.

Two Theories of Judicial Decision-Making: Formalism and Attitudinalism

The first theory to consider is the traditional view mentioned briefly at the start of this paper. The traditional view is associated with a legal model called formalism.[5] Formalists say that the facts of a case and the question presented to the court (i.e., the legal issue to be decided) are the most important things to know about a case. The strong thesis of formalism holds that formal rules alone (i.e., the "law on the books") determine legal results in particular cases. The implications of this theory are that judges have no discretion and all law is determinate.[6] The theory of formalism is largely built on the principle of *stare decisis*, which holds that judges are bound to follow existing law when the facts are substantially the same in subsequent cases. Because it is an argumentative endeavor to determine which fact situations are distinguishable from prior situations, a more modest thesis of formalism is typically defended than the strong thesis sketched above. The modest thesis of formalism is more popular and holds that *for the most part* existing law leads to legal results. The implications of the modest version of formalism are that judges have some, albeit minimal, discretion and some law is under-determinate.[7]

Unlike attitudinalism, which I consider next, formalism is not concerned with predicting outcomes, and it is for this reason that it has been largely neglected by the social sciences.[8] Formalists distinguish between statements concerning legal rules and predictions about behavior. Thus, the theory is seen as more of an "ought" theory than an "is" theory, meaning that *normatively*, judges should decide cases in accordance with formalist tenets, even if *empirically* they do not.

The second theory to consider is the attitudinal model developed in the early 1990s by two political scientists, Segal and Spaeth, which is one of the most popular "is" theories of today.[9] Proponents of the attitudinal model argue that we can predict judicial voting behavior by looking at the policy preferences of judges, and moreover, that we can predict policy

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5 While "formalism" is sometimes used to caricature a certain theory of law, I use the term without this connotation.

6 For a variant of this view, see Ronald Dworkin, Law's Empire (Cambridge: Harvard University Press, 1986). He agrees with the implications of the strong thesis, but he includes principles as part of the law in addition to rules.

7 See Lawrence Solum, "The Indeterminacy Thesis: Critiquing Critical Dogma," Chicago Law Review, Vol. 54, No. 2 (Spring, 1987): 462-503, for a defense of one formulation of the modest formalist thesis.

8 One effort to empirically examine formalism has been recently made by Michal Alberstein, "Measures of Legal Formalism," 2009 Bar Ilan University Public Law Working Paper No. 04-09. Available at SSRN: http://ssrn.com/abstract=1366158. Alberstein "aims at developing a sensitive multidimensional measure that will be used to evaluate legal texts by examining various vectors of formalism." He proposes eight key parameters of judge's decisions to be examined to determine strength of formalism. While no empirical study that I know of has yet to utilize his measurement system, future research that uses this method will make a worthy contribution to the existing empirical literature on judicial decision-making.

9 Jeffrey A. Segal and Harold J. Spaeth, *The Supreme Court and the Attitudinal Model* (New York: Cambridge University Press, 1993) and the newer edition, Jeffrey A. Segal and Harold J. Spaeth, *The Supreme Court and the Attitudinal Model Revisited* (New York: Cambridge University Press, 2002).

preferences of judges by looking at their background characteristics. This theory has been subject to extensive empirical test. The salience of the attitudinal model is obvious in light of the vast body of existing literature on judicial decision-making that examines possible connections between judges' ethnicity, gender, and ideology and their voting behavior.[10]

Perhaps the most succinct statement of the attitudinal ethos is captured in Hogarth's assertion that "one can explain more about [judging] by knowing a few things about a judge than by knowing a great deal about the facts of the case."[11] The attitudinal school is, for the most part, built upon this contention. Studies that examine the influence of judge characteristics on legal outcomes test the attitudinal model.

It was not until the 1980s that the opportunity to examine judicial voting behavior in light of judges' background characteristics was made possible. This is because until then there would have been insufficient race and gender variation among the judiciary to conduct empirical analysis on judge characteristics that included race and gender variables. After President Jimmy Carter (and later, President Bill Clinton) appointed a number of "non-traditional" judges to the bench, a vast body of literature examining how judges of different ethnicities and genders decide cases quickly amassed. Early research by Walker and Barrow examined the policy and process consequences of President Jimmy Carter's appointment of larger numbers of "non-traditional" judges to the U.S. District Court bench in the 1970s.[12] While they found negligible differences between black and white judges, they found that women, relative to men, were more likely to support personal rights claims, minority policy positions, and economic regulation. However, when using a gender-based sample, they found that males supported the "female policy position" at a higher rate than female judges (though they note that the sample size was small and suggested that this finding should be interpreted cautiously).

Cook nicely captured the salience of "gendered judging" in particular: "the organized campaign to place more women on the bench *rests* on the hope that women judges will seize decision-making opportunities to liberate other women."[13] Whether a strong stance against sex discrimination is a "female policy position" is admittedly a questionable conjecture,

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[10] Judge Posner argues that empirical evidence generally supports the attitudinal model. See Richard Posner, *How Judges Think* (Cambridge: Harvard University Press, 2008).

