Publication Rules and Judicial Candor

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Abstract

While unrestricted publication of judicial decisions and other actions can increase information for future litigants, and more generally, the public, we analyze two models that account for strategic changes to candor for judges who know that their identities can be associated with their actions. The basic model shows that unrestricted publication increases information relative to restricted publication when the level of conflict between parties is low, the information advantage obtained from candid action is low, variation in judicial bias is high, and the share of confident judges is high. Otherwise, unrestricted publication can decrease information when judges reduce candor in order to avoid perception of bias. We further demonstrate that unrestricted publication can lead judges to forgo decisions and actions that are unbiased, but difficult to explain, for ones that are biased.

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JEL Codes: K10, K40, K41

1 Introduction

In March of 2019, the French legislature passed a law that banned the use of judicial names in legal prediction systems that rely on machine learning.[1] Algorithm developers in France can no longer include the name of the judge or any identifying feature of the judge in predictive systems designed to

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[1] See Programming Law for the Judicial System, L. n° 2019-222, 23 (March 2019).

ascertain the outcome of a judicial decision and offenders face penalties that include up to five years imprisonment. In the United States, the French law has widely been seen as a setback. Detractors perceive the ban as an attack on transparency and liberal values (McGinnis 2019). Others have noted that the ban will chill research and progress in legal analytics (Livermore and Rockmore 2019).

While an outright data ban on its face may appear new, and perhaps peculiar to European privacy norms, publication restrictions of judicial proceedings have rich pedigree in the United States though they take other forms. For instance, it is prohibited to telecast oral arguments of the Supreme Court and various Circuit Courts.[2] Occasionally, Supreme Court cases are decided by eight justices instead of the usual nine. On those occasions, if the Court splits 4-4, it issues a decision *per curiam* and the names and votes of the eight justices are withheld from the public unless a justice issues a concurrence or dissent. In addition, the Supreme Court does not routinely publish or otherwise disclose votes to grant or deny *certiorari*, even after it later announces its disposition of the case.[3] Further, audio of Supreme Court arguments is released weekly, but audio of bench statements is only available at the beginning of the following term; and federal judges, unlike American Presidents, own their working papers and can decide what to release.

There are number of ways to think about these publication restrictions. Prohibitions on the telecasting of trials can protect the privacy and physical safety of participants. Unpublicized *certiorari* votes prior to oral argument

[2] Telecasting of judicial proceedings in lower courts is generally prohibited as well. See *Hollingsworth v. Perry*, 558 U.S. 183 (2010). For a current high-profile exception involving the George Floyd case, see *Minnesota v. Chauvin*, Order Allowing Audio and Video Coverage of Trial, 27-CR-20-12949 *5-8 (Minn. D.C.4th 2020) (permitting telecasting because "the press and general public's First Amendment right of [in person] access to public trials" is impaired due to the COVID-19 pandemic).

[3] Sometimes dissenting justices will publish an opinion explaining why they believe certiorari should have been granted. In those cases, the name of the dissenting justice is revealed. To our knowledge, no empirical study has estimated the number of cases in which names are revealed, but at least one commentator has noted that "no record of the Court's vote is ever published (regardless of whether the case is granted or denied)" for "most cases" (Cordray and Cordray 2004: 402).

might protect advocates from drawing undue inferences about how a particular justice might approach the case. Similarly, prohibiting televised oral arguments or trials might protect members of the public from receiving judicial sound bites from the news media out of context and drawing undue inferences of their own. These benefits are uncertain and have not been formally explored theoretically or empirically. The central argument in favor of broad publication, however, has been forcefully asserted by Richard Posner; namely, that publication increases socially beneficial information (Posner 2017).[4] This is an easy argument to make. When a rule bans or discourages the publication of judicial names, oral arguments, judicial identity in *per curiam* decisions, or otherwise restricts observation of judicial behavior by placing limits on audio recordings and working papers, less information is available to citizens and future litigants. Today's technology can analyze large stocks of data to uncover predictive patterns in judicial writings, voting, questions asked at oral arguments, and even the best-response intonation and gestures of participants during judicial proceedings (Chen, Halberstam, Kumar and Yu 2019). Greater stocks of analyzed data can lead to greater precision in litigation, promote settlement, drive down litigation costs, and reduce the public burden of congested judicial dockets (Miceli 2009).

However, this argument fails to take into account the strategic behavior of judges who know that they are being watched. Closely scrutinized judges, especially those predisposed to timidity, can be less candid. Judges can be less forthcoming and expository in their verdicts, holdings, and pronouncements knowing that their names will be associated with their opinions or that their behavior during trials and oral arguments will be televised.[5] Apart from safety, scrutinized judges reduce candor for a number of reasons. They may prefer to be known as liberal, conservative, or apolitical[6]; they may be afraid that a specific form of partiality, even one

[4] Other legal scholars have made the same argument. See Amir (2019); West (2017; 2012). Watts (2013; 2011).

[5] A similar argument has been raised in the context of televised debates of legislators. See Stiglitz and Caspi (2020); Stasavage (2007).

[6] Consider that a recent text classification study predicts a measure of ideological direction in Circuit Court opinions using only opinion texts (Hausladen, Schubert and Ash

unbeknownst to them, will be exposed; and they may prefer to avoid further questioning and publicity after a decision has been made.

We analyze how publication restrictions impact the level of information available to the public. We present two models that capture the potential for unrestricted publication to alter the strategic behavior of judges. In our models, unrestricted publication can encourage judges to either hide information about legal rules or, if secrecy is not possible, deliberately distort decisions to prevent perception of personal bias.

In Section 2, we study a basic model in which a judge makes a preferred decision on the basis of (i) the facts brought by the parties, (ii) the application of legal rules in the event of conflict between the facts brought forth, and (iii) judicial bias, which describes the judge's personal leaning in the case at hand.[7] The parties know all of the facts, but are uncertain about the application of legal rules and judicial bias. The model consists of two periods. In the first period, parties litigate and judges make decisions. In the second period, the public may learn of the legal rules and judicial bias from the published decisions of the first period.

