

Sound the Alarm? Judicial Decisions Regarding Publication and Dissent

Judges sitting on three-judge panels in the U.S. Courts of Appeals make decisions under the shadow of potential review by supervising courts, the full circuit sitting en banc and the Supreme Court. Review is more likely for published decisions, particularly when a dissent is present. Unpublished decisions do not have binding precedential status. These factors create the potential for judges to be strategic in deciding whether to publish a decision or write a dissent. We develop a formal model of decision aggregation that takes the possibility of negotiating a tradeoff between the ideological location of a rule and its precedential value into account. Implications of our model are tested empirically using an original dataset of search and seizure cases. Our model and results indicate that preferences within the panel and judicial hierarchy coupled with discretionary review influence judges' decisions regarding publication and dissent, and that these choices have important consequences.

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1 Introduction

Many scholars believe that, in a judicial hierarchy, judges on higher courts are able to exert at least some control over judges on lower courts via the threat of review (see e.g., Beim, Hirsch and Kastellec, 2014; Cross and Tiller, 1998; Kornhauser, 1994; cf. e.g., Benesh, 2002; Bowie and Songer, 2008; Klein and Hume, 2008). Review carries with it the threat of reversal, which is potentially costly to lower court judges (Beim et al., 2014; Haire et al., 2003). If an appellate decision is reversed by a higher court, the judges in the majority face the creation or furtherance of a legal rule they dislike (McNollgast, 1994; Cameron et al., 2000). Judges do not know ahead of time which decisions will be reviewed, but there are known factors that make review more likely: among these factors are the presence of a dissent (Black & Owens, 2009; Caldeira et al., 1999; Epstein et al., 2011) and the publication status of the decision (see e.g., Black & Owens, 2009; Wald, 1985; Wasby, 2001). Generally, federal judges sitting on panels in the courts of appeals have control over the decisions pertaining to dissents and publication. Thus, judges are in a position to act in certain ways to encourage or discourage review based on the ideological preferences of themselves and the other judges on the panel. Scholars have considered how panel majorities may alter the rule or disposition they announce to appease a potential dissenter and reduce the chances of review (see e.g., Beim et al., 2014; Cross & Tiller, 1998; Epstein et al., 2011; Kastellec, 2007). In this article, we highlight the implications of an additional factor that is often overlooked by scholars: the panel majority may also sacrifice the precedential power of a decision to satisfy, or at least neutralize, a minority judge by choosing not to publish the decision. This potential for strategic behavior has been noted by prominent judges, including Justices Thomas and Blackmun (*Plumley v. Austin*, 2015, 831 (Thomas, J., dissenting); *Smith v. United States*, 1991, 1020 (Blackmun, J., dissenting)), and legal commentators, such as Adam Liptak of the *New York Times* (Liptak, 2015), and deserves scholarly attention.

In this article, we consider the potential impact of the strategic use of publication and dissent by incorporating these decisions into an examination of how members of an ideologically split panel on a federal court of appeals negotiate the location of the legal rule in the shadow of discre-

tionary review. In the vein of the work of Cross & Tiller (1998), Kastellec (2007), and Beim et al. (2014), among others, we investigate how an additional and generally ignored institutional feature of federal circuit courts, the publication decision, influences such bargaining. First, we construct a formal model of circuit decision-making and discuss how accounting for the publication decision generates interesting and counterintuitive predictions. Second, we empirically test some key predictions using an original dataset of search and seizure cases and find evidence of patterns predicted by our model. Specifically, our model indicates both that a majority is less likely to publish a decision and, thus, a potential whistleblower is less likely to write a dissent when the majority is farther from the supervising court. This counterintuitive result stems from the fact that when the majority is farther from the supervising court, the minority's dissent and the possibility of a supervising court's intervention pose a greater threat to the majority. Being aware of this, the minority demands a greater concession in the negotiation over new legal rules, which may lead the majority to prefer not publishing the decision and maintaining the status quo legal rule over publishing with a dissenting opinion by the dissatisfied minority. We test the implications of our model in light of review by both the Supreme Court and en banc panels. We find some evidence of the predicted behavior. Finally, we wrap up with a discussion of how understanding the publication decision in conjunction with dissents enhances and changes our understanding of judicial bargaining and outcomes.

2 Strategic Calculations and the Publication Decision

2.1 Panel Effects, Whistleblower Theory, and Dissent

Researchers have turned considerable attention to understanding how panel effects influence circuit judges' voting behavior and case outcomes more generally. Panel effects refer to the phenomenon in which "the outcome of both an individual judge's vote and the panels' decision may differ from what we might expect if a single judge had decided the same case" (Kastellec, 2011, 422). There is a large and robust literature investigating the impact of different panelist characteristics, including partisanship, gender, and race (see e.g., Boyd, 2013; Cross & Tiller, 1998; Boyd et al., 2010; Fischman, 2015; Kim, 2008; Sunstein et al., 2004). One of the leading theories to

explain panel effects among judges of varying ideology is Whistleblower Theory (Cross & Tiller, 1998). Whistleblower Theory posits that the presence of an ideological minority on a panel (sometimes referred to as a split panel) can induce the majority of a circuit panel to comply with the preferences of a higher court when the minority and the higher court are aligned (Cross & Tiller, 1998). The minority is so empowered because she can write a dissenting opinion that increases the likelihood that a supervising court will review and reverse the decision (see Black & Owens, 2009; Caldeira et al., 1999; Cross & Tiller, 1998). The dissenting opinion acts as a signal of non-compliance to a like-minded principal (see e.g., Cross & Tiller, 1998; Gailmard & Patty, 2013; Kastellec, 2011; McCubbins & Schwartz, 1984; Ting, 2008). Such review and potential reversal are highly undesirable to the panel majority, which may acquiesce rather than risk incurring such costs (Cross & Tiller, 1998; Epstein et al., 2011).

Cross & Tiller (1998) frame Whistleblower Theory in terms of obedience to legal doctrine in the form of Supreme Court precedent (see also Linkous & Tiller, 2009). Furthermore, they are agnostic to whether these effects are due to strategic (external) or deliberative (internal) factors (Linkous & Tiller, 2009). Other scholars consider such compliance specifically in terms of fear of reversal on the part of the panel majority and higher court preferences broadly, i.e., ideology (see e.g., Kastellec, 2007, 2011; Kim, 2008). Within Political Science, impressive work has been done regarding the relationship between the higher courts (Supreme Court and en banc panels¹) and circuit court panels in light of the potential for whistleblowing (see Beim et al., 2014; Kastellec, 2007, 2011). Thus, there are theoretical and empirical reasons to believe that a whistleblower effect exists, though the effect is not always apparent (see Hettinger et al., 2004, 2007, finding no

¹While review by the Supreme Court and en banc panel both represent discretionary review by a higher or supervising court, there are differences in the nature of the review. En banc review is carried out by fellow circuit judges (either all other judges on the circuit or a substantial subset (Giles et al., 2006)) to ensure consistency within the circuit or address an important issue (FED. R. APP. P. 25(a)). Supreme Court review establishes the law at the national level, often with aim of resolving conflicts among courts (SUP. CT. R. 10; Black and Owens, 2009)

evidence for a strategic account of whistleblowing in terms of en banc review).

2.2 Publication, Dissents, and Strategy

When printing space was limited, courts created systems for determining which cases should be published, and thus available for citation, based on their relative novelty and importance (see e.g., Coyle, 2003; Songer, 1989; Wasby, 2001). In the modern era, electronic publishing has allowed nearly all decisions to be accessible, but the practice of marking decisions as unpublished is still widespread (Reagan, 2007; Serfass & Cranford, 2001). Though rules regarding when a decision should be published vary (see e.g., Merritt & Brudney, 2001; *Federal Court of Appeals Manual, Local Rules*, 2012; Swenson, 2004), unpublished decisions are common in both federal and state courts (Serfass & Cranford, 2001).² Such unpublished decisions are generally not binding precedent (Reagan, 2007; Serfass & Cranford, 2001).³ This practice of designating only some decisions as appropriate for publication is justified by proponents on the grounds that it reduces workloads for courts that would otherwise have to dedicate increased resources to constructing well-crafted opinions in all cases (Coyle, 2003; Robel, 1989; Wasby, 2001) and attorneys who would otherwise need to review voluminous decisions (see Robel, 1989). Potential reviewing courts can also save time by using publication status as a signal for whether a case involves salient or unusual legal issues (see e.g., Black & Owens, 2009). Often, the choice of whether a decision from a federal court of appeals will be published is in the hands of the judges involved in the case (see e.g., *Federal Court of Appeals Manual, Local Rules*, 2012; Swenson, 2004; Wasby, 2001).