[11] John Hogarth, *Sentencing as a Human Process* (Toronto: University of Toronto Press, 1971).

[12] Thomas Walker and Deborah J. Barrow, "The Diversification of the Federal Bench: Policy and Process Ramifications," *The Journal of Politics,* Vol. 47, No. 2 (Jun., 1985): 596-617.

[13] Beverly B. Cook, "Will Women Judges Make a Difference in Women's Legal Rights?" in *Women, Power, and Political Systems,* ed. Margherita Rendel (London: Croom Helm, 1981), 216. See also, James J. Brudney, Sara Schiavoni, and Deborah J. Merrit, "Judicial Hostility Toward Labor Unions?: Applying the Social Background Model to a Celebrated Concern," *Ohio State Law Journal,* Vol. 60, No. 5 (1999): 1675-1772.

yet for reasons already articulated, it makes sense to suppose that if gendered judging does arise, sex discrimination is one context where it may be most apparent. Because women have experienced both de jure and de facto discrimination, the vestiges of such discrimination may still reside in current social attitudes. For this reason, women may be more sensitive to sex discrimination claims and have a lower tolerance or threshold for recognizing a particular situation as an instance of discrimination.[14] Even if women judges attempt to remain impartial in exercising their official capacity, there may be some sort of unconscious tendency toward identifying or empathizing with individuals alleging they have been discriminated against on account of their gender. Prior research has indicated that there is some support for the theory of gendered judging in general.[15] Yet, other research has not supported such findings.[16]

Early research by Gruhl, Spohn and Welch suggested that women tend to be more liberal than men in a variety of policy areas.[17] If women are generally more liberal than men, and this finding holds for judges in their official capacity, then perhaps what appears to be gendered judging could be explained by ideological differences between the genders. In other words, gender could be driving ideology, which in turn drives voting behavior (rather than, say, gender driving voting behavior directly). Gruhl et al. conclude that ideological differences obtain in some instances and not others.[18]

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[14] On this point, see, for example, Suzanna Sherry, "The Gender of Judges," *Law and Inequality,* Vol. 4 (1986): 159-170; Patricia Yancey Martin, John R. Reynolds, and Shelley Keith, "Gender Bias and Feminist Consciousness among Judges and Attorneys: A Standpoint Theory Analysis," *Signs,* Vol. 27, No. 3 (2002): 665-701; and Mary L. Clark, "One Man's Token is Another Woman's Breakthrough?: The Appointment of the First Women Federal Judges," *Villanova Law Review,* Vol. 49 (2004): 487–548.

[15] See Nancy Crowe, "The Effects of Judges' Sex and Race on Judicial Decision Making on the U.S. Courts of Appeals, 1981-1996," Ph.D. thesis, University of Chicago (1999); Elaine Martin and Barry Pyle, "State High Courts and Divorce: The Impact of Judicial Gender," University of Toledo Law Review, Vol. 36 (2005): 923–947; Madhavi McCall, "Court Decision Making in Police Brutality Cases, 1990-2000," American Political Research, Vol. 33 (2005): 56–80; Jennifer L. Peresie, "Female Judges Matter: Gender and Collegial Decisionmaking in the Federal Appellate Courts," Yale Law Journal, Vol. 114 (2005): 1759–1790; Jennifer A. Segal, "Representative Decision Making on the Federal Bench: Clinton's District Court Appointees," Political Research Quarterly, Vol. 53 (2000): 137–150; and Fred O. Smith, "Gendered Justice: Do Male and Female Judges Rule Differently on Questions of Gay Rights?" Stanford Law Review, Vol. 57 (2005): 2087–2134. Boyd et al., p. 2, point to these studies to support the theory that sex plays a significant role in judicial decisions.

[16] Kenneth L. Manning, "¿Como Decide? Decision-Making by Latino Judges in the Federal Courts," Paper presented at the annual meeting of the Midwest Political Science Association, Chicago, IL (2004); Wendy L. Martinek, "The Effect of Confirmation Politics on the United States Courts of Appeals Decision Making," Paper presented at the annual meeting of the American Political Science Association, Philadelphia, PA (2003); Gregory C. Sisk, Michael Heise and Andrew P. Morriss, "Charting the Influences on the Judicial Mind: An Empirical Study of Judicial Reasoning," *NYU Law Review,* Vol. 73 (1998): 1377–1500; and Sarah Westergren, "Gender Effects in the Courts of Appeals Revisited: The Data Since 1994," *Georgetown Law Journal*, Vol. 92 (2004): 689–708. Boyd et al., p. 2, point to these studies as not finding evidence of gendered judging.