In the basic model, judicial ability to obscure bias while ruling on an issue (or otherwise responding to a party) is assumed. A judge, for instance, fearful of being exposed as biased in sentencing, can choose to withhold written discussion of her appraisal of defendant characteristics or other facts related to the sentencing decision.[8] Or the judge may hold like a conservative, but provide little reasoning that could fully expose her deeply held conservative beliefs during recorded oral argument and thus continue to present herself as a liberal with less difficulty. Thus, the basic model

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2020). When judicial names are publicized alongside those texts, a judge's ideology can be revealed with relative precision.

[7] Our use of the term bias is broader than the standard legal usage found in 28 U.S.C. § 455, which focuses on impartiality and prejudice toward one of the parties and can lead to judicial disqualification. Bias, in the sense used here, is a judicial preference for an outcome. That preference can be constrained by law, but it can also be satisfied so long as it remains within law's limits.

[8] See, e.g., State v. Loomis, 881 N.W.2d 749 (Wis. 2016) (holding that a judge may rely on an algorithmic risk assessment tool at sentencing so long as the defendant's unique characteristics are adequately considered).

permits the judge to control the amount of information that the public can discern regarding the rationale for the judicial decision.

We compare two scenarios. In the unrestricted publication scenario, the public obtains the signed judicial opinion as well as any additional information that discloses judicial identity and votes. Publication also provides information pertaining to judicial behavior exemplified during the proceeding, which may be available from extra-textual sources such as audio and video. Generally, with unrestricted publication sufficient information is provided to associate judicial identity with judicial action. In the restricted publication scenario, the public obtains the unsigned judicial opinion only.[9]

Our first result describes three situations where unrestricted publication increases information. First, information is increased if the base variation in judicial bias is high relative to the public's ex ante knowledge of legal rules. With unrestricted publication the public learns more about judicial bias, i.e. it can associate judicial identity with decisions and other actions. With restricted publication, judges are more likely to provide candid decisions and the public is more likely to learn about the content of legal rules. However, bias cannot be associated with a specific judge when publication is restricted even though bias may be deduced.[10] Second, publication increases information if the information advantage from clarifying legal rules with candid decisions is low. Here it is explained that unrestricted publication is beneficial, since even a higher share of candid decisions achieved by publication restrictions allows only limited additional learning about legal rules. The same result obtains if a high proportion of judges confidently author candid decisions irrespective of publicity. Finally, publication reduces uncertainty if the level of conflict in a given case is low.

[9] The models employ as a basic unit of analysis a single issue of fact or law, or a discrete judicial behavior. An unsigned opinion is simply a collection of unsigned decisions across a number of issues.

[10] Bias is dissociated from judges exogenously by law or norms that restrict publication. We specifically have in mind publication restrictions that restrict the use of judicial attribution to single-authored opinions, *per curiam* decisions, *certiorari* decisions, and other judicial pronouncements, but the results hold for any rule that dissociates judicial identity from judicial action. We use the term judicial decision throughout the text for exposition though we sometimes refer to judicial action.

In this instance, knowledge of legal rules is less important for parties to ascertain judicial outcomes than is knowledge of judicial bias.

In Section 3, we relax the assumption that the judge is able to successfully obscure bias. This ability may be constrained by law, such as when the Administrative Procedures Act requires an administrative law judge to provide sufficiently reasoned opinion or when an appellate court standard of review implies a sufficient level of judicial explanation to avoid reversal. An ability to obscure may also be constrained if a case presents a straightforward question of law that when decided, reveals bias, such as when the Supreme Court accepts or rejects the interpretation of a new substantive due process right. When allowing for these possibilities in Section 3, the model demonstrates that publication rules can discourage application of weakly communicable judicial intuitions, or hunches, and crowd out unbiased outcomes and learning about legal rules in the process. Judges, aware that they are being scrutinized, avoid the appearance of bias by forgoing application of judicial intuition which would otherwise generate unbiased results.

In Section 4, we suggest several extensions for future work. Section 5 concludes.

2 Basic Model

In our basic model, we assume that judicial verdicts, holdings, dicta, and other actions (hereafter decisions) are determined by four main variables. Following Shavell (2006), we assume that a decision can be expressed as a real number v and that a plaintiff and defendant respectively prefer higher and lower values. The first two elements that determine the decision v are the issue-specific facts as presented by the plaintiff and defendant in their favor. Let the number x summarize the facts as presented by the plaintiff and y as presented by the defendant. Given our assumption of the parties' valuation of the decision, $x > y$.

The third variable is the application of a legal rule to the facts. The legal rule can be understood as a function $L(.)$ which describes how the facts of an issue translate to an unbiased decision, $\tilde{v} = L(x, y)$ where $L(x, y) = \lambda x +$

$(1-\lambda)y$ by assumption. The rule via λ, $0 \leq \lambda \leq 1$, describes how differences in description of facts by adversaries (i.e. $x-y$) affect the decision. However, a fourth relevant variable, a judge's characteristics, for simplicity summarized in the variable j, may lead to bias in the final decision v, $v = \tilde{v} + j$. The judge's bias moves the decision in favor of the plaintiff or defendant if $j > 0$ or $j < 0$. We have:

$$v = \lambda x + (1-\lambda)y + j = y + \lambda(x-y) + j$$

Note that the above description allows a legal issue to be classified according to the level of conflict that it presents described by the difference $x-y$.

We denote with σ_λ the ex-ante level of uncertainty, possessed by uninformed plaintiffs and defendants, of the relevant legal rule. Adversaries' level of uncertainty σ_λ is the standard deviation of their ex-ante perceived distribution function for the parameter λ. Correspondingly, we assume that uninformed plaintiffs' and defendants' uncertainty pertaining to a judge's bias is described by σ_j, the standard deviation in bias over the population of judges. In addition to the difference in bias, judges are of two types: type 1, share q, are confident and do not care about the assessment of their decisions by others; the remaining judges, share $1-q$, are timid and fear that their decisions may generate some cost. Judges' biases and types are uncorrelated.