²For example, in the twelve month period ending on Sept. 30, 2011, circuit courts did not mark approximately eighty-five percent of the opinions produced by circuit panels as published (Administrative Office of the United States Courts, 2011).

³Rather, unpublished decisions are usually treated as persuasive authority (see e.g., Coyle, 2003). Judges may ignore such persuasive authorities without fear of reprisal, and are less likely to cite and more likely to negatively treat persuasive authority than binding precedents (Hinkle, 2003).

Unpublished cases are very unlikely to be reviewed by appellate courts with docket control⁴ as they are generally of limited importance due to the fact that they apply only to the parties at hand (see e.g., Black & Owens, 2009; Wald, 1985; Wasby, 2001). Supreme Court justices (*Plumley v. Austin*, 2015, 831 (Thomas, J., dissenting); *Smith v. United States*, 1991, 120) (Blackmun, J., dissenting)), legal commentators (see e.g. Cleveland, 2009; Liptak, 2015), and litigants (see Cleveland, 2009) have expressed concern regarding the fact that unpublished decisions are generally not reviewed: for example, Justice Blackmun, dissenting from a denial of certiorari, stated that “[n]onpublication must not be a convenient means to prevent review” (*Smith v. United States*, 502 U.S. 1017, 1020 (1991)(Blackmun, J., dissenting)).

The publication decision opens the door to the potential for strategic bargaining over the outcome of an individual case and whether a generally binding legal rule will be announced (see Arnold, 1999; Cleveland, 2009; Law, 2005; Wald, 1985; Wasby, 2001). There is empirical (see e.g., Merritt & Brudney, 2001; Songer, 1989) and anecdotal (see e.g., Cleveland, 2009) evidence that unpublished opinions encompass many decisions that are neither routine nor simple, suggesting that judges are engaged in more sophisticated decision-making. For example, in a recent dissent from a denial of certiorari, Justice Thomas surmised that “[i]t is hard to imagine a reason that the Court of Appeals would not have published this opinion except to avoid creating binding law for the Circuit” (*Plumley v. Warden*, 2015, 831 (Thomas, J., dissenting)). At least three judges who served on federal courts of appeals have published concerns that such strategic behavior is possible (Ginsburg, 1985, 222), likely (Arnold, 1999), or occurring (Wald, 1985). The majority may use the publication decision strategically to limit the impact of the majority opinion in order to pacify a minority judge who is threatening to dissent. It may also choose not to publish its opinion to offset the signaling power of any such dissent. What appears to be a procedural, house-keeping mechanism on its face carries a potential threat to the fairness and equality of the system by allow-

⁴Such review can be carried out by either the full circuit en banc or by the Supreme Court (see e.g., Hettinger et al., 2004; Kastlelec, 2011). See Appendix A for summary statistics regarding the review rates.

ing a court to produce an opinion or set of opinions that are different than those it would produce if the decision(s) were going to be published. Such decisions could allow judges to disregard precedent with relative impunity and little transparency.

There are empirical reasons to believe that the decision whether to publish can be an important strategic decision within the whistleblowing context. Despite the guidelines for publication, Songer (1989, 307) found that many unpublished cases are “non-routine, politically significant, and present the judge with an opportunity to exercise substantial discretion.” Furthermore, federal judges have voiced concerns about strategic behavior in terms of publication (Law, 2005). For example, the Honorable Patricia Wald, a then sitting judge on the Court of Appeals for the District of Columbia, noted:

Time does not allow for the same careful, thoughtful analysis and writing to be poured into all cases. But a double-track system allows for deviousness and abuse. I have seen judges purposely compromise on an unpublished decision incorporating an agreed-upon result in order to avoid a time-consuming public debate about what law controls. *I have even seen wily would-be dissenters go along with a result they do not like so long as it is not elevated to a precedent.* (Wald, 1995, 1374, emphasis added)

In this same vein, Arnold (1999), a federal court of appeals judge who sat on the Eighth Circuit, expressed concern about the possibility of strategic behavior in the publication decision:

If, for example, a precedent is cited, and the other side then offers a distinction, and the judges on the panel cannot think of a good answer to the distinction, but nevertheless, for some extraneous reason, wish to reject it, they can easily do so through the device of an abbreviated, unpublished opinion, and no one will ever be the wiser. (I don't say that judges are actually doing this—only that the temptation exists.) Or if, after hearing argument, a judge in conference thinks that a certain decision should be reached, but also believes that the decision is hard to justify under the law, he or she can achieve the result, assuming agreement by the other members of the panel, by deciding the case in an unpublished opinion and sweeping the difficulties under the rug.

Additionally, several studies have found that published and unpublished cases vary in important ways (Keele et al., 2009; Law, 2005; Merritt & Brudney, 2001; Olson, 1992; Songer, 1989), though empirical evidence of ideological and strategic behavior has been mixed (see Keele et al., 2009;

Law, 2005; Merritt & Brudney, 2001; Swenson, 2004). Despite quantitative and anecdotal evidence that the publication decision implicates strategy and may influence bargaining over decisions, scholars have generally ignored the decision whether or not to create binding precedent in studies of judicial decision-making. Courts are, in essence, presented with the option of not announcing a generally applicable rule, and the potential impact this decision has on outcomes deserves consideration. Thus, we turn to considering decision-making on panels in light of the publication decision.

3 Opinion-Writing Model

We model the process of opinion writing on a three-judge split panel in which two judges (the majority) prefer one case outcome and one judge (the minority) prefers the opposite outcome. A case is represented by a point in the one-dimensional case space, and the most preferred legal rules of the majority and minority are denoted by M and m , respectively, in the same case space.⁵

In resolving a case, judges care both about the case outcome that is specific to the given case and the legal rule that may have continuing effects on similar cases if the majority publishes an opinion. For a legal rule $r \in \mathbb{R}$, the utility of a judge with ideal point $j \in \{M, m\}$ is $-|j - r|$. As the legal rule gets farther from a judge's ideal point, her utility decreases. Consequently, judges will seek to modify an undesirable status quo rule and set a new rule closer to their ideal points.⁶

⁵By focusing on the split panels, we assume that the case fact falls between M and m . We only address dissenting opinions for purposes of simplicity. Concurrences also occur and can affect the rule but not in the same way or to the same extent as dissents (Hettinger et al., 2007). We hope to address this in future work.

⁶Based on the nature of common law, each additional application of a rule helps define it (see Bueno de Mesquita & Stephenson, 2003; Robel, 1989): “[i]nherent in every judicial decision is a declaration and interpretation of a general principle of the rule of law” (*Anastasoff v. United States*, 223 F.3d 898, 899 (8th Cir. 2000)). No two cases are truly identical as to every fact that could be theoretically relevant to the application of law (Sunstein, 1993). Furthermore, due to the fact that the use of precedent is based on analogical reasoning, there are existing precedents that relate to

The sequence of the game is illustrated in Figure 1 and proceeds as follows: (1) A case arrives, and the panel is divided into a majority (M) and minority (m). In the following analysis we focus on the situation $m < M$, but the opposite configuration ($m > M$) can be analyzed analogously. (2) The majority decides whether to publish (P) an opinion which sets a new legal rule, \bar{r} , or to not publish (NP) and maintain the status quo legal rule q . (3) Following the majority's decision of publishing \bar{r} or maintaining q , the minority judge decides to write a dissenting opinion (D) or not (ND).⁷ Writing a published opinion or dissent is costly (see e.g, Lax & Cameron, 2007). The majority pays cost $c > 0$ if it publishes an opinion \bar{r} ,⁸ and the same for the minority judge if he writes a dissenting opinion⁹ (Carrubba et al., 2011; Epstein et al., 2011; Farhang & Wawro, 2004; Fischman, 2015; Kastellec, 2011). (4) After the panel resolves a case, the supervising court intervenes with probability p . We assume that the supervising court intervenes with a higher probability, p_H , if the panel publishes an opinion *and* there is a dissenting opinion and a lower probability ($p_L = 0$) in all other cases (see Wald, 1985). The supervising court is more likely to intervene and review a lower court decision when the stakes are high, such as when a majority opinion is published and, therefore, binding on all future cases in the circuit (see e.g., Black & Owens, 2009; Wald, 1985). Further, dissenting opinions send a supervising court a signal that the case may need to be reconsidered (see e.g. Caldeira et al., 1999; Cross & Tiller, 1998; Kastellec, even relatively novel legal issues (Sunstein, 1993).