[17] John Gruhl, Cassia Spohn, and Susan Welch, "Women as Policymakers: The Case of Trial Judges," *The American Journal of Political Science,* Vol. 25, No. 2 (May, 1981): 308-322. Another early explanation that was offered to explain observed differences in voting behavior between male and female judges was that women and men typically come to the bench through different career paths. See, for example, Susan Welch, "Recruitment of women to public office: A discriminant analysis," *Western Political Quarterly,* Vol. 31 (September, 1978): 372-380.

[18] For an early account of this view, see Gruhl et al. (1981), who surmise that "attitudinal differences between men and women might carry over and affect judges' decision-making behavior, especially when issues closely related to sex roles are concerned," pp. 309-310. They hypothesized that female judges would be more lenient than male judges with convicting for certain crimes. Their findings show no evidence of differences in conviction patterns between female and male judges overall; interestingly, however, they did find that female judges were more likely than male judges

We can also extend our reasoning about how female judges may be more sensitive to claims of discrimination to ethnic and racial minority judges. For similar reasons that female judges may have lower thresholds for what constitutes (unlawful) discrimination, minority judges may also have lower thresholds for (unlawful) discrimination. Because minority groups have also been historically discriminated against, perhaps they, too, will be more sensitive to plaintiffs' allegations and more likely to vote in favor of plaintiffs in sex discrimination cases.[19]

A Third Theory on Panel Dynamics: New Institutionalism

The third theory to consider is new institutionalism. This theory looks at the institutional context of judicial decision-making to explain judicial voting behavior and case outcomes. New institutionalism holds that structural features of courts can explain patterns of behavior of court actors. Recent research on panel dynamics relies on new institutionalist assumptions about the structural workings of the courts.

Farhang and Wawro examine whether and how women and nonwhites (together, what they call "minority judges") influence legal policy on issues typically regarded as of particular concern to women and nonwhites.[20] They find that norms associated with panel judging allow women greater influence over case outcomes even when they are outnumbered on a panel. Specifically, their findings "demonstrate that the presence of a woman on a panel is a powerful predictor of panel decisions in discrimination cases, and that examining only individual-level variables measuring judges' characteristics is inadequate for drawing inferences about the influence of minority judges on case outcomes."[21] These findings support the deliberative explanation of panel decision-making, which views the process as one involving collegiality rather than an isolated decision-making. They write, "The central idea of the deliberative model of panel

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to sentence female defendants to a term of incarceration. They explained male judges' leniency with women defendants as form of judicial paternalism, p. 320. It is worth noting that judicial paternalism could also potentially be used as an explanatory device in the present study if we do not find a difference in voting behavior between male and female judges in the sex discrimination cases examined, or if we find that male judges are more likely than female judges to find for the plaintiff (in this case, the woman or women) alleging discrimination.

[19] This requires the assumption that discrimination *per se* is perceived similarly, rather than perceived differently depending on the specific form of discrimination in question (e.g., against one's race versus against one's gender). Research conducted by Gowan and Zimmerman (1996) suggests that Hispanics are especially sensitive to sexual discrimination in the workplace; see Mary A. Gowan and Raymond A. Zimmerman, "Impact of ethnicity, gender, and previous experience on juror judgments in sexual harassment cases," *Journal of Applied Social Psychology,* Vol. 26, No. 7 (Apr., 1996): 596-617. On the other hand, Platter and Thomas found no evidence of race effects in perceptions of sexual harassment; see M.A. Platter and R.E. Thomas, "The impact of job performance, gender, and ethnicity on the managerial review of sexual harassment allegations," *Journal of Applied Social Psychology,* Vol. 28 (1998): 52-70. Note, however, that both studies are limited in their generalizability to the present study as they apply to jurors and managers, respectively, rather than legal officials.

[20] Sean Farhang and Gregory Wawro, "Institutional Dynamics of the U.S. Court of Appeals: Minority Representation Under Panel Decision Making," *The Journal of Law, Economics, and Organization*, Vol. 20, No. 2 (2004): 299-330.

[21] Ibid, 300.

decision making is that judges take one another's views seriously in the deliberative process" and judges "can be swayed by an articulate and well-reasoned argument from a colleague with a differing opinion."[22]

To recap, the research discussed in this literature review was drawn from mainstream legal theory, contemporary political science, and the empirical legal sciences to capture the multidimensional nature of judicial decision-making and the perspectival differences between disciplines. The present study builds on the work of these disciplines to construct a model that offers a powerful predictor of pro-plaintiff case outcomes in sex discrimination cases at the U.S. Circuit Courts. The next section describes the data that is used to conduct the empirical analysis.

C. DATA

The dataset used in this study was created by Cass Sunstein and expanded by Lee Epstein. The data record case outcomes for 415 cases, with three judges voting on each case for a total of 1,245 observations (n = 1245). Standard errors are clustered at the judge level to avoid problems associated with recurring judges, such as yielding incorrect variances and incorrect standard errors. There are 312 clusters for judges.

