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Alex Stein

Brooklyn Law School, astein57@gmail.com

Uzi Segal

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AMBIGUITY AVERSION AND THE CRIMINAL PROCESS

Uzi Segal and Alex Stein†*

Ambiguity aversion is a person's rational attitude towards the indeterminacy of the probability that attaches to his future prospects, both favorable and unfavorable. An ambiguity-averse person increases the probability of the unfavorable prospect, which is what criminal defendants typically do when they face a jury trial. The prosecution is not ambiguity averse. Being a repeat player interested in the overall rate of convictions, it can depend upon any probability, however indeterminate it may be. The criminal process therefore is systematically affected by asymmetric ambiguity aversion, which the prosecution can exploit by forcing defendants into harsh plea bargains. Professors Segal and Stein examine this issue theoretically, empirically, and doctrinally. They demonstrate that asymmetric ambiguity aversion foils criminal justice and propose a law reform that will fix this problem.

INTRODUCTION

This Article identifies and analyzes an intrinsic, but widely neglected, feature of criminal trials: *asymmetric ambiguity aversion*. In a paradigmatic jury trial, the probability of the defendant's conviction is profoundly ambiguous. Only a highly generalized probability that refers to a broad category of similar cases is available. The prosecution can rely on this general probability, but the defendant cannot. For the prosecution as a repeat player, this probability is reliable enough

* Professor of Economics, Department of Economics, Boston College.

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an indicator of the rate of convictions that it can attain over a long series of cases.¹ For the defendant, this probability is not a reliable indicator of his individual probability of being convicted. About this individual probability the prosecution cares very little,² but the defendant cares a lot. The prosecution only cares about obtaining as high a rate of convictions as possible in a long sequence of cases.³ The defendant, of course, only cares about his own case. Society should mind this asymmetry if it is interested in having a fair and efficient system of criminal justice. Prosecutors can exploit this asymmetry by forcing defendants into plea bargains that are neither fair nor efficient. In the American criminal justice system, plea bargain is a predominant method of case disposition.⁴ The prosecution's ability to

1 See Marc Galanter, *Why the "Haves" Come out Ahead: Speculations on the Limits of Legal Change*, 9 LAW & SOC'Y REV. 95, 97-100 (1974) (stating that repeat players, such as criminal prosecutors, can play the odds to maximize returns over a long series of cases); see also L. JONATHAN COHEN, AN INTRODUCTION TO THE PHILOSOPHY OF INDUCTION AND PROBABILITY 47-53 (1989) (identifying the limits to which a repeat player can rationally rely on a general frequency of events); P.A. Samuelson, *Risk and Uncertainty: A Fallacy of Large Numbers*, 98 SCIENTIA 108 (1963) (demonstrating, inter alia, that subdividing risks across cases is a more promising risk-management strategy than a continual replication of identical independent risks).

2 The prosecution only cares about it in a few high-profile cases. See Judith L. Maute, *"In Pursuit of Justice" in High Profile Criminal Matters*, 70 FORDHAM L. REV. 1745, 1747-50 (2002) (reporting that high-profile cases feature overzealous prosecution and extravagant expenditures by the law enforcement agencies); William J. Stuntz, *The Pathological Politics of Criminal Law*, 100 MICH. L. REV. 505, 534-38, 542-46 (2001) (describing prosecutors' different incentives in routine and salient prosecutions: in routine cases—typically handled by local prosecutors—prosecutors economize their efforts by obtaining as many convictions as possible through early plea bargaining in order to satisfy the public at the lowest possible cost; in salient cases—typically handled by federal prosecutors—prosecutors expend efforts in order to obtain experience and publicity).

