Institutional Dynamics on the U.S. Court of Appeals: Minority Representation Under Panel Decision Making

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This article assesses how the institutional context of decision making on three-judge panels of the federal Court of Appeals affects the impact that gender and race have on judicial decisions. Our central question is whether and how racial minority and women judges influence legal policy on issues thought to be of particular concern to women and minorities when serving on appellate panels which decide cases by majority rule. Proper analysis of this question requires investigating whether women and minority judges influence the decisions of other panel members. We find that the norm of unanimity on panels grants women influence over outcomes even when they are outnumbered on a panel.

1. Introduction

The goal of this article is to examine the way in which certain institutional features of three-member appellate panels on the federal bench shape decision-making dynamics among judges and influence the legal policy produced by these panels. We argue that the standard approach in the judicial politics literature of accounting for the influence of judges' characteristics only on their *own* decision making is inadequate for explaining the behavior of federal appellate panels. This highly individualist approach neglects the institutional fact that cases on the federal Court of Appeals are decided by majority vote on three-judge panels (with the rare exception of en banc decisions), and thus accurate assessment of judges' attributes on panel decisions requires investigating whether and to what extent judges' attributes influence not only their own votes, but those of their panel colleagues.

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Llewellyn (1960:515–16) long ago leveled the criticism against judicial behaviorist scholarship on appellate courts that "analysis of individuals and averaging of their attributes" could not suffice to explain the "corporate behavior" of appellate courts. Several recent scholars have found evidence that the voting of federal appellate judges when reviewing agency decisions is influenced not only by their own ideological position, but also by the ideological position of other members of the panel (Revesz, 1997; Cross and Tiller, 1998). However, because these studies were focused on issues of judicial review of agency actions, neither their theoretical nor their empirical emphasis was on attempting to specify and untangle the institutional mechanisms and interactive dynamics that produced the results they found, nor did they attempt to ascertain whether the findings can be generalized beyond the influence of ideology in the highly politically salient context of judicial review of agency policy making. Nevertheless, the findings lend provocative support to Llewellyn's prescient institutionalist critique of narrowly individualist approaches to studying appellate courts, and they inspire us to attempt a systematic analysis of how appellate panels translate heterogeneous views into policy output.

In order to pursue this question, we examine the impact of minority representation on federal appellate decision making both because we regard the policy question to be of public significance, and because it is an area in which the matter of whether and how minority views influence panel decision making has especially important consequences. For ease of exposition, we refer to both nonwhites and women as "minority" judges because both are in a small minority relative to white men on the federal bench. We demonstrate with argument and evidence that past studies of minority representation on federal appellate panels have relied on research designs that fail to adequately capture minority influence on legal policy because they ignore institutional context. Our 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. We argue that this phenomenon is driven by the institutional norm of unanimity on federal appellate panels, which fosters deliberation and compromise that allows numerical minorities on panels to influence case outcomes.

The article proceeds as follows. In Section 2 we review the literature on the influence of race and gender on judicial decision making. In Section 3 we discuss how the institutional context of federal appellate decision making, particularly the strong norm of panel unanimity, might affect minority representation and lay out the hypotheses we test in the article. Section 4 discusses the data and our analysis. Section 5 discusses our results and concludes.

2. Prior Studies of the Influence of Race and Gender on Judicial Decision Making

Before we discuss our arguments about the importance of institutional context, it is necessary to make clear the theoretical and empirical stakes by reviewing existing scholarship on judicial decision making and minority representation. Pitkin's (1967) classic distinction between descriptive and substantive representation is useful for distinguishing two senses in which the judiciary could be thought to be representative. A political body or institution is descriptively representative by literally resembling or reflecting the constituent elements of the community that it governs. In contrast, substantive representation is concerned with what the representative actually does on behalf of the interests of the group he or she is associated with.

Advocates of racial and gender diversification of the judiciary have suggested that it will promote the value of descriptive representation by making the judiciary better resemble the public that it governs, and will thereby strengthen at least the appearance of judicial impartiality, as well as the judiciary's legitimacy as a democratic institution (Walker and Barrow, 1985:597; Tobias, 1990:177; Smith, 1994:198). Proponents of diversification, however, have clearly desired and anticipated enhanced substantive representation as well. In particular, diversification advocates have expected that racial minorities and women on the bench would be more concerned about and responsive to questions of race and gender discrimination, and would actually render decisions more favorable to plaintiffs in such cases (Goldman, 1979; Martin, 1982; Martin, 1990; Tobias, 1990; Gregory, 1997; Beiner, 1999; Ifill, 2000), as well as help to develop legal doctrine in a direction more favorable to discrimination plaintiffs (Cook, 1981; Smith, 1994).

The principal explanation given for the expectation that women and minority judges would produce legal policy more advantageous to plaintiffs in discrimination claims is that they are more likely to have encountered discrimination themselves (Martin, 1990; Songer et al., 1994; Beiner, 1999). That is, their different life experiences, as compared with white male judges, will make them more likely to believe a plaintiff's proof of discrimination. A survey of federal judges lends some support to the idea that female judges have a different perspective on discrimination than male judges. When identifying "major" problems in the legal profession, 81% of the women judges in the survey mentioned sex discrimination, while among men, none identified sex discrimination and only 18.5% referred to racial or class bias (Martin, 1990:207). Similar findings exist for African American judges. A survey found that while 83% of white judges believe that African Americans are treated fairly in the American judicial system, only 18% of black judges held this view (Ifill, 2000:450).

A number of high-ranking women judges have themselves suggested that they have brought their experiences as women to the bench. Justice Christine Durham of the Utah Supreme Court stated that female judges "bring an individual and collective perspective to our work that cannot be achieved in a system which reflects the experience of only a part of the

people whose lives it affects" (Tobias, 1990:177). With respect to anti-discrimination law, Chief Judge Judith Kaye of the New York Court of Appeals (New York's highest court) remarked: "After a life-time of different experiences and a substantial period of survival in a male-dominated profession, women judges unquestionably have developed a heightened awareness of the problems that other women encounter in life and in law; it is not at all surprising that they remain particularly sensitive to these problems" (Tobias, 1990:178).

To examine empirically the influence of race and gender on judicial decisions, as we do here, does not mean to indulge the facile notion that women or racial minority judges are homogeneous in their politics or values. We emphatically do not believe that there is a monolithic "women's perspective" or "minority perspective" among judges or anyone else. However, in a society with a long history of race and gender discrimination, including discrimination inscribed into law, the assumption that the race and gender of judges will have no bearing on the policy they make may be equally facile. As discussed below, it would also be difficult to square with social scientific evidence.

Previous studies of minority representation on courts have been based largely on the attitudinal model of decision making (Segal and Spaeth, 1993). The attitudinal model is oriented to explaining judicial decision making based on "each judge's political ideology and the identity of the parties" (Cross, 1997:265). This individualist orientation emphasizes the explanatory power of each judges' sincere preferences independently of either legal doctrine or strategic considerations.

Following this methodological orientation, empirical studies testing whether women and racial minority judges decide certain types of cases differently than their male and white counterparts have produced mixed results. For example, in studies of criminal sentencing rulings at the state trial court level, scholars generally have not found significant differences between male and female judges (Kritzer and Uhlman, 1977; Gruhl et al., 1981). In other studies of state criminal sentencing, some researchers have found significant differences between African American and white judges (Welch et al., 1988), while others have found no such racial differences (Uhlman, 1978). At the state supreme court level, several studies have found that women judges voted more liberally on a variety of civil rights issues (Allen and Wall, 1993; Songer and Crews-Meyer, 2000).

In the federal district court, one study found no effects with respect to a judge's race or gender in deciding civil rights cases (Walker and Barrow, 1985), while another such study found no differences with respect to a judge's race, but modest differences along gender lines (Ashenfelter et al., 1995).[1] One very interesting recent study found that while racial minority

1. It should be noted that the Walker and Barrow study, which reported nonfindings with respect to both race and gender, was limited by a very small sample of racial minority and women judges.

and female federal district court judges were not more likely to strike down federal sentencing guidelines enacted in 1988, of those judges who struck down the guidelines, racial minority judges were far more likely to do so based on a legal theory rooted in individual due process rights rather than a breach of separation of powers (Sisk et al., 1998). The study's authors concluded that minority judges showed "a tendency . . . to adopt a non-mainstream approach, even if these judges reached the same general outcome at basically the same rate as white judges" (Sisk et al., 1998:1459). The study found that women judges, however, did not employ legal reasoning in support of their decisions that differed from the reasoning employed by male judges.