⁷This sequence reflects the reality that a draft majority opinion is typically circulated before others decide whether to circulate a dissent (Bowie et al., 2014).

⁸The author of the majority opinion has to write an opinion, so it is a sunk cost (Epstein et al., 2011). Writing an opinion worthy of publication and capable of establishing far reaching precedent, on the other hand, involves additional costs (Bueno de Mesquita & Stephenson, 2003; Lax & Cameron, 2007; Wald, 1995).

⁹While it is an oversimplification to say the additional cost of writing a majority opinion suitable for publication is the same as the cost of writing a dissent, varying the cost for the majority c_M and minority c_m would not materially alter our conclusions.

2007, 2011).¹⁰ Allowing p_L to be greater than zero does not result in any qualitatively different predictions.¹¹ If the supervising court intervenes, it moves the legal rule to its ideal point s .¹²

[Figure 1 about here.]

As noted above, judges care about both case outcome and the location of the legal rule. Our focus in this article is on bargaining over the location of the published opinion between the majority and minority judges and its effect on the decisions to publish and dissent. Accordingly, we concentrate exclusively on judges' utilities stemming from the legal rule.¹³ The expected utility of

¹⁰Appendix A contains summary statistics regarding empirical review rates for different types of cases.

¹¹A more complicated model with different probabilities of the supervising court's intervention for (publication, dissent), (publication, no dissent), (no publication, dissent), and (no publication, no dissent) is available from the authors upon request. In this alternative model, it is possible that the minority writes a dissenting opinion even if the majority does not publish any opinion but this occurs only under very unlikely parameter configurations.

¹²Another approach would be to model this situation as a signaling game with two senders, panel majority and minority, and a receiver, the supervising court, which, upon observing the signals from the panel majority and minority, updates its belief about the location of case facts and the location of the legal rule and decides whether to review a lower court decision. Current work taking this approach in the context of case outcomes suggests that it would also be fruitful to extend our work incorporating legal rules and publication in this direction as well (Beim, Hirsch and Kastellec, 2014). However, it is important to lay the groundwork first. Our focus here is to construct a model to incorporate the publication decision into a fairly complex environment of bargaining over the location of a legal rule.

¹³An alternative approach is modeling a judge's utility using $I - \alpha|j - r|$, where $I = 1$ if the collective decision corresponds with the judge's own judgment regarding the case outcome and 0 otherwise, and α represents the importance of the legal rule relative to the case outcome. Although

judge $j \in \{M, m\}$ is

$$U_j = p(-|j - s|) + (1 - p)(-|j - r|) - C,$$

where r is \bar{r} if the majority publishes an opinion and the status quo q otherwise; C is the cost of opinion writing c if j writes a dissent or a published majority opinion and 0 otherwise; and finally, p is p_H when there is a published majority opinion accompanied by a dissent and $p_L = 0$ otherwise. We look for subgame perfect equilibria of the game.¹⁴

As a preliminary matter, note that the majority opinion \bar{r} will never fall outside of the ideal points of the majority and the minority. For any $\bar{r}' > M$, the majority can always increase its utility by choosing $\bar{r} = M$. Also, for any majority opinion $\bar{r}' < m$, the utility of the minority judge remains the same if the majority chooses $\bar{r} = 2m - r$ (the reflection point of r with respect to m), which is closer to the majority.

Observation 1. *If the lower court publishes its opinion, the location of the rule lies between the ideal points of the majority and the minority.*

A minority judge can always express disagreement with the collective decision by writing a dissenting opinion. Since a dissenting opinion increases the probability of supervising court judges surely care about case outcomes, excluding this component from the utility function does not change the main results of the model. Consequently, we choose to simplify the presentation of the model. Additionally, by looking within one issue area in the empirical analysis that follows, we assume that α is constant. We thank the anonymous reviewer who pointed this out and suggested this model simplification. The alternative version of the model is available from the authors upon request.

¹⁴To simplify the analysis, we assume that (1) the minority does not write a dissenting opinion if he is indifferent between writing a dissenting opinion or not; (2) the majority publishes an opinion if it is indifferent between publishing a majority opinion or not; and (3) the majority publishes $\bar{r} = M$ if it is indifferent between publishing M and any other location.

intervention (when the majority publishes its opinion), the minority has an incentive to write a dissent only when he expects a utility gain from supervising court intervention. This will occur when the legal rule would be moved closer to the minority judge's ideal point than the current legal rule. Increasing the probability of supervising court intervention by writing a dissenting opinion is, of course, not costless (Carrubba et al., 2011; Epstein et al., 2011; Farhang & Wawro, 2004; Fischman, 2015; Kastlelec, 2011). The minority judge writes a dissenting opinion if and only if supervising court intervention would be sufficiently beneficial to the minority to outweigh the cost. This situation occurs only when the majority chooses to publish. When the majority does not publish, the probability of supervising court intervention remains low, regardless of the presence of a dissenting opinion.

Thus, consider the minority's strategy in the subgame following the majority's decision to publish an opinion \bar{r} . While it is possible for the supervising court's ideal point to be more extreme than both the panel majority and minority, we focus the discussion here on the more common configurations where the supervising court's ideal point is between the majority and the minority ($m < s < M$) since these are both more theoretically interesting (because they occur more often) and more amenable to empirical testing (due to the availability of data).

Lemma 1. *If the majority publishes an opinion, the minority writes a dissenting opinion if and only if the legal rule is farther from the minority than a cutpoint $r^* = s + \frac{c}{p_H}$.*

The minority writes a dissenting opinion following the majority's decision of publishing \bar{r} if doing so will increase his expected utility. The threshold, r^* , reflects how demanding the minority is. The minority will write a dissent if the new rule announced is farther from him than the supervising court and some additional distance defined by the cost of writing dissent relative to the probability of review if he writes a dissent. If r^* is close to M , the majority can satisfy the minority by moving the legal rule closer to the minority a relatively small amount. On the other hand, if r^* is far from M , the majority needs to write an opinion relatively farther from its preferred rule (and closer to m) in order to keep the minority from writing a dissenting opinion. At the same time, if writing a dissenting opinion becomes more costly (an increase in c), the minority becomes less

demanding. Similarly, as p_H decreases, i.e. the threat of inducing supervising court intervention by writing a dissenting opinion is less effective, the minority becomes less demanding.

Anticipating the behavior of the minority, the majority decides whether to publish a majority opinion \bar{r} or not. From Observation 1, we know the location of the majority opinion \bar{r} lies between M and m . Lemma 1 tells us that the minority's decision to dissent depends on the threshold r^* . From these two facts, we can farther deduce that if the majority publishes its opinion, \bar{r} will be located at two possible points: M or r^* . If the minority's threshold r^* is above M , the minority does not write a dissenting opinion even if $\bar{r} = M$, so the majority writes $\bar{r} = M$ without increasing the risk of supervising court intervention. Next, if $r^* < M$, for any opinion farther than r^* from m , the minority writes a dissenting opinion. Thus, the majority is better off writing an opinion at its ideal point $\bar{r} = M$ rather than $\bar{r}' \in (r^*, M)$ since the minority will always write a dissenting opinion. Finally, the minority does not write a dissenting opinion if \bar{r} is below r^* . The majority's expected utility decreases and the minority's expected utility increases as \bar{r} moves toward m from r^* . Thus, the majority is better off by publishing $\bar{r} = r^*$ than any $\bar{r}' < r^*$. In short, the majority either sets the new legal rule at its own ideal point or compromises with the minority by moving the legal rule just far enough to neutralize the minority's incentive to write a dissent.