3 See, e.g., Stephanos Bibas, *Plea Bargaining Outside the Shadow of Trial*, 117 HARV. L. REV. 2463, 2471 (2004) (observing that prosecutors uniformly care about their conviction statistics because "[f]avorable win-loss statistics boost prosecutors' egos, their esteem, their praise by colleagues, and their prospects for promotion and career advancement"); Steven D. Dillingham, *Performance Measurement: Beyond Conviction Rates*, PROSECUTOR, NOV.-DEC. 2002, at 9, 9, 14 (observing that conviction rates are considered to be prosecutors' "key performance indicators" and criticizing misuses of this criterion); Jennifer L. Mnookin, *Uncertain Bargains: The Rise of Plea Bargaining in America*, 57 STAN. L. REV. 1721, 1722-23 (2005) (reviewing GEORGE FISHER, *PLEA BARGAINING'S TRIUMPH: A HISTORY OF PLEA BARGAINING IN AMERICA* (2003)) (analyzing Fisher's claim that prosecutors tend to plea bargain to enhance their win rate).

4 See GEORGE FISHER, *PLEA BARGAINING'S TRIUMPH: A HISTORY OF PLEA BARGAINING IN AMERICA* 230 (2003) (observing that plea bargaining "became the dominant force in criminal procedure" and that it "grew so entrenched in the halls of power that today . . . it can grow no more"); MIKE MCCONVILLE & CHESTER L. MIRSKY, JURY

exploit the defendant's ambiguity aversion is therefore particularly pernicious. The legal system ought to eliminate this ability or at least reduce it as much as it can.

An individual defendant cannot rely on the general rate of convictions that attaches to the relevant category of cases. This rate averages the low-rate and the high-rate clusters of cases falling within the category. Statistically, these clusters cancel out. The defendant, however, needs to account for the possibility that his individual case falls into the high-rate cluster. The defendant's case may belong to the low-rate cluster as well, but this prospect is purely statistical. As such, it does not automatically cancel out the defendant's scenario in which he is most likely to be convicted. The individual—as opposed to general—probability of this scenario is highly ambiguous.

A typical criminal defendant is ambiguity averse.⁵ He fears the ambiguity of his probability of conviction, over which he exercises no control. This ambiguity makes the defendant pessimistic about his chances of acquittal. In estimating his individual probability of conviction, the defendant adjusts the general probability of conviction upwards to reflect that pessimism.⁶ This upward adjustment generates the asymmetry detrimental to the criminal justice system. The defendant believes that his chances of being convicted by the jury are high, relative to what the prosecutor believes them to be. Aware of the defendant's ambiguity aversion, the prosecutor might exploit it in order to boost his or her performance and career. The prosecutor will offer the defendant a harsh plea bargain that the defendant will have to accept. This plea bargain will impose on the defendant a criminal sanction (conviction and penalty) that exceeds the average. The prosecutor can exercise the same strategy against other defendants. The result will be a conviction of some innocent defendants, as well as imposition of excessive punishments upon others. This overcriminalization is both unfair and inefficient.

The prevalence of plea bargains across the United States⁷ makes this outcome grossly inefficient and unfair. Permitting the prosecution to achieve it also allows it to snowball. After raising the rate of

TRIALS AND PLEA BARGAINING 327–37 (2005) (describing and explaining the displacement of trial by plea bargaining).

5 See *infra* notes 39, 62–70, 182–257 and accompanying text. This dislike of ambiguous probabilities stands apart from a person's aversion towards risk. Risk aversion is a general reluctance to gamble that persists even when the relevant probabilities are known. See *infra* notes 97–100, 109–12 and accompanying text.

6 See *infra* Part II.

7 See, e.g., Robert E. Scott & William J. Stuntz, *Plea Bargaining as Contract*, 101 YALE L.J. 1909, 1912 (1992) (observing that plea bargaining “is the criminal justice system”).

convictions through plea bargaining, the prosecution will play the same strategy against new defendants, whose pessimism about the outcomes of their trials will intensify relative to their predecessors. These defendants will accept an even harsher penalty than did their predecessors. This dynamic will repeat itself again and again, to the detriment of defendants and the criminal justice system as a whole.