With respect to federal Court of Appeals judges, one early study found that among Carter appointees, race and gender did not influence judges' decisions in criminal, prisoner, and discrimination cases at a statistically significant level (Gotchall, 1983). Subsequent research on federal appellate courts found that women were quite significantly more liberal than men in employment discrimination cases, but did not vote differently from men in criminal procedure or obscenity cases (Davis et al., 1993; Songer et al., 1994). Most recently, researchers studying unfair labor practice (ULP) cases under the National Labor Relations Act found that Asian and Hispanic judges had a higher probability of ruling for management, and though African American judges were not more likely to decide ULP cases in general in favor of one party or the other, they were more prone to decide an important subset of the cases in favor of unions. Women judges, as a whole, did not favor either side in ULP suits, but female Republican judges were more likely to decide claims in favor of unions than male Republican judges (Brudney et al., 1999; Merritt and Brudney, 2001).

While studies of the influence of race and gender on judicial behavior have not produced broadly consistent results, a number of the studies have found systematic differences in decision making by judges along racial and gender lines in the area of civil rights. Moreover, while these differences ranged from modest to substantial in substantive magnitude, all of the positive findings were in the ideological direction anticipated by the advocates of diversification of the bench. That is, women and racial minority judges appear, on average, to be somewhat more sympathetic than majority group judges to complaints of civil rights violations. The findings further indicate that race and gender are complex and distinct categories whose effects vary across issue areas and do not necessarily move in tandem.

Thus the social scientific evidence supports the assumption that systematic differences *sometimes* exist in the views of racial minority and women judges that are more favorable to parties complaining of civil rights violations. We develop our theoretical framework in the next section assuming the existence of such differences in *some* types of cases because the purpose of the framework is to assess whether, given institutional

context, decisional output by federal appellate panels is influenced by the presence of women or minorities *when such differences in viewpoint exist*. While the relationship we posit in elaborating the framework between judges' preferences and their race and gender is highly stylized, the simplifying assumption is necessary in order to pursue a systematic approach to addressing this research question. We think that this assumption is most likely to hold for the kinds of cases studied here, yet we ultimately leave it for the data analysis to determine whether or not such relationships are borne out. We further stress that we do not assume that women or racial minority judges favor civil rights plaintiffs over defendants, or that majority group judges favor such defendants over plaintiffs, but rather that women and racial minority judges on balance will be more likely to rule for such plaintiffs as compared to majority group judges.[2]

3. The Neglected Importance of Institutional Structure

All of the studies discussed in the previous section were explicitly motivated by the general question of whether increasing representation of minorities on the bench produces any influence on judicial policy output, particularly in areas thought by advocates of diversification to be of special concern to minorities, such as antidiscrimination law. However, all of the prior scholarship on the Court of Appeals that we reviewed has examined the votes of individual judges in isolation, ignoring the specific institutional structure in which the judges were operating. This lack of attention to institutional context is especially problematic for studies of minority representation on appellate panels. At the federal trial court level, when a minority trial judge sitting alone presides over a case, that judge has the authority to decide the case (though, of course, the potential for review by a higher court can impose some constraints). At the federal appellate level, with three-judge panels on which a simple majority prevails, a single minority judge sitting on a panel with two members of the majority group lacks the power to decide anything alone. Conversely, the two judges of the majority group possess the power to render binding decisions for the circuit that totally disregard the views of the minority.

The probability of drawing two minority judges on a three-judge panel is substantially lower than the proportion of minority judges in the pool. For example, suppose a circuit has 15 judges serving on it and 2 of those are racial minorities (this is about the average size of a circuit and the average number of racial minorities serving on a circuit today). The probability of drawing a panel that has two minorities is about 3% even though

2. Scholars have noted the strong tendency of the federal Court of Appeals to favor defendants over plaintiffs in employment discrimination cases (Eisenberg and Schwab, 2001), and in our sample both men and women, and whites and racial minorities, rule in favor of defendants more frequently than plaintiffs.

minorities constitute slightly more than 13% of the circuit.[3] Thus, compared with federal district courts where each case is heard by a single judge, it is evident that the institution of the federal appellate panel has the potential to considerably dilute the translation of minority representation into doctrinal output representative of minority views where they differ from majority views. In Pitkin's terms, the institutional structure of appellate panels may obstruct the meaningful conversion of descriptive representation on the appellate bench into substantive representation.

This potentially bleak consequence of the appellate panel structure would appear to be the likely outcome of a theory of judicial decision making that ignores some important institutional features of appellate courts and posits that judges straightforwardly vote their sincere preferences. Assuming that the views of minority group judges differ systematically from judges of the majority group on a discrete body of cases, and all judges vote their sincere preferences, we should expect to find the following. Judges of the majority group will decide those cases in the same way regardless of whether they have a 3–0 majority or a 2–1 majority, since voting purely based on their attitudes yields adoption of the majority position in both cases. Where the panel is split 2–1 in favor of the majority group, the decisions of the majority judges will not be influenced by the minority judge. The minority view will only be adopted in the very small proportion of cases in which there are two minority judges on the panel. Finally, within categories of cases in which there are systematic differences between the positions of majority and minority judges, this simple theoretical account would lead us to expect to see higher rates of dissent among minority group judges when they serve on panels with two majority group judges, and among majority group judges when they serve on panels with two minority group judges.

If we think of this issue pursuant to the logic of the median voter theorem, where "it is the preferences of the median member of the judicial panel that should determine the panel's decision" (Smith and Tiller, 2002:74; see also Claeys, 1994), the results from the standpoint of minority representation are equally gloomy. With respect to case types in which the views of minority and majority group judges differ systematically, on panels where one minority group judge serves alongside two majority group judges, each majority group judge will be ideologically closest to the other, and the minority group judge will never be the median. Thus under the median voter model, when a minority group judge serves on a panel with two majority group judges, she will not influence the panel's

3. This number is computed as follows. Let M be the size of the circuit, K be the number of minorities on the circuit, n be the size of the panel, and x be the number of minorities on the panel. Since we are sampling without replacement (i.e., we cannot pick a judge more than once for the same panel), then the probability of x can be computed from a hypergeometric distribution: $f(x) = \frac{\binom{K}{x}\binom{M-K}{n-x}}{\binom{M}{n}}$.

decision. If a minority group judge serving with two majority group judges then chooses to vote her sincere preferences, we would again expect to see higher rates of dissent among minority group judges when they are outnumbered on a panel.

Empirically, federal appellate panels are overwhelmingly unanimous, with dissent rates aggregated across all circuits averaging approximately 6% to 8%, varying somewhat with respect to issue area (Songer, 1986; Goldman, 1975; Green and Atkins, 1978). These extremely high rates of consensus on federal appellate panels prevail even within particularly contentious issue areas, where measures of individual judges' voting and measures of panel outcomes show wide ideological variation (Atkins and Green, 1976). Even where there is systematic disagreement among judges with respect to some substantive category of cases and there is wide ideological variation across panel decisions in such cases, panels nevertheless achieve unanimous decisions in the overwhelming majority of those cases. Panel unanimity appears to mask disagreement among panel members.

From the perspective of investigating the consequences of the appellate panel structure for minority representation, the question that immediately arises is what happens to the minority view on panels that are divided, for example, along racial, gender, or general ideological lines? Are minority dissents being suppressed without influencing the panel's decision, or are they being avoided as part of a process through which the minority judge influences the content of the panel decision?

A number of hypotheses have been advanced to explain the phenomenon of panel unanimity, which is so prevalent that judicial scholars refer to it as a "norm" (e.g., McIver, 1976:757; see also Goldman, 1968; Songer, 1986). These hypotheses largely derive from the literature on small-group decision making as applied to multimember courts, and although they have not been considered in connection with the issue of minority representation, they have important implications for it. One set of explanations holds that a judge on a panel who disagrees with the panel majority acquiesces in the majority's brute numerical force and signs on to an opinion with which he or she disagrees, *without influencing the decision's content*. These explanations for unanimity are (1) workload, (2) a coercive consensus norm, (3) organizational loyalty, and (4) the loneliness of dissent. We refer to these explanations collectively as "suppressed dissent" hypotheses for explaining panel unanimity. In this scenario, on a panel split 2–1 in favor of the majority group, the two majority group judges vote their sincere attitudes, or vote consistently with the median judge's attitudes, while the minority judge signs on to an opinion that wholly disregards her preferences.