The majority prefers publishing its own ideal point when the minority's demand is trivial ($r^* \geq M$) or when the minority is too demanding to compromise, that is, for small values of r^* . On the other hand, the majority publishes r^* if the benefit from compromise, preventing the minority from writing a dissenting opinion, exceeds its expected utility loss from making the compromise: moving \bar{r} from M to r^* . Lemma 2 states the majority's preference over publishing its ideal legal rule M or the compromise legal rule r^* .

Lemma 2. *Suppose that the majority publishes an opinion. Then,*

(i) The majority publishes its ideal rule M and the minority does not dissent if

$$|M - s| \leq \frac{c}{p_H}.$$

(ii) *The majority publishes its ideal rule M and the minority dissents if*

$$|M - s| \geq \frac{c}{p_H(1 - p_H)}.$$

(iii) *The majority publishes compromise rule r^* and the minority does not dissent if*

$$\frac{c}{p_H} < |M - s| < \frac{c}{p_H(1 - p_H)}.$$

Figure 2 illustrates how the location of published opinion \bar{r} changes as the majority's ideal point M changes (while holding the location of the supervising court constant). When the majority's ideal point is closer to the supervising court, specifically to the left of the shaded region, the majority publishes M because the minority's demand is not binding. If M falls within this interval, the minority judge has no incentive to dissent. In the shaded region between the two dotted lines, the majority publishes r^* to accommodate the demand of the minority and keep him from dissenting. If M lies to the right of the shaded compromise zone, the majority prefers M to r^* even though the minority will dissent.

[Figure 2 about here.]

The panel majority, knowing its preference over M and r^* and anticipating the minority's behavior, decides whether to publish an opinion or not publish (and, consequently, maintain the status quo legal rule). If the status quo is sufficiently close to M , the majority need not publish an opinion because the gain from writing an opinion and pulling the legal rule closer to M from q is smaller than the cost of writing a published opinion.¹⁵ Further, if the majority's preferred legal rule M is far from the supervising court, the majority may choose not to publish an opinion in order to unilaterally circumvent the whistleblowing effect of a dissenting opinion. Proposition 1 specifies the

¹⁵Additionally, in the absence of a potential dissenter, the majority will only publish an opinion where the value of the rule compared to the status quo exceeds the cost of writing a published opinion. Thus, routine opinions will often be unpublished.

conditions under which the majority decides to publish an opinion rather than maintain the status quo. (For formal derivation of the results, see Appendix B.)

Proposition 1. *In the subgame perfect equilibrium,*

(i) *The majority publishes its ideal rule M and the minority does not dissent if*

$$|M - s| \leq \frac{c}{p_H} \text{ and } |M - q| \geq c.$$

(ii) *The majority publishes its ideal rule M and the minority dissents if*

$$|M - s| \geq \frac{c}{p_H(1 - p_H)} \text{ and } |M - q| \geq p_H|M - s| + c.$$

(iii) *The majority publishes compromise rule r^* and the minority does not dissent if,*

$$\frac{c}{p_H} < |M - s| < \frac{c}{p_H(1 - p_H)} \text{ and } |M - q| \geq |M - s| - \frac{c(1 - p_H)}{p_H}.$$

(iv) *In all other situations the majority does not publish its opinion and the minority does not dissent.*

[Figure 3 about here.]

Figure 3 illustrates these equilibria. The horizontal and vertical axes are possible values of M and q , respectively. If (M, q) falls in the gray region, the majority chooses not to publish. As M gets farther from the supervising court's preferred legal rule, s , the majority decides not to publish an opinion for a (weakly) wider range of status quo values. When the majority's ideal point is to the right of the cross-hatched compromise zone, the majority prefers setting a new legal rule at M rather than r^* , and accordingly, the minority writes a dissenting opinion if the majority publishes its opinion. As M gets farther from s , the increased probability of supervising court intervention generated by a dissent imposes an increasing risk to the majority since the supervising court will pull the legal rule to s if it intervenes. Therefore, the majority prefers maintaining the status quo

and prevents the minority from dissenting for a wider range of the status quo values. Due to the majority's increased preference for the status quo, when M is right of the compromise zone, the minority becomes less likely to write a dissenting opinion as M gets farther from s . This illustrates how taking the publication decision into account can lead to counterintuitive expectations.

4 Empirical Implications

The equilibrium strategies described in the previous section detail the circumstances under which we expect judges to publish and dissent. Figure 3 illustrates that as the panel majority gets farther from the supervising court it publishes its opinion for a (weakly) decreasing range of possible status quo values.¹⁶ For purposes of this empirical investigation, we do not take on the challenging task of measuring the status quo point. Instead we rely on the observation that in the aggregate the patterns depicted in Figure 3 should lead to fewer opinions being published when the majority is located farther from the supervising court.

***Hypothesis 1:** An increase in the distance between the panel majority and the supervising court, $|M - s|$, will lead to a decrease in the probability that the opinion is published.*

This hypothesis is exclusively consistent with our strategic account of a panel majority using the publication decision to defuse a whistleblowing threat. Legal explanations for making the publication decision focus on factors such as issue importance and case salience. There is no reason to expect such factors to be correlated with the distance between a panel majority and the supervising court. Our model similarly generates a distinct prediction about the probability of dissent. Figure 3 illustrates that as the majority gets farther from the supervising court (moving

¹⁶When the majority is located to the left of the compromise zone, the range of status quo values that will prevent publication remains constant across values of $|M - s|$. However, this situation only occurs when the minority's demand regarding the legal rule is trivial, i.e., it will not dissent even if the majority publishes the opinion setting the rule at M , its own ideal point.

from left to right) the minority judge writes a dissent for a (weakly) decreasing range of status quo values. The model specifies that the minority will never dissent when the majority opinion is unpublished. Consequently, the majority's increasing unwillingness to publish as it gets farther from s means that the probability of dissent decreases as well.

***Hypothesis 2:** An increase in the distance between the panel majority and the supervising court, $|M - s|$, will lead to a decrease in the probability of dissent.*

This counterintuitive hypothesis is the result of including the publication decision in our model and illustrates the importance of accounting for this key institutional feature of federal circuit courts. Intuitively, Whistleblower Theory suggests that a minority judge will be *more* likely to dissent when the panel majority is more vulnerable, i.e., located farther from the supervising court. In fact, this is precisely what a simplified version of our current modeling approach would predict if the game required every majority opinion to be published. Under such circumstances the minority would always dissent when the majority chose $\bar{r} > r^*$. When the majority moves farther from the supervising court, an increase in $|M - s|$, it is more difficult for the majority to accommodate the demand of the minority r^* because r^* also gets farther from M . As Figure 3 illustrates, the majority prefers its ideal legal rule M over the compromise r^* , and the minority always writes a dissenting opinion if $|M - s|$ exceeds a certain threshold. However, accounting for the decision regarding publication results in the opposite prediction, even with the same underlying strategic explanation of whistleblowing as the source of a minority judge's influence.

Since publication status is central to our investigation, we must examine both published and unpublished cases. We focus on a single broad issue area (search and seizure law) from 2005 to 2008.¹⁷ This approach helps mitigate concerns raised by considering dramatically heterogeneous case types at the same time (see Friedman & Martin, 2011). We identify search and seizure cases using Lexis's *Shepard's* service to identify every circuit case from 2005 to 2008 that cites

¹⁷Prior to 2005, not all circuits made their unpublished opinions available to Westlaw and Lexis (Schiltz, 2005).

the Fourth Amendment of the United States Constitution. Both the D.C. Circuit and the Second Circuit are excluded from our empirical analysis because they have institutional rules that vary in significant ways from the assumptions underlying our model.¹⁸ The resulting dataset contains 3,763 cases. Table 1 shows the incidence of publication and dissent. The majority of the cases - nearly sixty percent - are unpublished (Swenson, 2004; Merritt & Brudney, 2001). Although our theory predicts that there will never be a dissent in an unpublished case, real world data shows that this does occur. However, the dissent rate is three times larger in published cases than in unpublished cases.

[Table 1 about here.]