Table 1: Distribution of Case Outcomes

Case Outcome	Frequency	Percent	Total
Against plaintiff	813	65.30	65.30
For plaintiff	432	34.70	100.00
Total	1245	100.00	

OPERATIONALIZATION OF VARIABLES AND ANALYTICAL APPROACH

The dependent variable in this study, case outcome, is categorical rather than continuous. Specifically, the dependent variable is a binary variable, which assumes a Bernoulli distribution. A case outcome for the plaintiff is coded as a 1 and an outcome against the plaintiff is coded as a 0. Because of the nature of the dependent variable, the analytical approach used in this study is to predict the likelihood of case outcomes in favor of the plaintiff in sex discrimination cases. This is done by regressing case and panel characteristics on case outcomes using logistic regression (logit) to predict the

[22] Ibid, 308, citing Robert A. Carp and Ronald Stidham, *The Federal Courts,* 2nd ed. (Washington, DC: CQ Press, 1991), 176.

probability of pro-plaintiff case outcomes. The estimates of the b's are obtained through the method of maximum likelihood estimation. Odds ratios are calculated to assess the magnitude of the estimates for the b coefficients.

Independent variables capturing case characteristics (i.e., facts about the case and laws under which the plaintiff sued) are used from the Sunstein-Epstein dataset. These independent variables are binary (0/1) variables, coded with 1 when the specific property obtains and 0 when it does not. These are: all female plaintiffs,[23] denied promotion, not hired, fired, unequal pay, pregnancy, emotional, damages, procedural, plaintiff sued under state law, Fourteenth Amendment claim filed, First Amendment claim filed, Section 1981 claim filed, Section 1983 claim filed, Title IX claim filed, and the direction of lower court decision. The first nine variables capture facts about the case. The remainder of the variables, with an exception for the direction of the lower court decision, which is an institutional feature, capture the law(s) under which the plaintiff sued.

Key independent variables of interest were constructed from the original dataset to capture panel composition properties. Three of these independent variables are: the number of female judges on the panel, number of non-white judges on the panel, and the number of Democratic judges on the panel. Possible values associated with these variables range from 0 to 3. Using these variables, interaction terms between panel composition and case characteristics were created; for example, variable PJI captures a plaintiff/judge interaction. In addition, an interaction term was created--variable PJI--to capture a plaintiff-judge interaction. Finally, circuit court fixed effects were created to control for possible confounding inter-circuit influences. There are 12 federal circuit courts; circuits are grouped by region, with minor exceptions for non-continental states and the territory of Puerto Rico. In this study, the First Circuit is the reference group.[24]

E. MODEL SPECIFICATIONS AND HYPOTHESES

The first model uses logistic regression to regress facts about the case and the laws under which the plaintiff sued on case outcome, controlling for the direction of the lower court decision. This model does not include panel composition variables that capture the number of females, minority, and liberal judges on the panel so as to isolate the predictive power of facts and law alone. Both the strong and the modest versions of the formalist legal theory discussed in the literature review suggest that this model should perform rather well. The direction of the lower court decision is

[23] Some cases have more than 1 plaintiff.

[24] Circuit 1 includes: Maine, New Hampshire, Massachusetts, Rhode Island, and Puerto Rico.

controlled for in case there are different intercepts associated with the likelihood of voting for the plaintiff depending on how the lower court voted.

$$Y = b_0 + b_1\text{Vector of Facts} + b_2\text{Vector of Laws} + b_3\text{Lower\_dir} + e \quad \text{[Eq.1]}$$

The second model includes panel composition variables to capture the number of females, minority, and Democratic-appointed judges on the panel. The attitudinal theory suggests that case outcomes are influenced not only by facts and law but also by the policy preferences of the judges who decide the case, which correlates with judge characteristics. Because the dependent variable looks at case outcomes for panels, rather than independent decision-making, including panel composition variables rather than individual judge characteristics will allow us to see whether their attitudinal influences on case outcomes are discernible from the data.

$$Y = b_0 + b_1\text{Vector of Facts} + b_2\text{Vector of Laws} + b_6\text{Lower\_dir} + b_4\text{Num\_fem} + b_5\text{Num\_min} + b_6\text{Num\_dem} + e \quad \text{[Eq. 2]}$$

The third model tests for possible interaction effects between panel composition and a particular case characteristic. Specifically, it includes interaction term PJI, which interacts cases where all plaintiffs are female with panels where at least one judge is female. The reason for including this interaction term is that any gendered judging among female judges may be the most prominent in cases where all individuals alleging discrimination are female.

$$Y = b_0 + b_1\text{Vector of Facts} + b_2\text{Vector of Laws} + b_6\text{Lower\_dir} + b_4\text{Num\_fem} + b_5\text{Num\_min} + b_6\text{Num\_dem} + b_7\text{PJI} + e \quad \text{[Eq. 3]}$$