The workload explanation is that federal appellate judges simply have too much work to do sitting on panels and writing their assigned majority opinions. Their heavy workload restrains them from taking on the extra work of writing dissenting opinions, particularly given that such opinions do not affect the outcome or holding of the case and carry no precedential

weight (Atkins and Green, 1976; Green, 1986; Songer, 1986). Researchers have found evidence on state appellate courts that heavy case loads produce a division of labor practice on panels whereby the responsibility to decide cases is substantially delegated to the judge assigned to write the opinion (Vines and Jacob, 1971), and at least one scholar has suggested that this practice could be operative on federal appellate panels (Peterson, 1981:415–16). In this view, the absence of dissents does not reflect panel consensus, but rather that the workload curbs the articulation of dissenting views.

The coercive consensus norm refers to the idea that among appellate judges on a panel, "social pressure exists . . . for the judge to adhere to the dominant value or position expressed in a decision" (Atkins, 1973:43; see also Goldman and Sarat, 1978:491–92), and that a consensus norm underwritten by this social pressure amounts to a "behavioral restriction" (Atkins and Green, 1976:738, n. 2). This norm is said to be motivated by a view among judges that unanimous court opinions promote the appearance of legal objectivity, certainty, and neutrality, which fosters courts' institutional legitimacy, while dissenting opinions create legal uncertainty, erode courts' credibility, and may even provoke opposition to a decision (Atkins, 1973:42–43). Even without overt pressure being brought to bear on a judge not to dissent, there is evidence that such institutional concerns can cause judges to withhold dissents out of a sense of "organizational loyalty" (Peterson, 1981:416–17).

Finally, judicial politics scholars have theorized that judges who disagree with a panel decision may withhold their dissent, in part, due to the "intrinsic loneliness of dissent" (Songer, 1982:227; Atkins and Green, 1976:738, n. 2). Researchers have noted that this mechanism for producing unanimity weakens as the size of the decision-making group increases, since as panel size increases so also does the opportunity for a would-be dissenter to find other judges to join in dissent, which may render dissenting a more collegial—and thus more appealing—option (Ulmer, 1965; Murphy, 1964). Thus, institutionally speaking, the three-judge panel structure of the federal appellate courts, in which dissents are necessarily solitary, maximizes the force of the loneliness of dissent as a mechanism to increase the likelihood of panel unanimity (Green and Atkins, 1978:368).

If any of these three suppressed dissent hypotheses are correct, the effect is the same for purposes of the present discussion. Within categories of cases in which the views of majority and minority judges differ systematically, panel unanimity would be masking the failure of minority judges to influence legal policy in all but the few cases in which they constitute a majority of the panel.

However, there is a second set of explanations for the unanimity of appellate panels that, if true, would yield a more optimistic conclusion about how such panels mediate minority representation into decisional output. This set of explanations contemplates that the process by which a dissent is withheld involves the moderation of the majority view toward the

would-be dissenter's preferred position. These explanations are (1) a norm of consensus through bargaining, (2) deliberation, and (3) logrolling across cases. We refer to these explanations collectively as "modified content" hypotheses for explaining panel unanimity. In a modified content scenario, a lone minority group judge on a panel is able to influence legal policy, contrary to the outcomes contemplated by simple majority voting models.

The norm of consensus through bargaining is motivated by the same concerns as the coercive consensus norm—fear that dissents promote legal uncertainty, reduce the court's institutional legitimacy, and possibly diminish compliance. According to this view, judges confer "in a spirit of 'give-and-take' (or accommodation) in an effort to reach decisional consensus and thus avoid public dissension" (Goldman, 1968:479–80; see also Goldman and Sarat, 1978:493). Because judges in the majority would prefer to achieve unanimity, "the threat of dissent can be used to gain concessions from the majority" (Peterson, 1981:418; see also Murphy, 1964). A recent treatment of this idea is that would-be dissenters can gain concessions from the panel majority by threatening to "blow the whistle" on a majority opinion of questionable fidelity to doctrine (Cross and Tiller, 1998), a bargaining tactic especially likely to be effective if the panel majority is ideologically out of line with the circuit en banc or the Supreme Court (Cameron et al., 2000). And from the would-be dissenters' point of view, extracting some concession, even if it is far from their ideal result, will give them at least a measure of influence over the outcome. In the consensus through bargaining scenario, the minority judge does not change the minds of majority group members of the panel, but rather trades her vote for a change in the content of the opinion relative to that ideally preferred by the majority group judges.

The deliberation explanation is most consistent with the conventional legal model of decision making on a multijudge panel. According to this view, sitting on an appellate panel is a collegial and not an isolated decision-making process. In the context of close case studies of the Supreme Court, researchers have found evidence of justices changing their initial position in cases after being exposed to arguments and information from fellow justices in the course of the deliberative process (Howard, 1978). The central idea of the deliberative model of panel decision making is that judges take one another's views seriously in the deliberative process, and this will tend to cause judges on a heterogeneous panel, who will exchange arguments and information from a wider range of points of view than will occur on a homogeneous panel, to moderate their views toward the center (Kornhauser and Sager, 1993). Simply put, judges "can be swayed by an articulate and well-reasoned argument from a colleague with a differing opinion" (Carp and Stidham, 1991:176). The deliberative model thus envisions that a minority group judge's articulation of views that would be absent on a homogeneous majority group panel will sometimes actually change majority group judges' beliefs about the "correct" outcome.

It bears emphasis that in practice the consensus through bargaining model and the deliberation model converge to the extent that the threat of dissent and the concern for unanimity together operate as an institutional mechanism that lead judges in the majority on the panel to give a serious hearing to arguments that they otherwise would not have weighed. We believe that this point is important: the underlying premise of the deliberation hypothesis, as we deploy it, is not a naive rationalist conviction that deliberation will yield unanimity, but rather that an institutional unanimity norm can foster more serious deliberation *and accommodation* in the deliberative process.

Finally, the "judicial logrolling" hypothesis holds that on multijudge courts there may be "norms of reciprocity" whereby unanimity is maintained by rotation of opinion writing, coupled with a general practice of deference to the writer by other judges on a panel (Murphy, 1964; Petersen, 1981:417). An "illusion of unanimity" is created when judges sign on to decisions that they disagree with based on the understanding that when it is their turn to write in the rotation they will have wide discretion and can count on the deference of their colleagues (Sickels, 1965). Researchers have speculated that such logrolling across cases may be operative on federal appellate panels (Atkins and Green, 1976). Strictly speaking, this explanation for unanimity would not allow a lone minority judge to modify the content of the decision in which she withheld a dissent, but rather it would allow her to influence the content of another decision in which she writes as the lone minority judge with deferential majority group colleagues. However, with that qualification, we include judicial logrolling across cases with the modified content hypotheses because it reflects a mechanism by which lone minority judges could withhold a dissent in exchange for an influence upon legal policy, albeit in a different case.

If any of these modified content hypotheses are correct, then panel unanimity need not entail neglect of minority group views on panels with one minority judge. Instead, the existence of unanimity would reflect substantive modifications of the majority view in the direction of the minority as compared with panels of three majority judges, and a lone minority group judge would be influencing legal policy, contrary to the scenarios of either sincere voting by all judges or the simple dominance of the median panel member's preferences. If this were true, the institutional context of appellate panels would be functioning to facilitate rather than impede substantive minority representation.

Our empirical analysis tests whether the evidence supports the suppressed dissent hypotheses or the modified content hypotheses as applied to panels that are divided along racial, gender, or ideological lines. If we find that the probability of an outcome in favor of a civil rights plaintiff increases when only one minority serves on a panel, this would be evidence in favor of the modified content hypotheses. If the probability increases further when a second minority is added to the panel, this indicates that achieving a panel majority allowed the minority judges to move the

outcome in a more liberal direction. If the probability of a ruling for the plaintiff does not increase further when a second minority is added to the panel, this would suggest two possibilities. First, if the mechanism driving the influence of one minority judge is that he or she brings a perspective and/or information to the deliberative process that is absent on homogeneous majority group panels, the marginal effect of adding a second minority may be diminished. Second, when minority group judges become a majority of the panel, they too are constrained by the norm of unanimity and will have to bargain away from their ideally preferred outcome to maintain consensus.

If we find that the probability of an outcome in favor of a civil rights plaintiff does not increase when one minority serves on a panel but does increase when two serve, this would be evidence in favor of the suppressed dissent hypotheses. We would interpret this result as indicating that the more liberal votes of minority judges when they are in a majority better represent their sincere preferences, which are not influencing outcomes when only one serves on a panel. Finally, if we find that neither one nor two minorities serving on a panel affects the probability of an outcome for the plaintiff, this would suggest that there may be no difference between the views of minority group and majority group judges as evaluated by the measure of case outcome.