In a two-period model we compare two scenarios. In each scenario judges make decisions in both periods. Plaintiffs and defendants in period 2 are initially unaware of the legal rule λ or the judge's bias j but may learn of those parameters from the information released in period 1. Both plaintiff and defendant know the levels of x and y for their side of an issue and benefit from a more precise ex-ante expectation of the judicial decision. The two scenarios differ in the level of information that second-period plaintiffs and defendants obtain about the decisions made in period 1. In scenario 1, there is publication with no restrictions. Second-period plaintiffs and defendants receive all information about decisions made in period 1. In our setting, this information includes the judges' names, votes, any behavior captured by audio or video during oral argument or trial, and any

information that associates judicial identity to judicial action generally. In scenario 2, the second-period plaintiffs and defendants obtain the decisions, but without additional identifying information.

The judges' decisions made in period 1 may be delivered with more or less candor. With candor, information pertaining to the legal rule and the judge's bias can be obtained from the decision. Without candor, information regarding the legal rule as well as information about bias can at most be drawn with some probability. For simplicity we present the model under the assumption that without candor neither the legal rule nor judicial bias can be ascertained from the publicized decision with positive probability.[11]

Decisions made without candor consist of incomplete disclosure of the bases for a decision.[12] Candid decisions, by contrast, involve full disclosure. The likelihood of learning a legal rule that governs an issue depends on the number of candid decisions involving that issue which are authored during period 1. Denote by c, $0 \leq c \leq 1$, the share of candid decisions in period 1. The probability of learning is given by $p(c)$, $0 \leq p(c) \leq 1$, $p'(c) \geq 0$. We assume that the additional gain from a greater number of candid decisions is decreasing, i.e., $p''(c) \leq 0$.

2.1 Analysis

In scenario 1 (unrestricted publication), timid judges, aware that all information will be made public, are reluctant to provide candid decisions. Candid decisions are only given by confident judges. Plaintiffs and defendants are informed of confident judges' biases but learn legal rules

[11] Instead, if we assume that the legal rule and judicial bias can be inferred from a decision without candor with probability $\pi > 0$, then, in the following analysis, variable q in the scenario 1 equations with unrestricted publication must be replaced with $q + (1 - q)\pi$. The main results still hold for this modification. Note that an increase in the probability π reduces uncertainty under unrestricted publication while uncertainty under restricted publication remains unchanged. Consequently, unrestricted publication is more likely to reduce uncertainty for higher values of the probability π.

[12] As mentioned in the introduction, the judicial ability to conceal information is bounded by law and norms. We force judges to reach those boundaries in Section 3.

only with probability $p(q)$. In scenario 2 (restricted publication), all judges render candid decisions because articulated bias cannot be attributed to a specific judge. The probability that plaintiffs and defendants learn legal rules is given by $p(1)$, but because decisions are published without identifying information of judges, plaintiffs and defendants remain unaware of judges' bias. In scenario 1, the (expected) level of uncertainty for an issue in period 2, given by the standard deviation of the expected decision for plaintiff and defendant s_1, amounts to

$$s_1 = \big(1 - p(q)\big)\sigma_\lambda(x - y) + (1 - q)\sigma_i$$

With probability $p(q)$ the application of a legal rule can be inferred from the share q of candid decisions. In this case uncertainty can only prevail on the basis of the unknown biases of timid judges. If the application of a legal rule cannot be inferred, then the additional uncertainty is proportional to the level of conflict of the case.

In scenario 2, uncertainty for a second-period decision s_2 is given by

$$s_2 = \big(1 - p(1)\big)\sigma_\lambda(x - y) + \sigma_j.$$

In this scenario, uncertainty surrounding the application of a legal rule is resolved with greater probability than in scenario 1, but uncertainty regarding judges' biases cannot be removed.

The difference in expected uncertainty between scenarios is given by

$$\Delta_s = s_1 - s_2 = \big(p(1) - p(q)\big)\sigma_\lambda(x - y) - q\sigma_j.$$

For $\Delta_s < 0$ scenario 1 provides less uncertainty, otherwise scenario 2 is less uncertain. Scenario 1 is less uncertain if

$$\sigma_j > \frac{p(1) - p(q)}{q}\sigma_\lambda(x - y). \tag{1}$$

From equation (1), we obtain our first result. Publication of the association between judicial identity and judicial decision reduces uncertainty for future litigants if:

1. Variation in judges' biases measured by σ_j is high relative to the ex-ante uncertainty of the application of legal rules measured by σ_λ;
2. The information advantage regarding legal rules obtained by candid decisions is low, that is, $p(1) - p(q)$ is small;
3. The share of confident judges is high; or
4. The level of conflict of the issue is low (i.e., $x - y$ is low).

Item (1) is straightforward. Unrestricted publication reduces uncertainty if adversaries know less about judicial bias relative to their knowledge of the unbiased application of legal rules to a particular set of facts. Even though the share of candid decisions is reduced, which reduces information about unbiased application of rules, unrestricted publication reveals some information about judicial bias, which reduces uncertainty of decisional outcomes by a greater magnitude.

Consider item (2). Publication reduces uncertainty if learning from additional candid decisions occurs infrequently. Recall that under publication restrictions, judges produce a greater share of candid decisions than with unrestricted publication. Learning from a higher number of candid decisions may be infrequent, for instance, if only a small amount of information can be deduced from additional candor since the application of legal rules can already be inferred from the proportion of confident judges' decisions, i.e., $p(q)$ is high. In this situation, additional candid statements of legal rules under publication restrictions are less advantageous than the additional information pertaining to judicial bias acquired from unrestricted publication. In addition, learning from candid decisions occurs infrequently if the application of a legal rule is issue-specific, in which case even a large number of candid decisions will generate incomplete knowledge of the rule, i.e., $p(1)$ is low.