The fourth model includes circuit fixed effects to control for potential confounding influences across circuits. It is not uncommon for there to be divergences in doctrinal analysis and interpretation across circuits. When the divergence is persistent, deep, or consequential, the Supreme Court will often hear a case to clarify constitutional requirements. But because it may take some time for a case to arrive on the Supreme Court's docket and in light of the limited time frame of the data, we have reason to suspect there are circuit divergences present. Circuit fixed effects can control for these confounding divergences.

$$Y = b_0 + b_1\text{Vector of Facts} + b_2\text{Vector of Laws} + b_6\text{Lower\_dir} + b_4\text{Num\_fem} + b_5\text{Num\_min} + b_6\text{Num\_dem} + b_7\text{PJI} + e_{it} \quad \text{[Eq. 4]}$$

Using the above specified models, the first research hypotheses is:

H_0: There is no change in predicting the likelihood of a pro-plaintiff case outcome when at least one "non-traditional" judge is added to the panel

H_1: Panels with at least one female judge have higher odds of voting for the plaintiff than panels with no female judges on the panel

H_2: Panels with at least one nonwhite judge have higher odds of voting for the plaintiff than panels with no nonwhite judges on the panel

H_3: Panels with at least one Democrat-appointed judge have higher odds of voting for the plaintiff than panels with no Democrat-appointed judges on the panel

The second research hypothesis concerns the fit of the model and is:

H_0: Including panel composition variables for the number of "non-traditional" judges on the panel does not significantly improve the fit of the model

H_1: Including panel composition variables for the number of "non-traditional" judges on the panel does significantly improve the fit of the model

The third research hypothesis tests for possible confounding inter-circuit influences:

H_0: Including circuit fixed effects does not affect the model's ability to predict the likelihood of a pro-plaintiff case outcome, nor does it significantly change the odds associated with any independent variables of interest

H_1: Including circuit fixed effects enhances the model's ability to predict the likelihood of a pro-plaintiff case outcome and changes the odds associated with panel composition

F. FINDINGS AND DISCUSSION

Table 3 below presents results for the models specified above. We can compare the findings between models, as they were drawn from the same sample. Comparison between models allows us to evaluate the research hypothesis that panel composition variables are statistically significant regressors on case outcome and also assess whether including panel composition variables improves the overall fit of the model. Moreover, the inclusion of circuit fixed effects controls against potential influences between circuits that could be biasing the estimators of interest and allows for further evaluation in light of the research hypothesis.

Table 3: Logistic Regression

	Model 1	Model 2	Model 3	Model 4
Variable	**Odds Ratio (SE)**	**Odds Ratio (SE)**	**Odds Ratio (SE)**	**Odds Ratio (SE)**
Lower Court Decision	1.94** (.27)	2.17** (.33)	2.33** (.34)	2.47** (.39)
Female plaintiff	1.09 (.19)	1.10 (.20)	.63* (.13)	.69† (.14)
Damages	2.11** (.39)	1.98** (.37)	1.92** (.35)	2.04** (.40)
Procedural	.97 (.22)	.93 (.20)	1.00 (.22)	1.11 (.27)
State Law	.83 (.14)	.84 (.14)	.82 (.13)	.84 (.16)
Denied Promotion	.69* (.11)	.73† (.12)	.74† (.13)	.83 (.14)
Not Hired	1.10 (.23)	1.12 (.23)	1.43† (.30)	1.46† (.33)
Fired	.83 (.11)	.82 (.11)	.79† (.11)	.80 (.11)
Unequal Pay	1.59** (.28)	1.74** (.30)	1.66** (.29)	1.71** (.30)
Pregnancy	1.60* (.23)	1.58* (.36)	1.47 (.36)	1.82* (.52)
Emotional	.97 (.23)	1.10 (.25)	1.04 (.22)	1.49 (.36)
14th Amendment	1.45 (.47)	1.73 (.59)	1.48 (.51)	1.54 (.51)
1st Amendment	.22** (.13)	.21** (.12)	.23** (.13)	.17** (.10)
Section 1981	1.76** (.36)	1.53* (.33)	1.43 (.31)	1.00 (.24)

Section 1983	1.16 (.39)	1.21 (.42)	1.30 (.44)	1.55 (.51)
Title IX	2.61† (1.37)	1.98 (1.05)	2.08 (1.13)	2.04 (1.02)
Number Female		1.22† (.15)	.52** (.11)	.46** (.10)
Number Minority		1.22 (.16)	1.31† (.18)	1.45** (.20)
Number Democrat		1.74** (.14)	1.62** (.13)	1.62** (.15)
PJI			3.85** (1.10)	4.13** (1.25)
Note: circuit fixed effects not shown ** = p < .01 * = p < .05 † = p < .10	Log likelihood = -749.375 Wald Ch2(16) = 113.99**	Log likelihood = -715.678 Wald Chi2(19) = 147.49**	Log likelihood = -704.865 Wald Chi2(20) = 161.22**	Log likelihood = -676.898 Wald Chi2(31) = 228.20**

As the table indicates, the panel composition variables do, for the most part, achieve significance. They are highly significant in Model 3 after including an interaction term for number of females on the panel interacted with cases where all plaintiffs are female and in Model 4 after taking into account circuit fixed effects. With the exception of the variable capturing the number of Democrat-appointed judges on the panel, the panel variables are not powerful predictors of a pro-plaintiff outcome on Model 2. The findings suggest that political affiliation of the appointing president may be more useful when it comes to predicting sex discrimination case outcomes at the circuit court level if we have no information beyond case characteristics.