While the key focus of this analysis is on how panel-level variables affect individual judge's votes and case outcomes, the theoretical development also indicates that we need to be concerned with the effects of circuit-level variables. The ideological slant of legal doctrine varies substantially across circuits, especially with respect to more divisive doctrinal areas, such as employment discrimination law. Circuits are able to enforce their views against potentially wayward panels through the en banc review process, or the threat of it. Further, the circuit-level effects are necessary due to possible variation in the nature of claims arising in different circuits, as well as in a party's propensity to appeal, which can be influenced by circuit ideology (Brudney et al., 1999). Although past studies of the influence of minority representation on Court of Appeals decision making have neglected the key institutional variable of the circuit in which the panel is situated, we argue that it is essential to account for circuit-level effects in order to obtain reliable estimates of the effects at the individual judge and panel levels.[4]

4. Data and Empirical Analysis

Our data consist of a random sample of 400 published federal Court of Appeals employment discrimination cases decided in 1998 and 1999, 200

4. We are aware of only two studies that controlled both for the effects of judges' race and gender and for circuit effects. These studies analyzed decisions under the National Labor Relations Act, a substantive area of law not identified by advocates of diversification of the judiciary as one in which differences in decision making were anticipated (Brudney, Schiavoni, and Merritt, 1999; Merritt and Brudney, 2001).

from each year.[5] Scholars studying publication of Court of Appeals decisions have shown that they may differ from unpublished decisions regarding how often particular issues are raised, that the rate of publication varies across circuits and across judges (Merritt and Brudney, 2001), and that the population of published decisions may not be representative of all cases litigated regarding some case characteristics (Eisenberg and Schwab, 1989). These studies counsel that researchers must take care to sample from a pool of cases best suited to answer their particular research question. Our fundamental concern is the influence of minority representation, if any, on the development of *legal policy*, and thus published decisions are the appropriate object of study. Published Court of Appeals opinions are binding law on all subsequent panels and all district judges in the circuit unless overturned by the circuit en banc or the Supreme Court, while unpublished decisions have no precedential weight.

We take our sample from two recent years rather than over a longer period for several reasons. First, due to the significant increase in the number of women and minorities on the federal appellate bench over the past decade, sampling from this period increased our chances of drawing a sufficient number of cases with women and minority judges to render reliable findings and permit fine-grained statistical analysis. Further, by sampling within a narrow temporal frame, we aim to isolate the influence of the judge's race and gender on panel decisions from significant changes in Court of Appeals membership. Because turnover on the federal appellate bench is modest over only a two-year period and the number of employment discrimination cases is large, sampling within a narrow temporal frame allows the vast majority of judges in the sample to decide employment discrimination cases on multiple three-judge panels on which the gender, race, and ideology of their colleagues changes, which is ideally tailored to illuminate our research question. Further, our sampling strategy seeks, to the extent possible, to insulate our sample from changes over time in pertinent Supreme Court doctrine, as well as from changes in the ideological complexion of Supreme Court membership, both of which can influence case outcomes in the Court of Appeals (Segal, 1984; Songer et al., 1994). There were no changes in Supreme Court membership in our time frame, nor were there significant shifts in employment discrimination doctrine with implications across the multiple types of employment discrimination cases. To confirm that the doctrinal environment was stable across the two-year period, we note that the results reported here were robust when run separately in each of the two years in the sample, and that there were no trends in the proportion of cases decided for the plaintiff over time.

5. The sample was drawn from the pool of published cases in the Westlaw database classified under Westlaw headnotes for employment discrimination cases, or with reference to any employment discrimination statute in the case summary.

We examine employment discrimination cases for a number of reasons. As discussed above, antidiscrimination law is the domain in which advocates of diversification of the judiciary expect to find differences in decision making by women and racial minority judges, and it is an area in which some past studies have found such differences. Furthermore, employment discrimination cases are the most common type of suit filed in federal court.[6] Thus by examining employment discrimination claims, we are able to focus both on antidiscrimination law and a case type that is the largest staple of today's federal court docket.

We test models with two closely related but analytically distinct units of analysis. The first is each individual judge's vote for either the plaintiff or the defendant, and the second is whether the case outcome is for the plaintiff or the defendant. Individual judge's votes must be analyzed to directly assess whether and to what extent the votes of majority group judges are influenced by minority group judges on a panel. The case-level outcome must also be analyzed to gauge the influence of minority judges on case outcomes and thus legal policy. The individual vote analysis directly models dynamics among panel members, and the case outcome analysis measures the results of those dynamics for legal policy. The more strongly the norm of unanimity operates in our sample, the higher the rate at which individual judge's votes will correspond to case outcomes, and thus the more convergence there will be in the results produced by the two levels of analysis. While we expect a high degree of consistency between the individual-level and the panel-level results given the norm of unanimity, we test this expectation rather than assuming it.

We coded each judge's decision as one for a proplaintiff (liberal) vote, and zero for a prodefendant (conservative) vote, and coded case outcomes likewise. For decisions in which some issues were decided for the plaintiff and others for the defendant, if one party was substantially victorious over the other, we coded the case as being decided for that party.[7]

It must be emphasized that the task of measuring how a minority judge on a multijudge court might influence an opinion is a difficult one. The most clearly observable manifestation of influence is to increase the probability of a decision in favor of the plaintiff, which is the measure we use here. However, changing the outcome entirely from the defendant to the plaintiff is the most extreme form of influence. A great deal of the bargaining and deliberation among judges focuses on how to frame a decision once it is decided which party will prevail (Epstein and Knight, 1998). Judges almost always have choices between framing a decision in terms that range from having minimal or no policy consequences for future cases, to having far-reaching influence on a large class of future cases. As noted above, a

6. See *Judicial Business of the United States Courts, Annual Report of the Director, 1996–2000*, Table C-2A.

7. If a ruling was roughly evenly split, so that there was no clear victor, it was not included in the sample.

recent study found that although racial minority district judges were not more likely than white judges to strike down the federal sentencing guidelines enacted in 1988, among those judges who struck the guidelines, racial minorities were far more prone to do so based on a legal theory rooted in individual due process rights rather than a breach of separation of powers (Sisk et al., 1998). While a purely outcome-based measurement such as ours would not detect this important difference, the precedent founded on individual rights will be far more likely to have future doctrinal value to advocates of criminal defendants than will a precedent based on a breach of separation of powers.[8] In sum, there is a vast array of choices and material for minority and majority group judges to deliberate on and bargain over in employment discrimination cases short of whether the ruling will be in favor of the plaintiff or the defendant.

If any of the modified content hypotheses are correct, then deliberation or negotiation over these types of issues could explain why a minority judge would join a panel decision for a defendant even in a case where he or she would have preferred an outcome for the plaintiff. While judicial politics scholars have studied this type of bargaining in close case studies of Supreme Court decisions, relying on written communications between judges and progressive drafts of opinions as evidence (Epstein and Knight, 1998; Maltzman et al., 2001), such data are not available for a Court of Appeals study the size of ours. For this reason, the only evidence we can use to test for minority influence on substantive output is whether it is actually causing a greater proportion of cases to be decided for plaintiffs. Since we are limited to testing for this most extreme form of influence, we are conducting a very conservative test. To the extent that we do find minority influence on outcomes, we contend that this represents the tip of the iceberg and that minority judges are probably also influencing substantive decision making in favor of plaintiffs in other, more subtle ways.

8. We note that there are serious obstacles to extending the approach of Sisk et al. (1998)—analyzing judges' reasoning—to data such as ours or to the Court of Appeals more broadly. The "sentencing guideline crisis" of 1988 provided something of a natural experiment in which a flood of prisoner petitions challenging the constitutionality of the guidelines presented an identical pure question of law (independent of the factual circumstances of the individual prisoners) to 293 different district judges before the Supreme Court resolved the issue in 1989. This permitted statistical analysis of the relatively small number of rationales offered by district judges to uphold or strike down the guidelines. In the event that a single legal issue were presented to federal appellate courts across the country, it would yield a maximum of 12 cases decided by three-judge panels, since the first panel to rule in each circuit would bind subsequent panels in that circuit, and 12 cases obviously would not be sufficient for a systematic statistical analysis. To the extent that one departs from the single-issue natural experiment scenario and has a large sample of Court of Appeals cases of a common type, as we do here, one is then faced with court opinions addressing a massive range of factual and legal issues, rendering systematic analysis of judges' reasoning much more problematic. While we do not rule out the possibility of something like the Sisk et al. study applied to the Court of Appeals, it would be a highly demanding undertaking and we must leave it to future research.