Next, consider item (3). A higher proportion of confident judges necessarily reduces uncertainty with unrestricted publication but has no bearing on uncertainty with restricted publication. Confident judges

provide candid decisions even if their identities are associated with their actions via unrestricted publication. If their share q is high, then most of judicial bias is revealed even with unrestricted publication and learning is minimally impaired (scenario 1).

Finally, consider item (4). If the level of issue conflict is low, then knowledge of legal rules is less important than knowledge of judicial bias. Generally, publication is more likely to reduce uncertainty if the average representations of facts x and y are characterized by lower levels of conflict.

2.2. Discussion

Several broad observations can be drawn from these results. Contrary to Posner (2017), rules or norms that require unrestricted publication do not unequivocally increase information. If all judges were perhaps as confident as Judge Posner, then unrestricted publication would have no impact on the contents of written judicial opinions, behaviors exhibited during judicial proceedings, *per curiam* and *certiorari* votes, and other judicial actions. Under restricted publication, however, the timid judge acts and decides with candor. If the proportion of timid judges is high, then publication restrictions increase the level of information pertaining to the application of legal rules available to future litigants at the cost of reduced information pertaining to judicial bias.

In fora where knowledge of application of legal rules reduces uncertainty more than knowledge of judicial bias, publication restrictions can be useful. For instance, Article 3 courts are often tasked with pronouncing conclusive statements of legal rules. In contrast, administrative courts may more frequently apply settled law. In terms of our model, litigants' knowledge of law in administrative courts is high relative to non-administrative courts. If the proportions of confident and timid judges are identical across court types, and differences in conflict are evenly distributed, then unrestricted publication is more effective for reducing the uncertainty of administrative court outcomes relative to non-administrative court outcomes.

Similarly, one may presume that appellate and high court decisions generally provide greater information pertaining to the application of legal

rules than do trial courts. It follows from the results that publication restrictions are more costly to future litigants when applied to trial courts under the same conditions given immediately above. On the other hand, if appellate and high courts are populated by a large share of confident judges, then restricted publication will fail to encourage candid opinions since candid opinions are forthcoming regardless.

Current U.S. Supreme Court rules allow justices to remain anonymous when issuing *per curiam* and *certioarari* decisions. Justices, however, may choose to issue a concurrence or dissent, which reveals some information about legal rules as well as associate their identity with any statement that reveals bias. As such, publication is permitted, but governed with a default rule of restriction from which justices may opt out. The results suggest the rule's rationale: Supreme Court determinations of legal rules greatly reduce uncertainty, which implies that candor is valuable to the public. The value of candor in this setting, *ceteris paribus*, suggests restricted publication. At the same time, higher level courts are more likely to be populated by confident judges, which suggests that restricted publication is not necessary to induce candor. Restricted publication as a default rule combined with a publication option for confident judges may therefore encourage the revelation of the highest level of information for the public.

3. Unobscurable Bias

We now relax the assumption that a judge is able to obscure bias. Legal rules such as the Administrative Procedures Act (APA) may suppress that ability by requiring sufficiently reasoned rulings on the issues of a dispute. Article 3 judges in federal district courts may face reversal if their decisions are conclusory and fail to satisfy various standards of review. Adversaries may petition for rulings that leave the judge no room for making a decision without revealing bias, such as when litigants petition the Supreme Court for a new interpretation of a substantive due process right. In each of these scenarios, judges are unable to perfectly obscure their biases when making decisions, and with unrestricted publication, parties will learn something about judges' bias.

What is less apparent, however, is that unrestricted publication can suppress learning with respect to legal rules also in this setting. Judges that rely on intuitions or "hunches" may be able to offer explanations that can withstand appeal or satisfy the APA, but may nonetheless be unable to communicate a lack of bias to the public. As a result, they may feel compelled to provide thorough and cogent decisions and forgo application of weakly communicable intuitions or judicial hunches that may in fact be unbiased. In Shavell (2007), if a lower-court judge deviates from a "correct" decision, the higher court knows that the judge is biased. In that model, the judge can only make small deviations from the unbiased decision in equilibrium (otherwise the parties initiate appeal). Here, a biased decision can withstand appellate review, but the judge can select it in order to avoid public perception of bias.

In argument against publication restrictions, Posner (2017) asserts that judges rarely grandstand and exhibit crowd-pleasing behavior as a source of utility. Nonetheless, non-grandstanding judges may wish to avoid any disutility that may accrue from erroneous public perceptions of bias. In response, they may suppress the use of weakly communicable hunches that generate correct decisions.[13]

It is well established that judges rely on intuition or hunches to ascertain facts and apply law and that they are often unable to articulate underlying reasons for decisions (Hutcheson 1929; Cardozo 1947; Brennan 1988; Kennedy 2008). Generally, models of intuition-override in law normatively elevate analytical and deliberate thinking over intuition because the latter generates undesirable results such as bias against a protected class (Englich, Mussweiler, and Strack 2006; Rachlinski, Johnson, Wistrich, and Guthrie 2009; Rachlinski, Wistrich, and Guthrie 2013).

While there is substantial empirical evidence that the use of judicial intuition can lead to dissimilar application of rules when similar application is warranted, a growing body of scholarship seeks to carve out instances where expert lay intuition can be helpful and socially desirable (see, e.g. Kahneman and Klein 2009; Kahneman and Fredrick 2005). Berger (2013) and Berger and Stanchi (2017) have applied this research to judging.

[13] By "correct" we mean a decision that is uninfluenced by bias, i.e.: $v = \lambda x + (1 - \lambda)y$.

Consistent with earlier studies of judicial intuition-override, they conclude that the use of hunches for making predictions based upon perceptions (without further analytical reflection) should be discouraged. These tasks include assessing recidivism, witness credibility, and the probability that one thing causes another. In contrast, however, they assert that the use of judicial intuition, even if weakly communicable, should be encouraged for problem-solving tasks such as choosing among alternative applications of legal rules and identifying approaches to new or previously unrecognized or unaddressed problems. In tasks involving creativity and problem-solving, they argue, intuition can generate favorable results. Thus, the judge may know what the "correct" decision is, but cannot clearly convey why in a decision. With a publication rule in place, future litigants may attempt to infer bias from those decisions. If so, their inferences will be inaccurate and judges may in response divert their rulings to avoid the impression of bias.