The results for Model 2 show that the number of females on the panel is only marginally significant before we interact it with the gender composition of the plaintiff or add circuit court fixed effects. The finding suggests that for each female judge added to the panel, the odds of a pro-plaintiff vote increase by 22 percent. Though this may seem substantively significant, because this coefficient is only marginally statistically significant we should interpret it cautiously.

Model 3 includes the interaction term between the number of females on the panel and cases with all female plaintiffs to see whether any gendered judging could be observed here. The number of females on the panel is highly significant in this model, but somewhat surprisingly, an increase in number of females on the panel is associated with a decrease in the odds of a pro-plaintiff outcome. Specifically, the findings indicate that with each additional female serving on the panel, the odds of a pro-plaintiff outcome are decreased by approximately 48 percent. Perhaps we can explain this finding in light of the highly significant association found between the interaction term PJI (plaintiff/judge interaction) and a pro-plaintiff case outcome. It may be the case that PJI is absorbing all those observations where females on the panel increase the odds of a pro-plaintiff outcome. The estimate on PJI indicates that for panels with at least one female judge on them and where all plaintiffs are female, the odds of a pro-plaintiff outcome increases by 285 percent. If this estimate is accurate then it is a very substantively significant finding, because it may expose a path through which gender influences judging.[25] Again, Model 4 shows that the number of females on the panel is highly significant, but associated with a decrease in the odds, while PJI is highly significantly associated with an increase in the odds of a pro-plaintiff outcome.

Partially contrary to the hypothesis articulated in the previous section, the number of minority or nonwhite judges on the panel does not appear to be a very powerful predictor of the likelihood of a pro-plaintiff outcome. For Model 2, the panel composition variable for the number of minority judges on the panel does not achieve statistical significance. The variable does on Model 3, with the inclusion of PJI, but only marginally so. However, what is interesting here is not the level of significance achieved by the minority panel variable but that the minority panel variable becomes at all significant when we introduce the interaction term. One possible explanation for this observation is that the female panel variable in Model 2 was doing some of the work of the minority panel variable, thus absorbing some of its affect, so it did not appear to be significant. In Model 3, with the variation associated with the female panel variable being captured by the interaction term, perhaps the association between the predicted case outcome and the minority panel variable becomes discernible. This explanation gains some support in light of the findings from Model 4. On this model the number of

[25] While the literature review stressed the unique experience of women and minorities with regard to discrimination, our legal system guarantees equal treatment under the law. If this finding means in any way that sex discrimination claims by male plaintiffs are being taken less seriously by our female judges, it signals a problem for the rule of law. Of course, far more than the present inquiry can provide would be needed to substantiate any such claim.

minority judges serving on the panel is highly significant. For each additional minority judge added to the panel, the odds of a pro-plaintiff case outcome are increased by 45 percent.

The third panel composition variable included in this study is the number of Democrat-appointed judges serving on the panel. As noted briefly above, the findings indicate that this may be the most powerful predictor of pro-plaintiff sex discrimination case outcomes. In all three models where panel composition variables are included, the variable for the number of Democrat-appointed judges achieves significance at the .01 level. Model 2 indicates that for every Democrat-appointed judge on the panel, the odds of a pro-plaintiff case outcome occurring increase by 74 percent. When the interaction term is introduced in Model 3, and circuit court fixed effects are added in Model 4, this estimate drops to 62 percent; these are still substantively significant findings in light of the statistical significance level achieved by the variable.

Another interesting finding that is worth noting is that the case characteristics that achieve statistical significance in Model 1 remain relatively stable with significance and intensity after we further specify the model. When we include panel composition variables, the interaction term, and fixed effects for circuits, for example, the direction of the lower court decision remains a highly significant predictor of the circuit court case outcome. If we think about court dynamics along new institutionalist lines, this finding makes some sense: lower court judges decide cases keeping in mind the composition of the upper court to avoid getting reversed.[26]

The variable for damages is also highly significant in all four models. This variable captures whether the plaintiff asked for compensation for damages caused by the discrimination. For example, if a plaintiff alleges discrimination in the form of unequal pay, then damages would typically be sought in the amount the plaintiff was deprived from equitable earnings. Model 1 indicates that a plaintiff who claims damages, relative to one who does not, is associated with 111