We include a number of explanatory variables measuring judge characteristics in our models. The key variables of interest are gender (female = 1, male = 0) and race (racial minority = 1, white = 0).[9] In addition to gender and race, we accounted for factors that prior studies have found to be related to judges' voting patterns in ideologically divisive issue areas, such as employment discrimination cases. A number of past studies have found that the party affiliation of the appointing president is significantly correlated with the ideological direction of judges' decisions at the Court of Appeals level (Songer et al., 1994; Revesz, 1997; Cross and Tiller, 1998). Giles et al. (2001) and Giles and Peppers (n.d.) find that the common space NOMINATE score of the appointing president computed by McCarty and Poole (1995) predicts a judge's voting decisions better than the party affiliation of the president, since the former picks up the variation in ideology that exists across presidents of the same party but is ignored by party dummy variables. Following their lead, we report results using NOMINATE scores as a general measure of ideology for judges.[10] In order to test the logrolling hypothesis, we also coded whether the judge authored the opinion, and interacted this variable with the demographic characteristics.

Since past research has found that variation in judges' voting can be explained by case facts and the identity of the litigants (Songer and Haire, 1992; Songer and Sheehan, 1992; Songer et al., 1994), we coded these characteristics for each case in our analysis. With respect to case facts, we coded the protected classification alleged to be the basis of the discrimination (e.g., race, gender, religion, age, national origin, disability, or some combination of these; we leave out the dummy variable for disability discrimination, making it the referent), as well as whether there were allegations of a "hostile environment," such as sexual or racial harassment.[11] We also include dummy variables that indicate whether or not the case involved claims of reverse gender or racial discrimination. Regarding the identity

9. Racial minorities include African American, Hispanic, and Asian judges. Our source for coding judges' race and gender was the Federal Judicial Center's biographical data, which can be found at http://air.fjc.gov/history. We also estimated specifications that accounted for the age of judges, which did not have statistically significant effects, and so for the sake of parsimony, we left them out of the models reported below.

10. Larger or more positive NOMINATE scores indicate more conservative presidents/judges. Giles et al. (2001) also account for senatorial courtesy in appointments by including the common space NOMINATE score of relevant senators in their models. We do not include measures of senators' ideology because it would require weighting senators' ideology against presidents' ideology and it is not clear what the weights should be. We also estimated models using party indicators, but the specifications with the NOMINATE scores generally fit the data better. The main results on the gender and race variables reported below did not change significantly across the different specifications.

11. While Songer et al. (1994) included in their analysis of employment discrimination cases variables measuring evidence of past discrimination, whether the relief sought involved quotas or affirmative action, whether the relief sought would affect seniority rights, and whether an amicus brief was filed, preliminary analysis showed these variables to be insignificant, and since they are not theoretically central to our analysis, we excluded them to avoid cluttering up the model.

of the parties, we coded whether the defendant was a governmental entity (government defendant = 1, other = 0), and whether the plaintiff was the Equal Employment Opportunity Commission (EEOC plaintiff = 1, other = 0). Past researchers have also found that whether the plaintiff or defendant is appealing the trial court decision may be a significant predictor of the outcome on appeal (Eisenberg and Schwab, 1989; Clermont and Eisenberg, 2001), and thus we included a set of dummy variables to account for whether the plaintiff, defendant, or both parties appealed (plaintiff appeal = 1 if plaintiff appealed, 0 otherwise; both appeal = 1 if both the plaintiff and the defendant appealed, 0 otherwise; this makes appeal by the defendant the reference category). These variables also indicate the direction of the lower court decision, since an appeal by one party indicates a decision in favor of the other. We also coded the cases for whether the lower court ruling on appeal was in a pretrial or posttrial posture (posture = 0 if posttrial, 1 if pretrial). Circuit effects are operationalized with a set of dummy variables indicating the circuit in which the case was litigated.[12] The reference category for the circuit dummies is the Ninth Circuit, which we expect to be the most plaintiff friendly given its liberal bent.[13]

With respect to predicting individual judges' votes, we model panel-level effects explicitly by including a battery of variables that indicate the gender, racial, and ideological profile of a judge's colleagues on the panel, and with respect to predicting case outcomes, we include variables indicating the same characteristics for all three judges on the panel. Although including these sets of dummy variables consumes several degrees of freedom, this approach is superior to including one ordinal variable for each of the panel's characteristics we are interested in. For example, we could indicate the number of female colleagues serving on the panel by including a variable that ranges between zero and two (in our sample there are no cases where three women serve on the panel). But this would impose monotonicity in the effects of this variable, which could lead to the wrong inferences about panel-level effects. That is, the approach would constrain the marginal effect of the variable to be the same whether the change on the panel is from zero to one female colleague, or one to two female colleagues. If there is an effect only when two women serve on the panel (i.e., they constitute a majority), we could obtain

12. Although the circuit dummies are a rather crude way to measure circuit-level factors, we think they are superior to other alternatives. We also estimated a model with circuit composition variables for race, gender, and NOMINATE scores of the appointing president, but only the NOMINATE variable was statistically significant. These variables, while perhaps less crude than the dummies, miss aspects of circuit doctrine not related to race, gender, or presidential ideology, as well as variation in the substance of circuit caseloads. The results reported on the main gender, race, and ideology variables were robust to all of these different operationalizations of circuit-level effects, and tests indicated that it is necessary to include variables accounting for circuit effects in order to avoid misspecification bias.

13. The results reported below were robust to using other circuits as the reference category. In some cases, judges serve on the panels "by designation" though they do not sit on the circuit where the case was heard. The circuit dummy for these cases is still the circuit where the case was litigated.

a positive and statistically significant coefficient. But this would imply an increase in the probability of the dependent variable equaling one when the value of the ordinal variable changed from zero to one, even though there is no real increase in the probability when only one woman is added to the panel. A better approach is to allow the marginal effect to be different depending upon the number of female colleagues on the panel. Including a dummy variable that has a value of one if at least one female colleague serves on the panel and a dummy variable that has a value of one if at least two female colleagues serve on the panel allows us to properly assess the effects of going from zero to one and from one to two women on the panel. The variable accounting for the ideological positions of a judge's colleagues is simply the mean of their NOMINATE scores.

In addition, we need to allow the effects of the colleague dummy variables to vary depending on the race and gender of the judge in question. For example, if the judge is female, then having one female colleague on the panel implies that it is majority female. But if the judge in question is male, having one female colleague implies that the panel is majority male. The inferences drawn from the coefficient on the one female colleague dummy are thus very different for male and female judges. Further, if we estimated only one coefficient for both genders for the one female colleague variable we would not be able to isolate the influence of female judges on male judges, which is a central object of our inquiry. The same logic applies to our race variables. Proper tests of our hypotheses require estimating separate coefficients for different genders and racial groups.

Our sample limits us somewhat in our ability to test hypotheses about panel-level effects because it does not include cases where *only* women or racial minorities served on the panel. Such cases are extremely rare. The dummies for gender and race indicate whether at least one or at least two female colleagues served on the panel, and whether at least one or at least two racial minority colleagues served on the panel. However, with our sample we are able to estimate coefficients on the variables measuring two female or two racial minority colleagues on the panel only for male and white judges, respectively. Descriptive statistics for the variables included in the empirical model appear in Table 1.

Before we discuss our results, we note that, consistent with past studies, there were dissents in approximately 5% of the cases in our sample (21 of 400). We found no statistically significant relationship between panels divided along racial, gender, or ideological lines and the occurrence of dissents. Thus the norm of unanimity prevails in our sample of employment discrimination cases even on heterogeneous panels.

The results of the logit analysis of individual judges' votes are reported in Table 2. For purposes of comparison, we estimated models with and without panel composition variables. In the absence of panel composition variables, we find that the gender of the judge and the NOMINATE score of the president who appointed her or him affect the vote (see the columns for model 1 in Table 2). The coefficients on gender and ideology are