3.1 The Model

We use the following model for our analysis. As presented in Section 2, the summarized issue-specific facts brought by plaintiff and defendant remain x and y, respectively, where $x > y$. However, in contrast to above, λ is now issue-specific and given by $\lambda \in \{0,1\}$ so that either x or y is the unbiased "correct" decision. Also, the judicial decision can only be x or y. Finally, to illustrate results in a concise way we describe bias with the parameter $\mu \in [0,1]$ indicating how strongly a judge favors the position x.[14] That is, bias is in the direction of x, but the extent of the bias varies among judges. The judges' bias parameter μ is distributed on the interval $[0,1]$ according to a uniform distribution. The preferred decision is given by a weighted average on the position of the plaintiff and the unbiased decision[15]

$$\hat{v} = \mu x + (1-\mu)(\lambda x + (1-\lambda)y).$$

[14] Plaintiff's preferred outcome x is chosen arbitrarily. The results hold if μ describes how strongly the judge favors y.

[15] While in Section 2 a judge's preferred decision coincides with the actual decision v, the preferred ($\hat{v}$) and the actual decision (v) can differ in the model presented here.

With probability p, $\lambda = 0$ and the unbiased decision is y; with probability $1 - p$, $\lambda = 1$ and the unbiased decision is x. Judges observe λ but are not able to communicate λ in a verifiable way. An individual judge's disutility d from a decision is given by the difference between the decision and the judge's preferred decision plus any perceived bias by the public (given the decision v) where the latter is weighted by r,

$$d = |v - \hat{v}| + rE[\mu|v]$$

where $E[.]$ is the expectation operator. Thus, judges are unable to completely obfuscate their bias, since the decision itself may serve as its signal. In this case, unrestricted versus restricted publication may have an effect on the decisions of judges who minimize their disutilities. In the case of indifference we assume that judges always select the unbiased verdict.

Next, we describe the unique equilibrium for restricted publication before deriving possible equilibria for unrestricted publication. A comparison of equilibria establishes that depending on the equilibrium for unrestricted publication, publication can lead to more or less unbiased decisions.

3. 2 Analysis

3.2.1 Restricted Publication

Since a decision cannot be associated with an individual judge no bias can be inferred and $E[\mu|v] = E[\mu] = 1/2$ for all possible decisions. Judges therefore simply minimize the absolute difference between the selected and preferred decision $|v - \hat{v}|$. If $\lambda = 0$ such that the unbiased decision is y, a judge's preferred decision is $\hat{v} = y + \mu(x - y)$ and the judge deviates to $v = x$ only if her personal bias is sufficiently strong, that is, if

$$|x - \hat{v}| < |y - \hat{v}|$$
$$\rightarrow (1 - \mu)(x - y) < \mu(x - y) \rightarrow \mu > \frac{1}{2} = \mu^{1,\lambda=0}$$

Consequently, for $\lambda = 0$ an unbiased decision occurs with probability 1/2. If $\lambda = 1$ such that the "unbiased" decision is x, all judges select $v = x$ which coincides with their preferred decision.

As a result, total unbiased decisions are made with probability $\frac{p}{2} + (1 - p) = 1 - \frac{p}{2}$.

3.2.2 Unrestricted Publication

With unrestricted publication, the public can use a judge's decision to update beliefs about the judge's bias. Judges take this into account. Now, if $\lambda = 0$, a judge deviates to $v = x$ if

$$(1 - \mu)(x - y) + rE[\mu|v = x] < \mu(x - y) + rE[\mu|v = y]$$

$$\rightarrow \mu > \frac{1}{2} + \frac{r(E[\mu|v = x] - E[\mu|v = y])}{2(x - y)} = \mu^{2,\lambda=0}$$

which indicates that when $E[\mu|v = x] \geq E[\mu|v = y]$, i.e. a decision x is associated with a (weakly) higher expected level of bias, the critical value is at least as high than in the case under restricted publication. Consequently, unbiased decisions are furthered for $\lambda = 0$ in this scenario. If $\lambda = 1$, $\hat{v} = x$and a judge decides for x if

$$rE[\mu|v = x] \leq (x - y) + rE[\mu|v = y]$$

which is independent of a judge's true bias μ. Thus, either all or none of the judges decide for x if $\lambda = 1$. The fact that deciding for x may now be associated with costs, in particular because of perceived bias on the part of the public, implies that judges may now deviate from an unbiased decision also for $\lambda = 1$, which did not occur under restricted publication.

3.2.3 Equilibria with Unrestricted Publication

Depending on parameter values, two types of equilibria can emerge. In one equilibrium, that always exists, rulings by judges are similar to rulings

under restricted publication in that judges always rule x for $\lambda = 1$ and only less biased judges decide for y if $\lambda = 0$. We refer to this equilibrium as *Mostly Pro-Plaintiff Judges*. In this equilibrium, unrestricted publication leads to a greater share of unbiased decisions. However, a second type of equilibrium exists as long as the level of conflict is not too high or if judges care sufficiently about perceived bias. In this case an equilibrium exists where all judges always decide for y independent of the observed value of λ. We refer to this equilibrium as *Defendants' Judges*. In this equilibrium the threat of being perceived as biased leads judges to pool on a single ruling which might reduce the actual number of unbiased decisions when compared to the restricted publication scenario.[16] In contrast, also with unrestricted publication, an equilibrium with only unbiased decisions cannot be attained, and no equilibrium with a greater share of pro-plaintiff decisions than under restricted publication is feasible.[17]