In order to test our hypotheses, we must identify which judges belong to the panel majority and who belongs to the minority. Such a determination cannot be made post hoc on the basis of judges' votes because minority judges only rarely identify themselves by writing a dissenting opinion, and this is one of the decisions we are studying. Our approach is to leverage the institutional structure of the federal courts along with a standard continuous measure of judicial ideology. The ideological location of each judge is measured using Judicial Common Space ("JCS") scores. These scores are based on the ideology of the political elites who appointed a judge and are located on a scale from -1 (liberal) to 1 (conservative) (Giles et al., 2001; Epstein et al., 2007; Martin et al., 2004; Poole, 1998). For Supreme Court justices, the JCS scores are a conversion of Martin-Quinn scores which places them on the same scale as the appellate judges' JCS scores (Epstein et al., 2007; Martin et al., 2004).

The location of the ideal point of the supervising court is simply the median score of the judges on the supervising court. While we develop the formal model and hypotheses with reference to a generic supervising court, we evaluate the empirical support for the predictions of our model in terms of two distinct sources of panel supervision. Both the Supreme Court and the full circuit

¹⁸In the D.C. Circuit even unpublished cases have precedential value, and the Second Circuit requires that cases with dissents be published (Reagan, 2007).

have discretionary authority to review a panel decision. For the Supreme Court, s represents the location of the median justice in the applicable year. For en banc review, s is the location of the median judge on active status (i.e., not retired) for the relevant circuit and year.

Classifying one particular judge on each panel as the minority is a necessarily imperfect task. As a result of both mandatory jurisdiction and the norm of appellate deference to the fact-finder, circuit panels have a strong tendency to affirm the district court. For example, in our dataset the panel affirmed the district court opinion 80% of the time. In light of this reality, we rely on the simplifying assumption that the panel majority prefers to affirm the ruling below. Consequently, we identify the panel member located farthest from the district court ruling as the minority judge. This classification, while not perfect, performs well when compared with alternative approaches (see Appendix C). When a conservative ruling is being appealed, the most liberal panel judge is identified as m , and when a liberal ruling is being appealed, the most conservative panel judge is identified as m .¹⁹ However, we make an exception where two panel judges have the same JCS score. Under this preference configuration, the most sensible designation of the panel minority is the remaining judge who has a different ideal point.²⁰ After designating one judge as m , the minority, using this two-step process, the location of the panel majority, M , is the median of the JCS scores of the two remaining panel judges.²¹

¹⁹A ruling in favor of the state actor who conducted the search or seizure in question is coded as conservative while a ruling in favor of the subject of an allegedly illegal search or seizure is coded as liberal. We exclude from consideration the handful of cases with cross-appeals.

²⁰Excluding those instances in which the two judges share the same JCS but the remaining judge is aligned with the lower court opinion does not change our results in terms of the sign or significance of the effects.

²¹We also use these measures to exclude cases in which the supervising court is demonstrably more extreme than both the panel majority and minority. Specifically, we analyze cases in which $(M - .05) < s < (m + .05)$ or $(m - .05) < s < (M + .05)$. Moreover, this data restriction excludes the small number of cases in which all three panel judges share the same JCS score.

In order to test our hypotheses we compile data on two outcome variables, dissent and publication. Both are coded based on information in the opinion itself. We examine the presence of a dissenting opinion written by any of the three panel judges. This approach provides results that are more readily comparable to existing work on the determinants of dissent.²² The key explanatory variable is the distance between the majority and the supervising court, $|M - s|$. We use the caseload of a circuit in a given year as a proxy for the cost parameter, c , by incorporating a measure of the average number of cases terminated per active judge in a given circuit and year obtained from the Federal Court Management Statistics.²³ When a judge has more cases to dispatch overall, the additional burden of writing an opinion is greater than when a judge has more time on her hands. We expect that both publication and dissent will be less likely when the cost of writing is greater.

Other factors may also influence publication and dissent. Search and seizure issues can arise in the course of either criminal or civil litigation. These contexts have some important differences, such as the standard of review, so we control for whether the context is criminal (or civil). Next, we account for the procedural posture of a case by controlling for whether the panel opinion overturned the district court ruling in full or in part.²⁴ A panel must simultaneously consider two sources of supervision. As a result, publication and dissent decisions may be influenced by the ideological proximity of the home circuit to the Supreme Court. Since the Supreme Court is consistently

²²Our substantive conclusions do not change if we model only dissenting opinions written by the judge classified as the minority, m . See Appendix D.

²³The Federal Court Management Statistics are available online at http://www.uscourts.gov/Statistics/FederalCourtManagementStatistics/FederalCourtManagementStatistics_Archive.aspx.

²⁴The Supreme Court's 2005 ruling in the *Booker/Fanfan* cases rendering the United States Sentencing Guidelines advisory resulted in frequent, but routine, remands for resentencing in our data. A circuit ruling affirming on all points except a limited remand for resentencing is coded as an affirmance.

conservative over the four years of our study, we control for whether the circuit has a majority of active judges appointed by Republican presidents.²⁵

Finally, we control for factors that increase the likelihood of discretionary review, salience and inter-circuit conflict (Black & Owens, 2009; Giles et al., 2006). Both concepts are challenging to quantify in the intermediate appellate context. Each panel opinion does identify whether there was any amicus participation in the case. This is quite rare at the circuit court level, occurring in only 1.2% of cases. We use a binary variable for the presence of any such amicus participation to indicate particularly salient cases (Hettinger et al., 2004). In addition to salience in general, the presence of a circuit split on a legal issue is also likely to generate a higher probability of review. The full circuit may want its collective wisdom brought to bear on such a difficult legal issue, and the Supreme Court bears the ultimate responsibility of resolving conflicts among circuits. We construct a proxy for the likelihood of inter-circuit conflict by counting the number of outside circuits cited in a panel opinion. The modal opinion does not cite any other circuits, and less than one quarter of opinions cite more than two other circuits. While conflict may not be the only reason for referring to sister circuits' opinions, discussion of such a conflict does typically involve citing each circuit that has weighed in on the debate. Consequently, we expect citation to multiple circuits to signal the possibility of conflict.

Our empirical tests require examination of two endogenous binary decisions, so we model the decisions to publish and dissent using a bivariate probit model. This allows us to estimate a joint distribution of these two outcomes rather than examining each in turn without fully accounting for the other (Staton, 2006).²⁶ Our hypotheses predict a negative correlation between the distance from the panel majority to the supervising court, $|M - s|$, and the probability of both publication and dissent. The model results in Table 2 show evidence of only one of the anticipated patterns for each type of supervising court: $|M - s|$ has the expected significant, negative impact on the rate

²⁵We rely on this dichotomous measure because using JCS scores here as well as to measure $|M - s|$ would introduce substantial collinearity.

²⁶Our substantive conclusions remain the same if we use separate probit models.

of publication in the en banc model and on the rate of dissent in the Supreme Court model. The sizes of these effects are illustrated in Figure 4. In the en banc model, when the full circuit and the panel majority are most closely aligned the probability a decision is published is 37% while it falls to 20% when the panel majority is most ideologically distant from the median of its own circuit. However, the corresponding effect on publication in the Supreme Court model is neither statistically significant nor in the expected direction. There is also no evidence in support of our hypothesis regarding dissent in the en banc model. Yet the expected effect is both statistically significant and substantial in the Supreme Court model. The dissent rate drops from 4.2% to 1.2% over the range of $|M - s|$. This finding that the relative location of the Supreme Court and the panel majority can more than triple the dissent rate is particularly remarkable in light of the fact that it is in accordance with our model's predictions, but otherwise fairly counterintuitive.

[Table 2 about here.]

[Figure 4 about here.]

The control variables have very similar effects in the Supreme Court and en banc contexts. As expected, a higher caseload significantly decreases the probability of both publication and dissent. Similarly, when the circuit is fulling affirming the court below both publication and dissent are less frequent. Panels in circuits with a majority of Republican-appointed judges publish more frequently, but dissent less frequently, than their counterparts in circuits with a Democratic majority. The citation to a greater number of sister circuits is associated with higher levels of both publication and dissent. There is evidence that case type and amicus participation influence the publication decision, but not dissent. Criminal appeals and cases in which one or more amici participate are more like to result in published opinions.