Table 1. Descriptive Statistics

Variable	Mean	SD	Min.	Max.
Judge and Panel Level Variables				
Gender	0.146	0.353	0	1
One female colleague on panel (female judge)	0.030	0.170	0	1
One female colleague on panel (male judge)	0.247	0.431	0	1
Two female colleagues on panel (male judge)	0.015	0.122	0	1
Race	0.085	0.279	0	1
One nonwhite colleague on panel (nonwhite judge)	0.020	0.140	0	1
One nonwhite colleague on panel (white judge)	0.140	0.347	0	1
Two nonwhite colleagues on panel (white judge)	0.010	0.099	0	1
NOMINATE score	0.138	0.493	–0.535	0.568
Panel colleagues NOMINATE scores (mean)	0.138	0.346	–0.510	0.568
Author	0.320	0.465	0	1
Gender × author	0.050	0.218	0	1
Race × author	0.034	0.182	0	1
NOMINATE score × author	0.043	0.288	–0.510	0.568
Case-Specific Variables				
Outcome	0.347	0.476	0	1
Race discrimination	0.222	0.416	0	1
Gender discrimination	0.328	0.469	0	1
Harassment	0.185	0.388	0	1
Age discrimination	0.240	0.427	0	1
Religious discrimination	0.015	0.122	0	1
Nationality discrimination	0.030	0.171	0	1
Reverse gender discrimination	0.043	0.202	0	1
Reverse race discrimination	0.026	0.158	0	1
Disability discrimination	0.297	0.457	0	1
Government defendant	0.333	0.471	0	1
EEOC plaintiff	0.015	0.122	0	1
Defendant appeal	0.155	0.362	0	1
Plaintiff appeal	0.752	0.432	0	1
Both appeal	0.092	0.290	0	1
Posture	0.718	0.450	0	1
Circuit-Level Variables				
1st Circuit dummy	0.060	0.238	0	1
2nd Circuit dummy	0.063	0.242	0	1
3rd Circuit dummy	0.033	0.177	0	1
4th Circuit dummy	0.028	0.164	0	1
5th Circuit dummy	0.098	0.297	0	1
6th Circuit dummy	0.055	0.228	0	1
7th Circuit dummy	0.203	0.402	0	1
8th Circuit dummy	0.190	0.392	0	1
9th Circuit dummy	0.062	0.242	0	1
10th Circuit dummy	0.077	0.267	0	1
11th Circuit dummy	0.102	0.303	0	1
D.C. Circuit dummy	0.030	0.171	0	1

$n = 1200$.

Table 2. Logit Analysis of Judges' Votes in Appeals Court Decisions

	Model 1		Model 2	
Variable	Coefficient	SE	Coefficient	SE
Judge and Panel-Level Variables				
Intercept	1.381	0.344	1.126	0.362
Gender	0.430	0.242	0.877	0.269
One female colleague (female judge)	—	—	−0.373	0.454
One female colleague (male judge)	—	—	0.800	0.180
Two female colleagues (male judge)	—	—	−0.337	0.575
Race	−0.043	0.331	−0.329	0.363
One nonwhite colleague (nonwhite judge)	—	—	−0.033	0.558
One nonwhite colleague (white judge)	—	—	−0.136	0.236
Two nonwhite colleagues (white judge)	—	—	−0.443	0.720
NOMINATE score	−0.411	0.183	−0.570	0.192
Panel colleagues' NOMINATE scores	—	—	−1.098	0.243
Author	−0.058	0.216	0.122	0.188
Gender × author	−0.056	0.413	−0.174	0.421
Race × author	0.121	0.533	0.345	0.549
NOMINATE score × author	−0.207	0.328	−0.173	0.337
Case-Specific Variables				
Race discrimination	0.251	0.190	0.285	0.197
Gender discrimination	−0.149	0.181	−0.190	0.185
Harassment	0.799	0.198	0.761	0.206
Age discrimination	−0.020	0.183	−0.062	0.190
Religious discrimination	−0.751	0.601	−0.751	0.623
Nationality discrimination	−0.117	0.453	0.069	0.468
Reverse gender discrimination	0.434	0.376	0.576	0.391
Reverse race discrimination	−1.247	0.607	−1.282	0.609
Government defendant	0.142	0.155	0.139	0.159
EEOC plaintiff	0.302	0.598	0.150	0.620
Plaintiff appeal	−1.587	0.230	−1.597	0.235
Both appeal	0.559	0.275	0.578	0.282
Posture	−0.019	0.201	−0.079	0.207
Circuit-Level Variables				
1st Circuit dummy	−1.303	0.396	−1.048	0.409
2nd Circuit dummy	−0.682	0.362	−0.624	0.373
3rd Circuit dummy	−1.892	0.513	−1.358	0.549
4th Circuit dummy	−2.048	0.573	−1.885	0.577
5th Circuit dummy	−2.455	0.384	−2.053	0.400
6th Circuit dummy	−0.096	0.374	0.093	0.397

Continued

Table 2. *Continued*

	Model 1		Model 2	
Variable	Coefficient	SE	Coefficient	SE
7th Circuit dummy	−1.469	0.305	−1.112	0.320
8th Circuit dummy	−1.360	0.310	−0.870	0.326
10th Circuit dummy	−1.435	0.363	−1.315	0.377
11th Circuit dummy	−0.397	0.326	−0.207	0.334
D.C. Circuit dummy	−1.389	0.480	−1.410	0.489
Likelihood ratio test	278.607	($p < 0.0001$)	329.380	($p < 0.0001$)
% correctly predicted	78.5		80.4	

Table entries are maximum-likelihood estimates. $n = 1200$.

bounded away from zero and indicate that a female judge is about 11% more likely to vote for the plaintiff, while a judge with a NOMINATE score that is one standard deviation above the median (and thus more conservative) is 6% less likely to do so.[14] A judge's race does not affect his or her probability of favoring the plaintiff as measured by case outcome. The authorship variable is insignificant on its own and when interacted with race, gender, and ideology, indicating that neither women nor racial minority judges, nor judges of a particular ideological stripe, vote differently at significant rates when assigned to write the opinion.

A few of the variables measuring case characteristics have statistically significant effects at the 0.05 level or better. A claim of harassment increases the probability of voting for the plaintiff, while a claim of reverse race discrimination decreases this probability. A judge is less likely to vote for a plaintiff when the plaintiff appeals, but more likely to do so when both the plaintiff and the defendant appeal, as compared to when the defendant alone appeals. Nine of the 11 circuit dummies are significant at the 0.05 level or better, and indicate that all but the 6th and 11th Circuits are less likely to produce decisions in favor of the plaintiff than the 9th Circuit. Accounting for circuit-level effects is clearly an important part of the model specification. A Wald test for excluding the circuit dummies gives a χ^2_{11} statistic of 82.71 ($p < 0.001$). This indicates that past studies of minority representation on the Court of Appeals, which have examined individual votes without accounting for these institutional effects, have produced somewhat biased results due to the omission of relevant variables.

The results from the logit model that includes the panel composition variables (reported in the columns for model 2 of Table 2) lead us to different inferences about the influence of gender and ideology. When the gender composition variables are included, we still find that the coefficient on the

14. Marginal effects were determined by simulating probabilities. The values of all of the variables included in the model were set to their median values and then the values of specific variables were varied from zero to one or vice versa for the dummy variables or perturbed one standard deviation for the continuous variables in order to determine their marginal effects.

gender of the individual judge is statistically distinguishable from zero. The variable that indicates the presence of one female colleague on the panel has a positive and statistically significant coefficient for males, but not for females. The marginal effect of this variable is to increase the probability that a male judge votes for the plaintiff by 19 percentage points, almost double the marginal effect of a judge's individual gender when the panel-level variables are excluded. The marginal effect for the variable measuring the individual judge's gender is about 20%. Our interpretation of this result is that when one woman serves on a panel, the men on that panel tend to vote more liberally, and at about the same rate as women. However, the coefficient on the dummy variable indicating the presence of at least two women on the panel as distinguished from one is not bounded away from zero for male judges. In combination with the statistical insignificance of the variable for female judges indicating one female colleague, this means that having a majority of women on the panel does not increase the probability that either male or female judges on the panel will vote for the plaintiff over the increase that occurs when there is one woman serving on the panel.[15]

None of the coefficients on the variables pertaining to race have effects that are statistically distinguishable from zero. Neither the race of the individual judge nor the racial composition of the panel affects judges' votes in a systematic way.[16] The results for the general ideological composition of the panel are similar to our findings regarding gender composition. The NOMINATE scores of a judge's colleagues on a panel affects his or her decision, in addition to his or her own NOMINATE score. A one standard deviation increase in the average NOMINATE score of a judge's colleagues reduces the likelihood of a finding for the plaintiff by 9 percentage points. This is more than twice the size of the marginal effect for the judge's own NOMINATE score. A Wald test indicates that the panel composition variables significantly improve the fit of the model—the Wald χ^2_6 statistic is 21.12 ($p = 0.002$)—indicating the model would be misspecified without these variables.

15. In order to account for the possibility that the gender variables were related with particular potency to gender-based claims of discrimination, we estimated the model on the subset of cases where such claims were made. While we found that female judges seemed to be especially influential on cases involving claims of harassment, the results for female judges at the individual and panel levels also held up for cases where non-gender-based claims were made. We also included interaction variables to account for gender-ideology combinations, but did not find robust results that would have indicated that ideology modifies the effects of gender.

16. The race variables remained insignificant in an alternative model specification in which we used separate indicators for white, African American, and Hispanic judges rather than a dichotomous race variable distinguishing white from racial minority judges. Further, as with the gender variable, we estimated the model using only those cases where a claim of racial discrimination was made, and additionally subset of our cases according to the race of the plaintiff. We also tried including variables to account for race-ideology combinations as well as race-gender combinations in order to tease out more subtle influences of minority colleagues. No such influences were revealed by these alternative analyses.