Mostly Pro-Plaintiff Judges

Consider first a possible equilibrium similar to the one under restricted publication: judges always choose x if $\lambda = 1$; and if $\lambda = 0$ they deviate from the unbiased verdict y if their level of bias surpasses a threshold (i.e., if $\mu > \bar{\mu}$) consistent with equilibrium behavior (i.e., $\bar{\mu} = \mu^{2,\lambda=0}$). In this case, with *Bayesian* updating, expected bias for the two possible decisions is given by

$$E[\mu|v = x] = \frac{p\frac{1}{2} + (1-p)(1-\bar{\mu})\frac{\bar{\mu}+1}{2}}{p + (1-p)(1-\bar{\mu})} = \frac{1}{2} + \frac{(1-p)(1-\bar{\mu})\bar{\mu}}{2[p + (1-p)(1-\bar{\mu})]}$$

for a pro-plaintiff ruling ($v = x$) and

$$E[\mu|v = y] = \frac{\bar{\mu}}{2}$$

[16] If this second equilibrium exists, a variant of it would exist if we allowed an indifferent judge to decide for either side. In this equilibrium, all judges decide for y if $\lambda = 0$ while some judges decide for either x or y if $\lambda = 1$. We refer to this equilibrium as *Mostly Pro-Defendant Judges* and demonstrate it in the Appendix.

[17] See the discussion, infra, "Unbiased Judges" and "Plaintiffs' Judges."

for a pro-defendant ruling ($v = y$). A pro-plaintiff ruling (share $p + (1 - p)(1 - \bar{\mu})$ of total decisions) may simply be responsive to the facts (share p of total decisions, average bias 1/2) or the result of a biased judge when the facts support y (share $(1 - p)(1 - \bar{\mu})$ of total decisions, average bias $(\bar{\mu} + 1)/2$). A pro-defendant ruling must come from facts in favor of the defendant and a not to biased judge (average bias $\bar{\mu}/2$). The difference in expected bias is given by

$$\begin{aligned} \Delta \mathrm{E}\mu = E[\mu|v = x] - E[\mu|v = y] &= \frac{1}{2} - \frac{\bar{\mu}}{2}\left[1 - \frac{(1-p)(1-\bar{\mu})}{p + (1-p)(1-\bar{\mu})}\right] \\ &= \frac{1}{2} - \frac{\bar{\mu}}{2}\,\frac{p}{p + (1-p)(1-\bar{\mu})} \end{aligned} \tag{2}$$

We have:

$$\Delta E\mu_{\bar{\mu}\to 0} = \frac{1}{2}; \Delta E\mu_{\bar{\mu}\to 1} = 0; \frac{\partial \Delta E\mu}{\partial \bar{\mu}} < 0.$$

Both perceived bias after a pro-plaintiff or pro-defendant ruling increase with a higher threshold value $\bar{\mu}$. However, the effect on expected bias for decisions y is stronger such that the increase in perceived bias from a decision for x is decreasing in $\bar{\mu}$ with a maximum of ½ for $\bar{\mu}$ approaching zero since in this case only the most unbiased judges would decide for y (implying $E[\mu|v = x] \to \frac{1}{2}, E[\mu|v = y] \to 0$). For $\bar{\mu}$ approaching one, only unbiased decisions are made such that a decision would allow for no inference of judicial bias (in this case $E[\mu|v = x] = E[\mu|v = y] = \frac{1}{2}$).

The equilibrium requires that a judge with $\mu > \bar{\mu}$ favors decision x (and with $\mu \leq \bar{\mu}$ favors decision y) after observing $\lambda = 0$, i.e. for $\mu = \bar{\mu}$ we must have

$$(1 - \bar{\mu})(x - y) + rE[\mu|v = x] = \bar{\mu}(x - y) + rE[\mu|v = y]$$

which results in

$$r\Delta E\mu = (2\bar{\mu} - 1)(x - y)$$

(3)

Combining equations (2) and (3), the equilibrium value $\bar{\mu} = \mu^{2,\lambda=0}$ is characterized by

$$\frac{1}{2} - \frac{\bar{\mu}}{2}\frac{p}{p + (1-p)(1-\bar{\mu})} = \frac{(2\bar{\mu}-1)(x-y)}{r} \tag{4}$$

Since the left (right) hand of (4) is decreasing (increasing) in $\bar{\mu}$ and for $\bar{\mu} = \frac{1}{2}$, we have $\frac{1}{2} - \frac{p}{2(p+1)} > 0$, and for $\bar{\mu} = 1$ we have $0 < \frac{(x-y)}{r}$, the equilibrium value of $\bar{\mu}$ is some value between ½ and 1.

The alleged equilibrium property that all judges decide for x if they observe $\lambda = 1$ requires:

$$rE[\mu|v = x] < (x - y) + rE[\mu|v = y]$$

$$r\Delta E\mu < (x - y)$$

which from the above translate into

$$\bar{\mu} < 1$$

which is true. Accordingly, this equilibrium always exists, and in comparison to the equilibrium under restricted publication, it is characterized by a higher share of correct decisions. Observing $\lambda = 0$, judges for whom $\mu \in (\frac{1}{2}, \bar{\mu})$ would decide for x under restricted publication, but rule for the unbiased verdict y with unrestricted publication.

Defendants' Judges

Consider second, that judges may always choose y. In this case, reasonable expectations about judges' bias parameter are given by

$$E[\mu|v = x] = 1$$

and

$$E[\mu|v = y] = \frac{1}{2}$$

where the decision x is actually off-equilibrium. We assume that should x be observed, the public will associate it with the most biased judge and therefore expected bias will be equal to one. For the equilibrium to exist, we must have that for $\lambda = 1$, judges nevertheless choose the decision y although they all share the same preferred (and unbiased) decision x. This requires

$$r > (x - y) + r\frac{1}{2} \rightarrow \frac{r}{2} > (x - y).$$

The costs from an increase in perceived bias from a decision x given by $r/2$ must be greater than the disutility from the deviation from the preferred ruling $(x - y)$. This condition also guarantees that indeed no judge will deviate from the ruling y should $\lambda = 0$ be observed.[18]

Consequently, if $r/2 > (x - y)$, then this equilibrium exists. The implication is that if judges care enough about how the public evaluates their bias, then they will always select y—irrespective of their own evaluation of the case—so long as the level of conflict is not too high. Every judge hides her bias. However, if the level of conflict reaches a threshold, the equilibrium breaks down since at least the most biased judge will decide for x. Whereas in this equilibrium for $\lambda = 0$ all decisions are unbiased, for $\lambda = 1$ no unbiased decisions will be made. Accordingly, if the share of issues with $\lambda = 1$ is sufficiently large fewer unbiased decisions are rendered with unrestricted publication than restricted publication if the *Defendants' Judges* equilibrium materializes. More precisely, fewer correct decisions are rendered with unrestricted publication in this setting if $p + \frac{1-p}{2} > 1 - p$, that is, if $p > 1/3$.[19]

[18] For the most biased judge the condition is exactly the same, i.e., $r/2 > (x - y)$. Less biased judges are even more inclined to decide for y.