5 Conclusion

Our model illustrates how the practice of denying some decisions precedential value has the potential to result in strategic decisions that lead to counterintuitive patterns of dissent. Our empirical results provide partial evidence of such patterns in real-world data. Specifically, we find

evidence that an increasing distance between the panel majority and the supervising court leads to the predicted decrease in publication (but only in the en banc model) and the predicted decrease in dissent (but only in the Supreme Court model). The failure to find a statistically significant effect on dissent in the en banc model is consistent with previous work (Bowie et al., 2014; Hettinger et al., 2004). One possible explanation for this result could be that judges within a circuit are more likely to know each other and have other ways of signaling the need for review, such as conversing in person or via phone. Such alternatives will often be less costly than writing a dissent. This is in stark contrast to the hypothesized effect on dissent we uncover in the Supreme Court model, which is novel to the literature. Existing theory would suggest that any strategic effect of dissent should manifest as a decrease in dissent as the panel majority becomes more closely aligned with the Supreme Court. Yet we show that in the context of Supreme Court review, accounting for publication counterintuitively leads to the opposite pattern.

Our model suggests that as the distance between the majority of the panel and the higher court increases a decline in publication and dissent rates will result from bargaining by which panel majorities can obtain a desired outcome in an individual case with a lower chance of reversal by failing to make generally applicable law. We find evidence of such a decrease in publication in the case of en banc review and in dissent in the case of Supreme Court review. The model and results also suggest that use of the majority median as a proxy of the published opinion position, while ignoring the influence of the minority who can exert influence under certain conditions, might misguide our understanding of the judicial system. Institutions that allow for unpublished opinions include not only the federal court system, but also the majority of state court systems (Serfass & Cranford, 2001). Thus, there are widespread implications.

The model presented in this article is simplification of reality and has own limitations. For instance, we have assumed that supervising courts intervene with fixed and exogenous probabilities. As Beim, Hirsch and Kastlecc (2014), judges in supervising courts are also strategic. An interesting extension of the model is to include supervising courts as a strategic player and consider

the discretionary publication decision²⁷ Although the model is quite simple, focusing on judges' preferences regarding legal rules and the power of dissent to increase the chances of review, we provide empirical evidence consistent with our model, which could not be explained otherwise. For instance, it seems intuitive that the minority judge is more likely to blow the whistle when the majority is ideologically farther away from the supervising court. As the empirical analysis shows, however, it is not the case and our model provides an explanation regarding why: a majority that has more to lose from the supervising court's intervention sometimes compromises on the legal rule with the minority and other times sacrifices the precedential power of the decision by not publishing the decision in order to neutralize the possible threat posed by the minority's dissent. This article breaks new ground in formalizing when lower court judges may use publication decisions strategically and show its consequences under the threat of minority's dissenting opinion.

Our model and results highlight an additional wrinkle in understanding the role of whistleblowers within the judicial hierarchy: the ability of judges to stop the creation of precedent for strategic reasons. Furthermore, it indicates that a reliance on published cases to study bargaining on panels may suffer from serious selection bias, as publications are not a random subset of cases (see e.g., Priest & Klein, 1984). Finally, the implications of this study are broader than the decision whether to publish a legal decision. It also speaks to a broad array of institutional situations where decision-makers can bargain over whether a generally applicable rule is announced, such as the decision to grant certiorari (see e.g., Black & Owens, 2009; Perry, 1991) and bureaucratic rule-making (see e.g., Sunstein & Vermuele, 2014). Thus, there are implications that reach to many aspects of decision-making, particularly in institutions constituted primarily by unelected officials.

²⁷Beim, Hirsch, and Kastellec (2014) assume that lower courts publish all decisions, whereas we did the focus on the publication decision but treat supervising courts exogenous to the model.

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	No Dissent	Dissent	Total
Unpublished	2,090 (96.2%)	82 (3.8%)	2,172 (57.7%)
Published	1,403 (88.2%)	188 (11.8%)	1,591 (42.3%)
Total	3,493	270	3,763

Table 1: Summary of Publication and Dissent in U.S. Courts of Appeals search and seizure cases from 2005 to 2008 (excluding the Second Circuit and D.C. Circuit).

	Supreme Court		En Banc	
	Coef.	(S.E.)	Coef.	(S.E.)
Publication				
$ M - s $	0.245	(0.175)	-0.594*	(0.160)
Caseload	-0.001*	(0.000)	-0.001*	(0.000)
Criminal	0.301*	(0.060)	0.370*	(0.058)
District Court Affirmed	-0.710*	(0.074)	-0.761*	(0.071)
GOP Circuit	0.218*	(0.073)	0.256*	(0.074)
Amicus Curiae	1.345*	(0.378)	1.061*	(0.418)
Other Circuits Cited	0.274*	(0.015)	0.257*	(0.015)
Intercept	0.165	(0.122)	0.329*	(0.131)
Dissent				
$ M - s $	-0.794*	(0.256)	0.169	(0.213)
Caseload	-0.001*	(0.000)	-0.001*	(0.000)
Criminal	-0.093	(0.085)	-0.147	(0.081)
District Court Affirmed	-0.385*	(0.092)	-0.439*	(0.087)
GOP Circuit	-0.320*	(0.095)	-0.367*	(0.094)
Amicus Curiae	0.304	(0.286)	0.280	(0.310)
Other Circuits Cited	0.127*	(0.015)	0.127*	(0.015)
Intercept	-0.411*	(0.189)	-0.698*	(0.187)
ρ	0.415*	(0.120)	0.307*	(0.113)
N	2,507		2,652	

* indicates significance at $p < 0.05$

Table 2: Bivariate probit models of the probability that a panel opinion is published and/or has a dissenting opinion for cases in which the ideal point of the supervising court is located between the panel majority and panel minority or within 0.05 of either.