The results obtained for the other variables common to model 2 and model 1 are essentially the same. The same case characteristic variables are statistically significant in model 2 that were significant in model 1. Eight of the 11 circuit dummies are statistically significant, and the Wald test again indicates that they significantly improve the fit of the model, giving a χ^2_{11} value of 59.03 ($p < 0.001$).

To sum up the key results, the effects of gender and ideology on individual judge's votes are not driven solely by a judge's own gender or general ideological position; the gender composition of the panel influences the behavior of male judges and the general ideological composition of the panel influences the way *all* judges on a panel vote. Had we not included panel composition variables in the model, we would have dramatically underestimated the substantive significance of gender and ideology. Yet neither the race of individual judges nor the racial composition of panels appear to influence outcomes in employment discrimination cases. In order to check the robustness of the finding on gender, in some additional analysis (not reported) we checked to see if judges are more likely to vote for the plaintiff when a woman is the median on the panel. We did not find statistically significant effects for this variable, confirming that the results on gender are not being driven by a median voter result.

Given the low rate of dissents in our sample, we expect that the patterns of individual voting behavior by judges described above accurately reflect the influence of minority representation on case outcomes and legal policy. To test this directly, we reran the model using case outcome rather than individual judges' votes as the dependent variable. Table 3 shows that the results at the case outcome level are indeed highly consistent with those at the level of individual judge's votes. The variable indicating the presence of at least one woman on the panel has both a statistically and substantively significant effect, increasing the probability of an outcome favoring the plaintiff by about 20%. However, as before, adding another woman to the panel gives no additional benefit to the plaintiff. The general ideological makeup of the panel also matters, while its racial composition does not. The results on the rest of the variables in the model resemble what we found in our previous analyses.

We conducted a robustness check using generalized estimating equations (GEEs) to bolster confidence in our key results. While we are interested in individual judge's decisions, a judge-level analysis is open to the criticism that it underestimates the size of the true standard errors because it assumes that we have more independent pieces of information than is actually the case. It is reasonable to expect that observations on judges serving on the same three-judge panel are correlated in ways that we are not able to observe. A standard regression analysis would assume that all observations on judges are independent. If they are not, the use of standard regression techniques could result in overconfidence in the precision of our estimates and lead to incorrect conclusions about the statistical significance of estimated coefficients, particularly on the panel

Table 3. Logit Analysis of Case Outcomes

Variable	Coefficient	SE
Panel-Level Variables		
Intercept	1.170	0.623
One woman on panel	0.870	0.318
Two women on panel	−0.392	0.656
One nonwhite on panel	−0.353	0.425
Two nonwhites on panel	−0.246	0.799
Mean of panel NOMINATE scores	−1.676	0.691
Gender of author	−0.021	0.429
Race of author	0.508	0.601
Author's NOMINATE score	−0.131	0.374
Case-Specific Variables		
Race discrimination	0.335	0.345
Gender discrimination	−0.222	0.327
Harassment	0.834	0.361
Age discrimination	−0.024	0.332
Religious discrimination	−0.743	1.076
Nationality discrimination	0.008	0.811
Reverse gender discrimination	0.669	0.691
Reverse race discrimination	−1.667	1.170
Government defendant	0.135	0.278
EEOC plaintiff	−0.244	1.128
Plaintiff appeal	−1.541	0.411
Both appeal	0.636	0.496
Posture	−0.097	0.362
Circuit-Level Variables		
1st Circuit dummy	−1.111	0.720
2nd Circuit dummy	−0.557	0.653
3rd Circuit dummy	−1.402	0.960
4th Circuit dummy	−2.617	1.193
5th Circuit dummy	−2.173	0.708
6th Circuit dummy	−0.106	0.693
7th Circuit dummy	−1.145	0.563
8th Circuit dummy	−0.950	0.571
10th Circuit dummy	−1.403	0.664
11th Circuit dummy	−0.298	0.590
D.C. Circuit dummy	−1.423	0.850
Likelihood ratio test	115.524	($p < 0.0001$)
% correctly predicted	81.1	

Table entries are maximum-likelihood estimates. $n = 400$.

composition variables. GEEs, which allow us to account for unobserved correlation among observations, offer a solution to this problem (see Zorn, 2001).[17] GEEs relax assumptions about the independence of observations,

17. A simple way to address the problem of correlation would be to include a dummy variable for each three-judge panel that appears in the data. This is not a satisfactory approach because, in addition to introducing $N/3 - 1$ additional parameters into the model (where N indicates the number of cases), it would prevent us from estimating the effects of case-level variables which theory and past research tell us should be included in the specification, because the dummy variables would be perfectly collinear with the case-level variables.

Table 4. GEE Analysis of Judges' Votes in Appeals Court Decisions

Variable	Coefficient	SE
Judge and Panel-Level Variables		
Intercept	1.226	0.613
Gender	0.791	0.276
One female colleague (female judge)	−0.398	0.594
One female colleague (male judge)	0.789	0.274
Two female colleagues (male judge)	−0.362	0.595
Race	−0.212	0.359
One nonwhite colleague (nonwhite judge)	−0.458	0.764
One nonwhite colleague (white judge)	−0.151	0.357
Two nonwhite colleagues (white judge)	−0.859	1.081
NOMINATE score	−0.643	0.176
Panel colleagues' NOMINATE scores	−1.100	0.342
Author	−0.023	0.040
Gender × author	0.054	0.120
Race × author	0.069	0.117
NOMINATE score × author	0.069	0.082
Case-Specific Variables		
Race discrimination	0.294	0.310
Gender discrimination	−0.171	0.308
Harassment	0.717	0.354
Age discrimination	−0.047	0.330
Religious discrimination	−0.715	1.138
Nationality discrimination	0.045	0.784
Reverse gender discrimination	0.487	0.716
Reverse race discrimination	−1.388	1.016
Government defendant	0.091	0.268
EEOC plaintiff	−0.083	1.423
Plaintiff appeal	−1.570	0.390
Both appeal	0.586	0.486
Posture	−0.093	0.316
Circuit-Level Variables		
1st Circuit dummy	−1.102	0.641
2nd Circuit dummy	−0.636	0.650
3rd Circuit dummy	−1.386	0.773
4th Circuit dummy	−1.973	0.839
5th Circuit dummy	−2.038	0.688
6th Circuit dummy	−0.023	0.703
7th Circuit dummy	−1.156	0.541
8th Circuit dummy	−0.923	0.564
10th Circuit dummy	−1.344	0.657
11th Circuit dummy	−0.252	0.583
D.C. Circuit dummy	−1.350	0.794
$\hat{\rho}$	0.893	—

Table entries are GEE estimates. $n = 1200$.

which makes them particularly useful when examining collegial decision-making bodies whose members interact in ways that we do not observe, but are likely to affect their behavior. Observations are grouped into clusters and then parameters are estimated to model the correlations

among observations in the cluster. With circuit court decisions, each three-judge panel represents a cluster.[18]

Table 4 reports GEE estimates of our model as a robustness check on our logit estimates.[19] We estimated an "exchangeable" correlation structure, which assumes that the correlations are the same across judges serving on a panel.[20] The results on panel composition effects obtained from the logit model are robust to allowing for correlation among judges serving on the same panels. While their standard errors are a bit larger relative to the estimated coefficients, the variable for male judges indicating the presence of a female colleague and the panel ideology measure still have effects that are statistically significant at better than the 0.01 level. This is additional evidence that the gender and ideological makeup of the panel matters in addition to the gender and ideology of the individual judge.

Only two of the case characteristic variables have a statistically significant effect at the 0.05 level or better: a judge is more likely to vote for the plaintiff when a claim of harassment is made and to reverse a decision in favor of a plaintiff as compared to one for a defendant. Four of the circuit effect variables—for the 4th, 5th, 7th, and 10th Circuits—are significant at the 0.05 level or better. Even when we account for correlation between judges on a given panel, and thereby also partially account for correlation between judges on a given circuit, we find circuit-level effects. The GEE results suggest that the correlation (conditional on the explanatory variables) among judges serving on the same panels and on the same circuit is quite high, estimating the correlation parameter $\hat{\rho}$ as 0.893.[21]

5. Discussion and Conclusion

The results of our empirical analysis enable us to adjudicate between the two general classes of hypotheses regarding panel decision making. The finding that male judges vote more liberally when one woman serves on a panel with them as compared to all-male panels is evidence against the suppressed dissent and in favor of the modified content hypotheses.