This Article does not merely diagnose this fundamental problem, but also tells how to remedy it. We proceed in the following order. Part I explains the meaning and rationality of ambiguity aversion—a person's upward adjustment of the indeterminate probability that attaches to his or her worst-case scenario. Subsequently, it identifies the *asymmetric-ambiguity-aversion* phenomenon—a profound imbalance between the defendant's and the prosecution's aversion towards unpredictability of jury trials. Asymmetric ambiguity aversion is a widespread phenomenon in jury trials. Bench trials, in which everything is decided by a single judge, are generally predictable. They do involve a certain degree of ambiguity, but are far from being as ambiguous as jury trials. The asymmetric ambiguity aversion that bench trials involve is therefore far from being as acute as in jury trials.⁸

Part II explains how the prosecution in a jury trial—a repeat player with no aversion towards indeterminate probabilities—can take advantage of the defendant's ambiguity aversion by forcing him into a harsh plea bargain that is neither fair nor efficient. This argument repudiates the traditional view which holds that jury trials benefit defendants.⁹ For defendants, bench trials generally work better than jury trials because the defendant's probability of being convicted by a judge is relatively unambiguous. This probability is unambiguous because judges, unlike juries, are reliably committed to the institutionally affirmed and generally known reasons in deciding about both facts and law. A defendant facing an unambiguous probability of conviction does not adjust it upwards.¹⁰ He experiences no fear of ambi-

8 To maintain methodological clarity, we describe bench trials as unambiguous, which means "unambiguous relative to jury trials." We also acknowledge that *risk aversion* (as opposed to aversion towards ambiguity) may exist in both bench and jury trials. See *infra* notes 97–100, 109–12 and accompanying text.

9 See, e.g., RANDOLF N. JONAKAIT, *THE AMERICAN JURY SYSTEM* 18–24 (2003) (stating the conventional wisdom that perceives juries as protecting individuals from being abused by the government); John B. Attanasio, *Foreword: Juries Rule*, 54 SMU L. REV. 1681, 1681–82 (2001) (restating the traditional view under which "[t]he jury is one of the key protections of individual rights, shielding the individual against the government. Before government can fine, imprison, or kill a member of the community, that person has a right to a jury trial").

10 By this and similar statements we mean, once again, that the probability's upward adjustment in a bench trial is negligible relative to jury trials.

guity and therefore has no rational reason for making such an adjustment. This defendant's plea bargain with the prosecution consequently is likely to be both fair and efficient.

Defendants, therefore, should only opt for a jury trial when their aversion towards ambiguity is outweighed by the expected gain. For example, a defendant may be facing strong evidence that makes his conviction by a judge practically certain. Such defendants may rationally decide to take their chances with a jury. For them, the probabilistic ambiguity that jury trials involve is desirable. Another defendant may have a reason to believe that the judge is biased in the prosecution's favor.¹¹ This defendant may also rationally prefer a jury trial to a trial by a judge. This latter scenario, however, is quite exceptional—an observation originating from yet another new insight that this Article develops. Trial judges prefer bench trials over trials by jury. From the trial judges' perspective, jury trials are both effort intensive and time consuming.¹² Judges consequently try to avoid the jury-trial prospect by creating reputations for being evenhanded. Bench trials enable judges to clear dockets and showcase their reputation-enhancing qualities more efficiently than in jury trials.¹³ The defendant and the prosecution usually need to consent to a switch from a jury trial—the constitutional default for criminal litigation¹⁴—to a trial before a judge.¹⁵ To make this switch an attractive possibility for both the de-

11 The defendant also may have reasons to believe that jurors will be biased in his or her favor. This scenario is unlikely because jurors, unlike judges, can be substituted by others (either for cause or following peremptory challenges). See *infra* notes 56–59 and accompanying text.

12 See BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS—2003, at 447 tbl.5.43 (Ann L. Pastore & Kathleen Maguire eds., 2004) [hereinafter SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS], available at <http://www.albany.edu/sourcebook/> (reporting, in relation to federal prosecutions, that, on the average, a bench trial is about four times faster than a jury trial); see also Vikramaditya S. Khanna, *Double Jeopardy's Asymmetric Appeal Rights: What Purpose Do They Serve?*, 82 B.U. L. REV. 341, 398 n.219 (2002) (arguing that jury trials are generally costlier than bench trials).