[19] As noted above, we describe in the Appendix a related equilibrium (*Mostly Pro-Defendant Judges*) that could emerge if indifferent judges do not unambiguously select unbiased decisions.

So far, we have established two possible equilibria. In what follows, we briefly show that, in contrast to the analysis above, equilibria with only plaintiff-friendly decisions or only unbiased decisions cannot exist.

Plaintiffs' Judges

Consider that judges may always choose x. Mirroring the description above for *Defendants' Judges*, the expected judges' bias is given by

$$E[\mu|v = x] = \frac{1}{2}; E[\mu|v = y] = 0$$

where the decision $v = y$ is off-equilibrium. We assume that should y be observed, that decision will be associated with the least biased judge. For the equilibrium to exist, with $\lambda = 0$ we must have for all μ

$$(1 - \mu)(x - y) + \frac{r}{2} < \mu(x - y)$$

which is violated for $\mu = 0$, for instance. A decision for x would generate disutility for this judge because of a larger deviation from her preferred decision and an increase in perceived bias. Accordingly, that judges always choose x does not constitute an equilibrium.

Unbiased Judges

Consider next, that judges may always choose x if $\lambda = 1$ and always choose y if $\lambda = 0$, that is, judges always make unbiased decisions. Given that with this equilibrium the decision itself does not provide information about bias, expected bias is independent of the ruling

$$E[\mu|v = x] = E[\mu|v = y] = \frac{1}{2}$$

To constitute an equilibrium, we must have that even the most biased judge ($\mu = 1$) chooses the decision $v = y$ for $\lambda = 0$. This requires

$$(x - y) + r\frac{1}{2} < r\frac{1}{2}$$

which is a contradiction. Because at least the most biased judges will always decide for x since it is costless for them in terms of perceived bias, this equilibrium does not exist.

3.3 Discussion

Under the assumption that judges cannot obscure bias, unrestricted publication rules and norms that associate judicial identity with judicial action can lead to a greater share of either biased and unbiased decisions. Two types of equilibrium can exist. In the *Mostly Plaintiffs' Judges* equilibrium, which always exists, unrestricted publication leads to more unbiased and "correct" decisions, i.e., decisions that reveal information pertaining to the application of legal rules. In the *Defendants' Judges* equilibrium—which exists as long as the weight that judges place on disutility in the perceived bias of the public is large enough in comparison to the level of conflict—fewer correct decisions are made if correct decisions favor the plaintiff in at least a third of cases.

The implication is that unrestricted publication does not always lead to more unbiased, "correct" decisions which allow more precise learning about the applicable law. With publication rules in place, such as signed *certiorari* decisions, a judge may feel compelled to explain intuitions and hunches, and future litigants may infer bias from those signed decisions. When judges are concerned with inferred bias, that is, when r is high relative to the level of conflict between the parties, judges may change their rulings to avoid the impression of bias. Thus, the model in Section 3 formalizes the judicial concern with undue inferences. Future litigants may draw undue inferences not only from signed *certiorari* and *per curiam* votes, but also from signed opinions that may involve substantial, but unfruitful, efforts in justifying a decision.

The same reasoning can apply to other forms of publication rules, such as televised hearings and oral arguments. Posner (2017: 189-90) relies on anecdotal evidence to assert that there are no adverse consequences of televised hearings. Our model demonstrates that televised judges may select biased, "incorrect" decisions, i.e., decisions that provide no information pertaining to the application of legal rules, even if judges have no preference for grandstanding. This is because judges, fearful that litigants may perceive bias from weakly articulated decisions, forgo the selection of the unbiased, yet "correct," judicial hunch.

4. Extensions for Future Work

We see several extensions for future work. The first involves social preferences for judicial activism. If scrutinized by television cameras or algorithms, judges may produce a greater number of decisions that deviate from statutory texts and other institutional and social restraints. Under publication rules, these judges may prefer meting broadly consensual justice to maintaining separation of powers. But the opposite may be true, especially in countries like France, where judicial surveillance may more likely encourage judicial conformity to statutory decrees.[20] Thus, a publication rule's relationship to welfare may be dependent upon prevailing attitudes toward activism, and in particular, whether, for a given jurisdiction, the benefits of formalism outweigh the benefits of activism.

Another extension concerns the preferences of lawyers. Lawyers specialize in advising clients on the probability of victory. Under this assumption, they will support publication restrictions if they believe that increased data from publication will lead to reduced uncertainty of litigation outcomes. Because publication reduces uncertainty when conflict is low, lawyers will be encouraged to describe the disputes of their clients as highly conflictual inasmuch as permitted by law and professional conduct rules. Thus, in some settings publication restrictions might

[20] Consider the institutional history of the French judiciary in which decisions are written briefly and mechanically, and rendered *au nom du peuple français*, even as French law simultaneously requires that judicial authors must be disclosed in published decisions so long as there are no safety concerns (G'sell 2019).

encourage candor from lawyers and lead to greater levels of information for the public.

Finally, the models might be extended to account for other dimensions of judicial behavior or changing incentives over the passing of time. Take, for instance, the controlled release of judicial working papers. Unlike Presidents, judges own their working papers and can decide what to release to the public. They may expect to reveal additional information regarding their bias at retirement, which may influence what they choose to reveal while adjudicating cases as sitting judges. Age, or other factors that are related to a decision to retire, may impact the selection of a biased versus unbiased decision.