18. We could also model each circuit as a cluster and have panel clusters within circuit clusters. But one-level clustering by panels should adequately account for circuit-level correlation not picked up by the circuit-level effects.

19. We also estimated models treating the data as generated by a complex survey sampling design. That is, we treated each appellate case as if it was a primary sampling unit and the three judges who decided the case as repeated observations within the unit. This approach is an alternative way to allow for correlation among judges within the unit/cluster. Not surprisingly, the results were qualitatively the same as those reported for the GEE estimation.

20. We also estimated an "unstructured" correlation matrix, but the results were essentially the same as reported here.

21. Since GEEs do not produce standard errors for $\hat{\rho}$, we should be cautious about drawing inferences based on this parameter. See Zorn (2001) for details about an alternative specification for GEEs that will produce standard errors for $\hat{\rho}$ (so-called "GEE2"), but is less useful for making inferences about explanatory variables.

Women appear to influence their male colleagues, modifying the content of decisions from what is rendered, ceteris paribus, by all-male panels. We can also narrow the field of plausible explanations from among the three alternative mechanisms that we place under the rubric of modified content: deliberation, bargaining, and logrolling across cases. The authorship variable interacted with gender did not have significant effects, indicating that a judge's probability of ruling for the plaintiff is not significantly related to whether or not she is assigned to write the decision.[22] Logrolling across cases does not appear to explain the influence of female judges.

This leaves the deliberation and bargaining mechanisms, which are only differentiated along the dimension of the majority judges' intentions. Starkly conceived, the deliberation model supposes that the majority judges' beliefs about the correct outcome have changed, and the bargaining model supposes that they have remained static while concessions are made to achieve unanimity. As discussed above, judicial politics scholars have found evidence both of judges' minds being changed in the deliberative process and of strategic bargaining to achieve consensus. We are highly doubtful that *pure* deliberation, without a strategic eye to achieving consensus, could explain the 95% rate of unanimity achieved in our sample. And once the strategic desire to conform to the unanimity norm is joined to the deliberative model, such that the norm operates as an institutional mechanism to foster not only exchange but also compromise, it converges quite closely with the bargaining model. We conclude that under a strong norm of unanimity on federal appellate panels, elements of both deliberation and bargaining—alternative perspectives, persuasive argument, and horse trading—explain how a woman on a panel is able to influence the way that male judges on the panel vote.

The finding that having a majority of women on the panel does not increase the probability that male judges will vote for the plaintiff over the increase that occurs when there is one woman is consistent with our conclusion. Indeed, it was the very purpose of our modeling strategy of dummying out one woman on a panel versus two to allow the effects to vary across the two configurations. If, in the course of the deliberative/bargaining process, a lone woman on the panel is changing majority group decisions by bringing to bear arguments and information that would otherwise be absent, adding a second woman will have a more modest influence on deliberations than the first. Further, when women judges on a panel become a majority, the unanimity norm remains operative, and it is reasonable to expect that in the bargaining process they will have to make concessions from their ideal policy to keep the panel unanimous. This provides additional reason to expect a second woman to have a lesser influence than the first. It is precisely the lesson of the finding that one woman on a panel can influence her male colleagues that simple

22. Additional analysis confirmed that judges are not more likely to vote for the plaintiff when a female colleague authors the opinion.

majoritarian dynamics cannot adequately explain panel behavior. We also stress that while a second woman on a panel does not increase the probability of an outcome for the plaintiff, there may be other proplaintiff influences of a second woman on non-outcome-based dimensions of legal policy that are achieved within a decision for a given party.

The fact that one woman on a panel makes it more liberal on antidiscrimination issues also demonstrates that the majoritarian character of the voting procedure on federal appellate panels, because it is mitigated by a strong institutional norm of unanimity, does not obstruct the conversion of women's descriptive representation into some degree of substantive representation. We again regard this finding as having important implications for the study of federal appellate decision making beyond the question of minority representation. It suggests that simple majoritarian voting models do not capture crucial corporate aspects of the panel decision making process. Even accounting for the median judge's preferences on panels, we found that the presence of a woman judge exerted an independent influence on the probability that her male colleagues on a panel would find for the plaintiff.

The insignificance of the variables for the race of the individual judge and the racial composition of the panel leads us to conclude that racial minority judges on the federal Court of Appeals in the period sampled do not hold views different from white judges on employment discrimination claims, *as measured by case outcome*. If they were suppressing dissents while one minority judge served on a panel, we expect that we would observe a higher rate of proplaintiff outcomes when racial minority judges constituted a majority of the panel, even with unanimity constraints. Our inference that racial minority judges do not have different preferences than white judges on case outcomes is further buttressed by the fact that the judge and panel race variables remain consistently insignificant when broken down into more detailed categories of judges' race (African American, Hispanic, Asian, and White), when the analysis is limited to cases in which plaintiffs complained of racial discrimination, and accounting for the race of the plaintiff (see footnote 16).

As reflected in our review of the literature on the effects of judges' race and gender on their decision making, race and gender are distinct categories and it is commonplace for studies to reach different findings with respect to race and gender variables within a particular type of case, as we do here. Thus we do not regard the null effects of the race variables to be at odds with our positive findings with respect to gender. We reiterate that past research indicates that the measure of case outcome may be missing subtle but important differences between the decisions of racial minority and white judges that have significant policy consequences (Sisk et al., 1998). The participation of minority judges on panels might not change case outcomes from defendant to plaintiff, while at the same time, for example, influencing the reasoning of decisions in a way that produces doctrine that is more favorable to plaintiffs. Unfortunately, moving to a

measure that is more nuanced than our binary indicator for outcomes would be very difficult to do in a sample of Court of Appeals cases such as ours (see footnote 8).

Our ability to adjudicate among alternative hypotheses concerning panel decision making with respect to minority representation is made possible by our use of a modeling approach that explicitly accounts for institutional factors. Most significantly, the three-judge panel structure, governed by a strong norm of unanimity motivated by concerns of institutional legitimacy and efficacy, ties the votes of individual judges to the preferences of their colleagues. We have thus pursued a modeling strategy that accounts for the influence of the minority status of judges not only at the individual level, but also at the panel level. The use of panel composition variables revealed a highly robust finding that the presence of a woman on a panel makes males on the panel substantially more likely to rule for a discrimination plaintiff, and concomitantly increases the probability of a panel decision in favor of a plaintiff. Moreover, had we neglected to include variables to account for circuit-level effects, our results would have suffered from bias due to misspecification.

Past studies of minority representation on the Court of Appeals have paid insufficient attention to institutional structure, and have focused on the effects of minority status only on the decision making of minority judges themselves, treating them no differently than lone trial judges. Consequently they have deployed a problematic research design that fails to properly evaluate the influence of minority judges on federal appellate decision making. Had we followed past Court of Appeals studies and evaluated only individual judge characteristics, we would have dramatically underestimated (by about half) the effect that women on the federal appellate bench have on the outcome of discrimination claims. Moreover, we would have been unable to ascertain whether any observed differences in women's voting were influencing their male colleagues and legal policy. Similarly we would have been without any basis to infer whether racial minority judges, who do not display different voting behavior, were suppressing their dissents or simply did not have different preferences on case outcomes than white judges. Since past Court of Appeals studies of minority representation have failed to account for either panel-level or circuit-level effects, we believe that our approach produces more reliable estimates of the influence of minority representation on Court of Appeals decision making, and should be adopted by future studies.

Our results also lead us to conclude that this institutionally grounded approach to studying federal appellate decision making has important implications beyond the substantive question of minority representation. Our findings that the ideological composition of the panel has more than double the effect on individual judge's votes than their own ideology confirm the findings of Revesz (1997) and Cross and Tiller (1998), and extend them outside the politically charged arena of judicial review of agency policy making into the more ordinary context of the single largest

case type on the federal docket. When this extension is coupled with our findings on the individual and panel-level gender variables, together they provide strong evidence that the long-standing approach in judicial politics scholarship of evaluating the influence of judges' attributes only at the individual level is insufficient.

Developing a deeper comprehension of how the majoritarian appellate panel structure mediates diversification of the judiciary into policy output requires a more thorough understanding of the dynamics among judges serving on panels as well as the dynamics between the panels and the larger circuit. An obvious extension of this article would be to attempt to operationalize more fine-grained measures of influence than case outcome. Application of our approach to other types of cases would yield additional insights. Finally, historical work examining the selection and maintenance of the specific institutional design of the appellate level of the federal judiciary, in conjunction with an exploration of the evolution of the norm of unanimity, would give us a more complete understanding of not only the dynamics of judicial decision making, but also the larger political dynamics of institutional choice in the United States.

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