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[26] Absent sufficient empirical support, this statement is at best a hypothesis. For some empirical support, see Fischman's finding that "lower court judges will rule more moderately when they are averse to being overruled by the higher court"; Josh Fischman, "Uniformity of Interpretation in a Hierarchical Court," unpublished manuscript, available at: http://ase.tufts.edu/econ/events/seminars/2005-2006/fischmanCourt.pdf. But for contrary findings, see David E. Klein and Robert J. Hume, "Fear of Reversal as an Explanation of Lower Court Compliance," *Law & Society Review,* Vol. 37, No. 3 (Sep., 2003): 579-606. Klein and Hume find "the substantial congruence between circuit court decisions and Supreme Court preferences in the search and seizure cases analyzed here does not arise from circuit judges' fear of having their decisions reversed," p. 597. Their findings challenge what has now become a widely held view that judges are influenced by the prospects of reversal found, for example, in Donald R. Songer, Jeffrey A. Segal, and Charles M. Cameron, "The Hierarchy of Justice: Testing a Principal-Agent Model of Supreme Court-Circuit Court Interactions," *American Journal of Political Science,* Vol. 38, No. 3 (Aug., 1994); Frank B. Cross and Emerson H. Tiller, "Judicial Partisanship and Obedience to Legal Doctrine: Whistleblowing on the Federal Courts of Appeals," *The Yale Law Journal,* Vol. 107, No. 7 (May, 1998): 2155-2176; and Matt Spitzer and Eric Talley, "Judicial Auditing," *Journal of Legal Studies,* Vol. 29 (June 2000).

percent higher odds of a pro-plaintiff outcome, holding all else constant. In Model 2, the association is at 98 percent higher odds; in Model 3, at 92 percent higher odds; and finally, in Model 4, at 104 percent higher odds of a pro-plaintiff outcome. Though it may seem counterintuitive that a plaintiff who claims damages (and, say, asks for monetary compensation) is more likely to win a sex discrimination suit, some explain that by claiming damages, plaintiffs signal to the court and perhaps the jury that their experience was real and has or had serious consequences on their lives. Whatever symbolic value there may be to not asking for compensation in the form of damages, plaintiffs who did not do so between 1995 and 2002 did not fare all that well in the U.S. Circuit Court in terms of getting a case outcome in their favor.

Another highly significant case characteristic variable in all four models is unequal pay. In Models 1 through 4, the odds associated with a pro-plaintiff vote for those who claim unequal pay (relative to those who do not) range from 50 percent higher odds in Model 1 to 74 percent higher odds in Model 2. The odds ratios associated with unequal pay for Models 3 and 4 are in between. Perhaps one reason plaintiffs who allege unequal pay may fare well in court is that unequal pay is something that is relatively easy to show through documentary evidence. Unlike being denied a (discretionary) promotion, for example, in most professions documentation exists that could substantiate a claim of unequal pay.

Among the legal issue variables, the First Amendment variable was the only variable that achieved statistical significance in all four models. Specifically, if a plaintiff sued under the First Amendment, as opposed to not suing under the First Amendment, the odds of a pro-plaintiff finding decreased 78 percent in Model 1, 79 percent in Model 2, 77 percent in Model 3, and 83 percent in Model 4. This finding makes sense in light of the fact that the First Amendment is typically regarded as being a part of a different doctrinal department than discrimination, which is more at home, so to speak, under the Fourteenth Amendment.[27]

[27] In spite of this, it is interesting to note that the variable capturing whether the plaintiff(s) sued under the Fourteenth Amendment does not achieve statistical significance in any of the four models. One possible explanation for this is that the small number of available cases inhibits rigorous empirical test. Of the cases recorded in the Epstein-Sunstein dataset, only a very small number (and percentage) of them included a Fourteenth Amendment claim. This could possibly be the result of the state action doctrine, a threshold requirement that must be satisfied before triggering equal protection under the Fourteenth Amendment, which requires that the discriminator be a state actor. A close survey of the data shows a modest number of state and governmental defendants. A future study might contribute to the literature by examining whether the status of the defendant (state actor, corporation, private university) has any significant bearing on sex discrimination case outcomes.

In spite of some surprising findings on particular independent variables of interest, the model as a whole performed rather well. The Chi Square statistic yielded from the Wald test was significant at the .01 level, as indicated on the table above. This finding regarding the fit of the model was corroborated by the likelihood ratio test and the Lagrange multiplier test. To further assess the performance of the final model (Model 4), predicted probabilities were generated on case outcome. Table 4 below presents the results.

Table 4: Predicted Probabilities for Case Outcome

True

Classified	**+**		**Total**
+	198	108	306
-	234	705	939
Total	432	813	1245

% correctly predicted = 72.53

Table 4 details the estimated predicted probabilities on case outcome for the final logit model estimated (Model 4). The table displays estimates for Type I and Type II errors associated with the final model. The model predicts 939 cases to be case outcomes against the plaintiff, but the data records 813 case outcomes against the plaintiff. Similarly, the model predicts 306 pro-plaintiff outcomes, but 432 case outcomes were pro-plaintiff. The predicted probability test shows that, on the whole, the percent of cases correctly predicted by the model is about 72.53 percent.