13 Khanna, *supra* note 12, at 398 n.219.

14 See U.S. CONST. art. III, § 2 (“The Trial of all Crimes, except in Cases of Impeachment, shall be by Jury”); *id.* amend. VI (“In all criminal prosecutions, the accused shall enjoy the right to a . . . public trial, by an impartial jury”).

15 See FED. R. CRIM. P. 23(a), under which the defendant can waive his or her right to a jury trial and switch to a bench trial. Effectuation of this waiver depends on the prosecution's consent and the court's approval. See *Singer v. United States*, 380 U.S. 24, 26, 36–37 (1965) (upholding the constitutionality of FED. R. CRIM. P. 23(a) and reaffirming the rule that criminal defendants cannot unilaterally choose a bench, as opposed to jury, trial). This rule is adopted in most jurisdictions across the United States. See *infra* notes 26–27.

fendant and the prosecution, the judge needs to credibly exhibit evenhandedness, professionalism, and an unqualified commitment to the institutionally affirmed reasons for decisions. By acting upon this incentive, judges make their decisions predictable. Jury trials therefore play an important role in the criminal justice system. They improve the quality of bench trials by presenting a costly alternative that judges generally want to avoid.¹⁶

Part III identifies two legal mechanisms that reduce the effects of the asymmetric ambiguity aversion and thereby counterbalance the prosecution's advantage in plea bargaining. Both mechanisms are established by the Constitution's Fifth Amendment. One of these mechanisms is the rule against double jeopardy.¹⁷ This rule attenuates the effects of the asymmetric ambiguity aversion by setting an asymmetric system of criminal appeals. Under this system, acquittals are not appealable, but convictions are.¹⁸ This system indiscriminately skews legal errors to the prosecution's side. By doing so, it reduces the probability of conviction for both guilty and innocent defendants.¹⁹ This probability reduction has nothing to do with the merits of the defendant's case. This separates the rule against double jeopardy from other procedural rules that account for the defendant's possible guilt or innocence. These other rules, such as the proof-beyond-all-reasonable-doubt requirement, also reduce the defendant's probability of conviction. Yet, they do not do so indiscriminately.

For that reason, the criminal justice system can justifiably remove the double jeopardy prohibition. Alternatively, the system may keep the prohibition to offset nonmeritorious—and yet unavoidable—increases in the defendant's probability of conviction. This is what the rule against double jeopardy effectively does. This rule reduces the upward adjustment that an ambiguity-averse defendant introduces into the probability of his conviction. The outcome of this setoff, however, can only be gauged in intuitive terms. The probability of a pro-defendant error generated by the rule against double jeopardy does not appear to be large enough to eliminate the upward adjustment.

16 Justice White may have had it in mind when he observed that “[e]ven where defendants are satisfied with bench trials, the right to a jury trial very likely serves its intended purpose of making judicial . . . unfairness less likely.” *Duncan v. Louisiana*, 391 U.S. 145, 158 (1968).

17 In the constitutional language, “nor shall any person be subject for the same offense to be twice put in jeopardy of life or limb.” U.S. CONST. amend. V.

18 See WAYNE R. LAFAVE ET AL., *CRIMINAL PROCEDURE* §§ 25.1(a)–(b), 25.3 (3d ed. 2000).

19 See Kate Stith, *The Risk of Legal Error in Criminal Cases: Some Consequences of the Asymmetry in the Right To Appeal*, 57 U. CHI. L. REV. 1, 17–27 (1990).