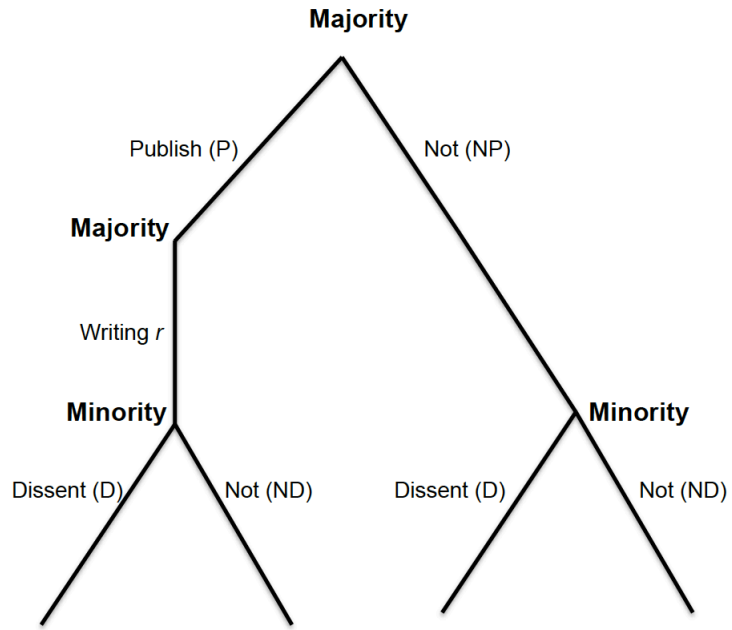


Figure 1: Sequence of the Game

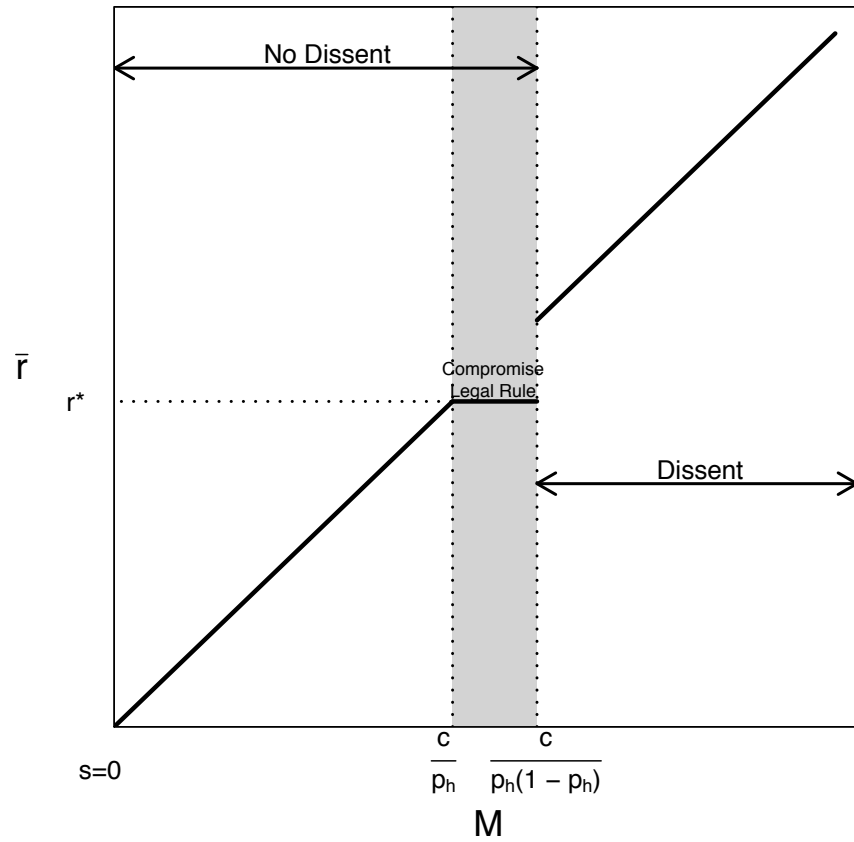


Figure 2: Panel majority's decision (conditional on publication) between M and r^* . The shaded region is the zone of compromise in which the majority sets the new legal rule at r^* rather than its own ideal point.

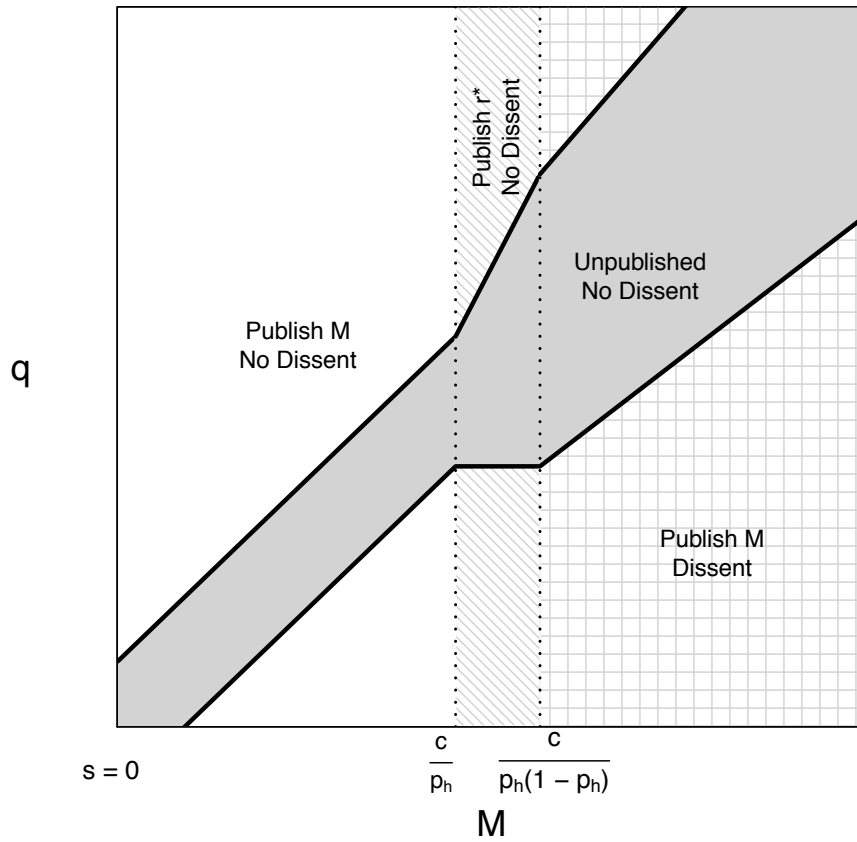


Figure 3: Panel majority's decision to publish an opinion or not. The solid gray region represents the circumstances under which the majority will decide to not publish the opinion. The cross-hatched region depicts the compromise zone where the majority will publish and the minority will refrain from dissenting in exchange for influence over the location of the legal rule.

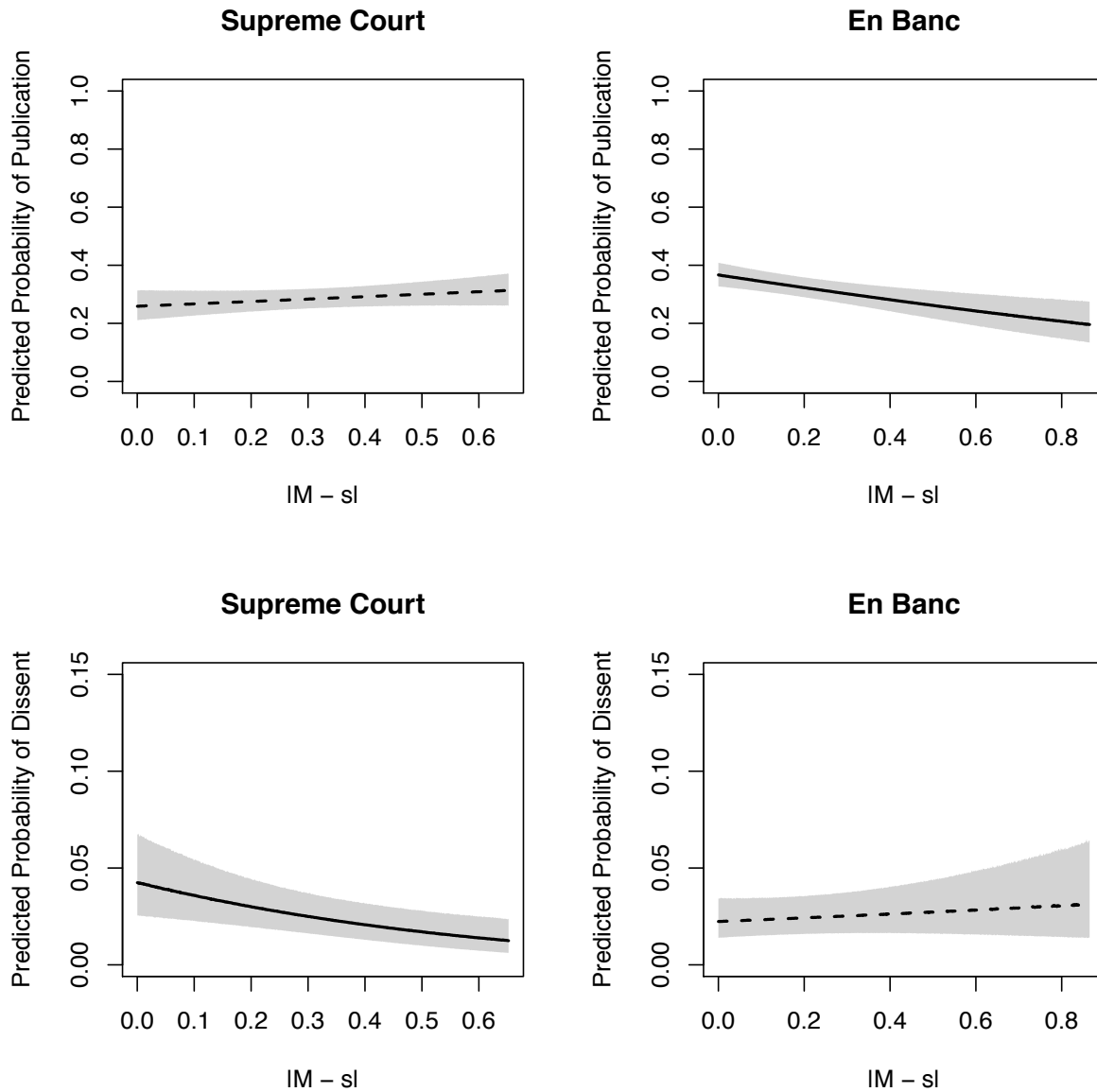


Figure 4: This graph provides the predicted probability of publication (top panels) and dissent (bottom panels) at different values of $|M - s|$ from the minimum to the maximum observed in the data for both Supreme Court and en banc review. Other variables are held at their median. The shaded regions depict the 95% confidence interval around the predicted probabilities. Solid lines denote patterns that support our hypothesis while dashed lines indicate an absence of the relevant hypothesized relationship.