G. LIMITATIONS AND CONCLUSION

One limitation to the present study is the possibility of omitted variable bias. The data did not capture potential confounding variables such as the race of the plaintiff. Another omitted variable that may be important to include is the number of plaintiffs in each case. The inability to control for confounding variables poses a threat to the internal validity of the study. Future research that tests for potential judge/plaintiff interactions using other plaintiff characteristics, as well as the number of plaintiffs per suit, would make a worthy contribution to the existing literature.

Second, the present study is limited insofar as it relies on assumptions about how individual judges decide that have not been empirically verified using the Sunstein-Epstein dataset. In particular, it was assumed that certain patterns of

behavior would obtain among judges of certain genders and ethnicities, without subjecting this assumption to empirical test using the sample of judges observed in the data. This could lead to inaccurate estimates on the ß coefficients.

A third limitation is that the potential of simultaneity between judge ideology and voting behavior is also a threat to the internal validity of the study. While we attempted to avoid this problem by using the party affiliation of the appointing president to capture judicial ideology, there may still be simultaneity present. Specifically, it is possible that a judge's behavior (prior to circuit court appointment) impacts his or her likelihood to be appointed by a particular president and/or that a judge's appointment to the circuit court by a particular president influences the way he or she judges once appointed. To establish temporal precedence, we would want to collect data on voting behaviors of judges before they were appointed to the circuit court to assess whether any discernable shift in voting behavior has taken place.

Fourth, this study is limited insofar as it fails to account for other institutional dynamics of the courts, most notably the hierarchical structure of the judiciary. Beyond controlling for the direction of the lower court decision, the present study did not account for structural influences of the institution. Recent research by Kastellec suggests that the ability of individual judges on panels to influence their colleagues varies with whether the minority judge's ideological position is in accord with the ideological orientation of the circuit as a whole as well as upon whether the minority judge is ideologically aligned with the Supreme Court.[28] Kastellec examined collegial politics on three-judge panels at the circuit court level using a principal-agent model and found that "a minority judge's ability to influence her colleagues will increase if her preferences are aligned with the full circuit, and increase further if her preferences are aligned with the Supreme Court."[29] To capture panel dynamics assuming nested data, a sophisticated methodology such as hierarchical linear modeling or another multilevel modeling technique may improve the findings.

A fifth limitation to the present study is low generalizability. This study examined case outcomes at the circuit court level for a subset of all cases that come before the circuit courts. Panel dynamics observed in the context of sex discrimination cases may not be observed in other contexts. Moreover, panel dynamics of the U.S. Circuit Courts may be

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[28] Jonathan Kastellec, "Asymmetric Incentives and Collegial Dynamics in the Judicial Hierarchy: Decision Making on Three-Judge Panels," paper presented at the 2008 annual meeting of the American Political Science Association, Boston, Massachusetts.

[29] Ibid, 27.

unrepresentative of panel dynamics generally (for example, the dynamics of Supreme Court adjudication). Thus, whether the findings of this study can be extrapolated onto other legal domains is yet to be determined.

A final limitation to the present study concerns the operationalization of the key constructs of interest. The panel composition variables measured the number of females, minorities, and Democrat-appointed judges on each panel. The variables did not, however, control for the presence of a single "non-traditional" judge on the panel, as would be required to rigorously test the hypothesis of interest. Because this study did not isolate only those cases where a single "non-traditional" judge served on the panel, it was unable to adjudicate between the two new institutionalist hypotheses—the suppressed dissent hypothesis and the persuasive influence hypothesis—that have been put forth to explain the dynamics of paneled judging.

In spite of these limitations, the present study contributed to the literature by shifting the focus from direct judge effects to indirect judge effects through the lens of new institutionalism. The findings showed that panel composition variables capturing the number of certain "non-traditional" judges on the panel are important predictors of the likelihood of a pro-plaintiff outcome in sex discrimination cases at the U.S. Circuit Court. This study also lends some support to the traditional legal theory of formalism. Even after the inclusion of attitudinal indicators and circuit fixed effects, certain facts remained highly significant in the empirical model. In light of this, we can conclude that there is some independent influence associated with what are typically called "legally relevant factors" and that not all influences on case outcomes are attitudinal. This is not to suggest that attitudinal influences do not exert influences over case outcomes. Indeed, the findings suggest that attitudinal influences do exert some influence over whether the panel voted in favor of the plaintiff. In the final analysis, this study leads us to believe that there may be some truth to the view we attributed to Judge Sotomayor at the opening of this paper. Judges' backgrounds do seem to play a role in how they decide cases. But we should not exaggerate this role, nor allow it to blind us to the independent influence that facts have on case outcomes at the U.S. Circuit Courts.

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