Another corrective mechanism is a grand jury review—a proceeding that determines whether the accusations merit an indictment.²⁰ This proceeding generates information about the defendant's prospect of being convicted in a jury trial. The defendant can obtain this information from the results of the grand jurors' vote on the indictment decision. For the defendant, this information functions as a straw-vote on the case. This information disambiguates the defendant's probability of conviction, but it does so incompletely. In most jurisdictions, the grand jury only decides about a probable cause for filing an indictment,²¹ a far cry from what will happen at the defendant's trial.²² Moreover, the right to a grand jury review is limited. This right is only available in federal prosecutions and in the states that prosecute felonies by indictment rather than information.²³

Part III therefore ultimately offers to allow criminal defendants to choose between a trial by jury and a bench trial.²⁴ Under the United States Constitution, a defendant is only entitled to a jury trial.²⁵ Nu-

20 U.S. CONST. amend. V (providing that "[n]o person shall be held to answer for a capital, or otherwise infamous crime, unless on a presentment or indictment of a Grand Jury").

21 See *United States v. Navarro-Vargas*, 408 F.3d 1184, 1196–98 (9th Cir. 2005) (observing that in federal and most state jurisdictions, grand jurors are instructed to return an indictment upon finding a probable cause to believe that the accused is guilty of the offense charged).

22 Minnesota has a different grand jury model. This model instructs grand jurors that they are "not obliged to return an indictment, even though . . . there is probable cause, if [they] do not feel there is a reasonable prospect of a conviction." MINN. R. CRIM. P. 18.07.

23 See LAFAYE ET AL., *supra* note 18, § 15.1(d)–(g) (listing and explaining the differences between the indictment and information jurisdictions).

24 Cf. Adam H. Kurland, *Providing a Federal Criminal Defendant with a Unilateral Right to a Bench Trial: A Renewed Call To Amend Federal Rule of Criminal Procedure 23(a)*, 26 U.C. DAVIS L. REV. 309 (1993). Professor Kurland proposes to allow a defendant to choose between a jury trial and a bench trial for reasons different from ours. According to him, some defendants may want to escape from biased and incompetent jurors—an observation pertaining in particular to complex and high-profile cases. Professor Kurland also believes that a defendant's right to select the trial-mode will affect only a few cases and "will work no drastic shift in federal criminal law" except for "complex and high profile cases, where the defendant's decision to elect a bench trial is the most compelling." *Id.* at 364. We estimate the effect of the proposed right as most substantial. Under our theory, the right to opt for a bench trial will prevent many thousands of defendants from being forced into harsh and inefficient plea bargains. As mentioned at the outset, plea bargain is the prevalent method of case disposition in both state and federal courts. Focusing solely upon trials is therefore methodologically wrong.

25 See *supra* notes 14–15.

merous states have adopted a similar arrangement.²⁶ When a defendant wants to be tried by a judge, his wish can only be granted upon the prosecution's consent and the court's approval.²⁷ New York,²⁸ Illi-

26 See Kurland, *supra* note 24, at 322 nn.40 & 42, 323 n.43 (listing numerous jurisdictions that follow the federal model, with and without variations); see also *People v. Dist. Court*, 953 P.2d 184, 186 (Colo. 1998) ("[T]he People may refuse to consent to the defendant's request to waive a jury trial, so long as that refusal comports with a defendant's due process rights as provided in the United States and Colorado Constitutions"); *State v. Dunne*, 590 A.2d 1144, 1146-51 (N.J. 1991) (holding that defendants in New Jersey courts have no constitutional right to a bench trial, but the trial court has a discretion to grant the defendant's bench-trial request in accordance with the following guidelines: "At one end of the scale, tilting in favor of jury trial, will be the gravity of the crime. The higher the degree of the crime, the greater the weight given to that factor. Other factors that will tip the scale will be the position of the State, the anticipated duration and complexity of the State's presentation of the evidence, the amenability of the issues to jury resolution, the existence of a highly-charged emotional atmosphere . . . , the presence of particularly-technical matters that are interwoven with fact, and the anticipated need for numerous rulings on the admissibility or inadmissibility of evidence."); *State v. Oakley*, 72 P.3d 1114, 1118-20 (Wash. Ct. App. 2003) (holding that Washington statutes granting the State the right to demand a jury trial over a defendant's objection does not violate the Washington Constitution because defendants have no constitutional right to a nonjury trial).