Appendix A: Review Rates

1.1 Publication

In our data, which contains 2,172 unpublished cases, no unpublished cases were reviewed en banc. Of the 1,591 published cases, fourteen or 0.8% were reviewed en banc. Similarly, the Supreme Court reviewed only 0.3% of unpublished cases compared with 1.8% of published cases.

1.2 Dissent

Of the 3,493 cases without dissents, only 0.2% were reviewed en banc. On the other hand, the courts of appeals reviewed 2.6% of the 270 cases with dissents en banc. The Supreme Court reviewed 0.9% of unanimous cases compared with 2.2% of cases with dissents.

Appendix B: Derivations

Derivation of Lemma 1. The minority writes a dissenting opinion, given the majority's decision to publish an opinion \bar{r} , if the expected utility from dissenting outweighs that from not dissenting.

If $m < s < M$, we have $m < \bar{r} < M$ as well by Observation 1. Thus,

$$\begin{aligned}
 U_m(D|P, \bar{r}) &> U_m(ND|P, \bar{r}) \\
 p_H(-|m-s|) + (1-p_H)(-|m-\bar{r}|) - c &> -|m-\bar{r}| \\
 p_H|m-s| + c &< p_H|m-\bar{r}| \\
 |m-s| + \frac{c}{p_H} &< |m-\bar{r}| \\
 \bar{r} &> s + \frac{c}{p_H}.
 \end{aligned}$$

Accordingly, the minority writes a dissenting opinion if the majority's opinion is $\bar{r} > r^* \equiv s + \frac{c}{p_H}$.

If $M < s < m$, the same procedure yields that the minority writes a dissenting opinion if $\bar{r} < s - \frac{c}{p_H}$.

Derivation of Lemma 2. Suppose that the majority publishes an opinion. As discussed in the main text, the majority decides between publishing M or r^* . Again, recall that $m < s < M$.

(i) The majority publishes M if $M \leq r^*$ and the minority does not dissent. That is,

$$M - s \leq \frac{c}{p_H}.$$

If $M < s < m$, the same procedure yields that the majority publishes M without the minority's dissent if $M \geq s - \frac{c}{p_H}$. Combining these two, we know that the majority publishes M without the minority's dissent if $|M - s| \leq \frac{c}{p_H}$.

(ii) The majority publishes M if the utility of publishing M with the minority's dissent is larger

than the utility of publishing r^* without the minority's dissent. That is,

$$\begin{aligned}
U_M(M|P,D) &\geq U_M(r^*|P,ND) \\
p_H(-|M-s|) + (1-p_H)(-|M-M|) - c &\geq (-|M-r^*|) - c \\
p_H(M-s) &\leq M-s - \frac{c}{p_H} \\
M-s &\geq \frac{c}{p_H(1-p_H)}.
\end{aligned}$$

If $M < s < m$, the same procedure yields $s-M \geq \frac{c}{p_H(1-p_H)}$. Combining these two, we know that the majority publishes M despite the minority's dissent if $|M-s| \geq \frac{c}{p_H(1-p_H)}$.

(iii) The majority publishes r^* if not (i) or (ii). That is $\frac{c}{p_H} < |M-s| < \frac{c}{p_H(1-p_H)}$.

Derivation of Proposition 1. Lemma 1 and 2 give the conditions under which the majority prefers M over r^* and the minority writes a dissenting opinion. Given that, the majority compares the utility from publishing M or r^* and not publishing.

(i) If $|M-s| \leq \frac{c}{p_H}$, the majority prefers publishing M without dissent over not publishing if,

$$\begin{aligned}
U_M(P,M|ND) &\geq U_M(NP|ND) \\
-|M-M| - c &\geq -|M-q| \\
|M-q| &\geq c.
\end{aligned}$$

(ii) If $|M-s| \geq \frac{c}{p_H(1-p_H)}$, the majority prefers publishing M with dissent over not publishing if,

$$\begin{aligned}
U_M(P,M|D) &\geq U_M(NP|ND) \\
p_H(-|M-s|) + (1-p_H)(-|M-M|) - c &\geq -|M-q| \\
|M-q| &\geq p_H|M-s| + c.
\end{aligned}$$

(iii) If $\frac{c}{p_H} < |M-s| < \frac{c}{p_H(1-p_H)}$, the majority prefers publishing a compromised legal rule r^*

without dissent over not publishing if,

$$\begin{aligned}U_M(P, r^* | ND) &\geq U_M(NP | ND) \\ -|M - r^*| - c &\geq -|M - q| \\ |M - q| &\geq |M - s - \frac{c}{p_H}| + c \\ |M - q| &\geq |M - s| - \frac{c(1 - p_H)}{p_H}.\end{aligned}$$

(iv) The majority does not publish an opinion in all other cases.

Appendix C: Ideology Measure

The difficulties inherent in identifying one member of every panel as the minority judge dictate that any method employed will have some shortcomings. While our method is inevitably not perfect, there is reason to believe it is one of the more useful of the techniques available. One possible metric for evaluating the performance of our minority judge classifier is how well it does predicting the identity of the dissenting judge in those handful of cases in which there is a dissent. Randomly identifying a panel judge as the minority would be expected to correctly identify approximately one-third of dissenters. Our method identifies 44.4% of dissenters as the panel minority. While this may seem a bit underwhelming at first blush, other possible techniques do not perform any better. Simply identifying the panel judge located farthest from the panel median only accurately identifies 40.4% of dissenters. The Beim, et. al. (2014) method of classifying the most extreme panel member in the direction of the supervising court's median correctly identifies the dissenter in 44.1% of cases when using the Supreme Court as the supervising court and only 41.9% of cases when using the full circuit as the supervising court. Using political party of the appointing president to identify the minority on a panel results in a higher rate of correctly identifying the dissenter (48.5%) but at the cost of limiting analysis to cases in which both Democrats and Republican judges sit on a panel. This would force us to abandon approximately 30% of the available data. Finally, we note that within the subset of cases analyzed ($(M - .05) < s < (m + .05)$ or $(m - .05) < s < (M + .05)$), our classification of the minority judge accurately identifies the dissenter 48.9% of the time in the Supreme Court model and 46.8% of the time in the en banc model.

Appendix D: Dissents by Minority Judges Only

	Supreme Court		En Banc	
	Coef.	(S.E.)	Coef.	(S.E.)
Publication				
$ M - s $	0.240	(0.175)	-0.593*	(0.160)
Caseload	-0.001*	(0.000)	-0.001*	(0.000)
Criminal	0.303*	(0.060)	0.371*	(0.058)
District Court Affirmed	-0.714*	(0.074)	-0.763*	(0.071)
GOP Circuit	0.217*	(0.073)	0.254*	(0.074)
Amicus Curiae	1.374*	(0.383)	1.045*	(0.417)
Other Circuits Cited	0.274*	(0.015)	0.258*	(0.015)
Intercept	0.168*	(0.122)	0.330*	(0.131)
Dissent				
$ M - s $	-0.633*	(0.320)	0.404	(0.259)
Caseload	-0.001*	(0.000)	-0.001*	(0.000)
Criminal	-0.033	(0.107)	-0.009	(0.104)
District Court Affirmed	0.103	(0.128)	-0.060	(0.118)
GOP Circuit	-0.481*	(0.114)	-0.459*	(0.115)
Amicus Curiae	0.009	(0.384)	0.239	(0.364)
Other Circuits Cited	0.124*	(0.019)	0.119*	(0.018)
Intercept	-1.125*	(0.249)	-1.397*	(0.249)
ρ	0.457*	(0.152)	0.302*	(0.145)
N	2,507		2,652	

* indicates significance at $p < 0.05$

Table 1: Bivariate probit models of the probability that a panel opinion is published and/or has a dissenting opinion written by the minority judge for cases in which the ideal point of the supervising court is located between the panel majority and panel minority or within 0.05 of either.