5. Conclusion

A number of legal scholars and judges have advocated unrestricted publication of judicial decisions that associate judicial identity with judicial action in order to increase learning about legal rules and judicial behavior. Increased learning is considered beneficial since, *inter alia*, it reduces uncertainty in litigation outcomes and induces higher settlement rates. This argument may be even more forcefully made given new advances in technologies that scrutinize large data sets and identify patterns of behavior and decisionmaking unbeknownst to judges. In addition, transparency induced by unrestricted publication may lead to decisions more aligned with legal rules despite deviations in judicial preferences. However, in the real world publication of judicial material is often restricted and lawmaking shows no unambiguous tendency in the direction of alleviating the restrictions.

In this paper, we add to the discussion by identifying two mechanisms which may attenuate the benefits obtained from unrestricted publication of judicial data. Unrestricted publication of material that reveals individual judges' characteristics may change judicial behavior in an undesired way. Judges aware that their actions can be associated with their identities may be afraid that the public will infer their personal views. The public's inference may also be undue if judges are unable to communicate their intuitive decisions. In short, rules that mandate publication of judicial

action may reduce judicial candor or otherwise alter judicial decisions, and as a result, lead to an unintended consequence of reduced information.

We present two models to account for changes in judicial behavior. In the first, judges hide personal bias by adjusting their explanations for decisions that they make with respect to the issues presented to them. Under restricted publication, where judicial identity remains hidden, all judges provide candid explanations which increase information about relevant legal rules and other bases for judicial action. With unrestricted publication, only confident judges who do not care about their public image will provide candid reasoning. Timid judges may obscure personal predilections with less candid discussions and explanations. Consequently, unrestricted publication can lead to less learning, especially if the share of timid judges is high and uncertainty about legal rules is especially pronounced.

In our second model we consider situations in which the judicial ability to obscure bias is limited when the decision itself may be interpreted as a signal regarding the judge's personal proclivity toward an outcome. This is especially likely if a decision must favor one of two conflicting parties and relies on intuition or hunches difficult to communicate. We demonstrate that unrestricted publication may change judicial decisions when judges attempt to prevent public perception of bias, which may result in fewer unbiased 'correct' decisions, especially if the level of conflict between parties is not too high.

Our models capture the potential for unintended consequences of unrestricted publication. In our view, various extensions that, for instance, include the preferences of attorneys or structure the timing of judicial releases of information, can further enrich our understanding of the relationship between publication and judicial candor.

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Appendix

Mostly Pro-Defendant Judges

Assume, in contrast to the analysis contained in Subsection 3.2.3, that an indifferent judge may choose either a biased or an unbiased decision. This allows that if for $\lambda = 1$ all judges are indifferent between decision x and y, then some decide the issue in the plaintiff's favor and some in the defendant's favor instead of all judges choosing the 'correct' ruling x. This alternative assumption generates the possibility of an additional equilibrium.

Consider an equilibrium so that for $\lambda = 1$ some judges decide for x and some judges decide for y. This equilibrium requires indifference between rulings x and y for all judges after observing $\lambda = 1$ since all judges share the same preferred decision x. That is, we must have

$$rE[\mu|v = x] = (x - y) + rE[\mu|v = y] \tag{A1}$$

In the event that the judge observes $\lambda = 0$, disutility from a ruling x amounts to

$$(1 - \mu)(x - y) + rE[\mu|v = x]$$

which using (A1) can be rewritten as

$$(2 - \mu)(x - y) + rE[\mu|v = y] \tag{A2}$$

Should the judge decide for y, her disutility is

$$\mu(x - y) + rE[\mu|v = y] \tag{A3}$$

From (A2) and (A3) it holds that all judges with $\mu < 1$ strictly prefer decision y if they observe $\lambda = 0$ while a judge with $\mu = 1$ is indifferent between the two decisions.

Consequently, assuming that for $\lambda = 1$ judges with $\mu \geq \mu_1$ decide for x while judges with $\mu < \mu_1$ decide for y, expected bias for the two possible decisions is given by

$$E[\mu|v = x] = \frac{\mu_1 + 1}{2}$$

and

$$E[\mu|v = y] = \frac{p\mu_1 \frac{\mu_1}{2} + (1-p)\frac{1}{2}}{p\mu_1 + (1-p)} = \frac{p\mu_1^2 + (1-p)}{2p\mu_1 + 2(1-p)}$$

A decision x is only possible for $\lambda = 1$ and comes from a judge whose value of μ is in the interval $[\mu_1, 1]$. A decision y may be due to $\lambda = 0$ or an issue with $\lambda = 1$ being decided by a judge with $\mu \in [0, \mu_1)$. The total number of issues with decision y therefore amounts to $(1-p) + p\mu_1$. The total number of issues with $\lambda = 1$ is $p\mu_1$ (expected bias $\mu_1/2$), and the total number of issues with $\lambda = 0$ is $1 - p$ (expected bias $1/2$).

The difference in expected bias amounts to

$$E[\mu|v = x] - E[\mu|v = y] = \frac{1}{2}\frac{\mu_1}{p\mu_1 + (1-p)} \tag{A4}$$

Combining (A1) and (A4) we have

$$r\frac{1}{2}\frac{\mu_1}{p\mu_1 + (1-p)} = (x - y)$$

from which the critical value μ_1 is given by

$$\mu_1 = \frac{2(1-p)(x-y)}{r - 2p(x-y)}$$

For the equilibrium to exist, μ_1 must fall between zero and one, which is fulfilled for

$$r \geq 2(x - y)$$

As with the *Defendants' Judges* equilibrium, this equilibrium exists for $r > 2(x - y)$. It shares the features of only unbiased decisions for $\lambda = 0$, but diversions from the 'correct' decision x for $\lambda = 1$. With some judges deciding for x for $r > 2(x - y)$, the number of unbiased decisions is higher in comparison to the *Defendants' Judges* equilibrium.