27 See *supra* note 26. In *State v. Burks*, 674 N.W.2d 640 (Wis. Ct. App. 2003), the Wisconsin Court of Appeals affirmed a trial court's decision to turn down the defendant's request for a bench trial, consented to by the State. The trial court reasoned that "'assessment of a person's intent is something which is quintessentially suited for a jury of 12 citizens. The virtue that the jury brings to our courtroom is that they carry with them the communal assessment of the ethics and standards from our community.'" *Id.* at 643. The court of appeals held that "[a]lthough the right of a defendant in a criminal case to be tried by an impartial jury is well-entrenched in both the federal and state constitutions, a defendant does not have a reciprocal constitutional right to waive a jury and be tried by a judge." *Id.* at 644. For that reason, it decided that

like the prosecution's decision to withhold consent to a defendant's request to waive his or her right to a jury trial, the trial court also need not explain its decision to withhold its approval, and absent extraordinary circumstances not present here, its decision to withhold approval, like the prosecution's decision to withhold consent, is not reviewable.

Id. at 645.

28 N.Y. CONST. art. I, § 2 (providing that "[a] jury trial may be waived by the defendant in all criminal cases, except those in which the crime charged may be punishable by death, by a written instrument signed by the defendant in person in open court before and with the approval of a judge or justice of a court having jurisdiction to try the offense"); N.Y. CRIM. PROC. LAW § 320.10(2) (McKinney 2002) (requiring the court to approve the defendant's waiver of a jury trial and conduct a bench trial instead "unless it determines that it is tendered as a stratagem to procure an otherwise impermissible procedural advantage or that the defendant is not fully aware of the consequences of the choice he is making"). Courts interpret these provisions as generally permitting defendants in noncapital cases to opt for a bench trial unilaterally.

nois,²⁹ Iowa,³⁰ and a number of other states³¹ allow defendants to opt

See *People v. Davis*, 400 N.E.2d 313, 316 (N.Y. 1979) ("It can no longer be disputed that defendant had a constitutional right to waive trial by jury . . ."); *People ex rel. Rohrlich v. Follette*, 229 N.E.2d 419, 421 (N.Y. 1967) (holding that the judge's discretion to deny a defendant's request for a bench trial can only be exercised upon grounds qualifying as compelling which do not include the judge's desire to entrust fact-finding to a jury); *People v. Duchin*, 190 N.E.2d 17, 17-18 (N.Y. 1963) (holding that N.Y. CONST. art. I, § 2 "is designed for the benefit of the defendant. When, choosing to be tried by a judge alone, he requests a waiver, he is entitled to it as a matter of right once it appears to the satisfaction of the judge that . . . the waiver is tendered in good faith and is not a stratagem to procure an otherwise impermissible procedural advantage").

29 *See* *People v. Gersch*, 553 N.E.2d 281, 283 (Ill. 1990) (reaffirming the *Joyce* principle, under which a criminal defendant has a constitutional right to a bench trial, and holding that it was a violation of the defendant's constitutional rights to give the State the right to demand jury trial over the defendant's waiver); *People ex rel. Daley v. Joyce*, 533 N.E.2d 873, 879 (Ill. 1988) (holding that a criminal defendant has a constitutional right to choose between a jury and a bench trial and invalidating a statute that conditioned the substitution of a jury trial by a bench trial upon the prosecution's consent); *People v. Reed*, 319 N.E.2d 557, 558-59 (Ill. App. Ct. 1974) (holding that the rule laid down in *Singer v. United States*, 380 U.S. 24 (1965), does not apply in Illinois and that the trial judge erred in not accepting the defendant's waiver of jury trial over the State's objection to that waiver).

30 *See* *State v. Henderson*, 287 N.W.2d 583, 586 (Iowa 1980) (interpreting Iowa R. CRIM. P. 16(1) as conferring upon criminal defendants an absolute right to waive jury and be tried by a judge).

31 Namely Connecticut, Louisiana, Maryland, Montana, Nebraska, New Hampshire, and Ohio. *See* CONN. GEN. STAT. ANN. § 54-82b (West 2001) (allowing defendants to unilaterally switch from a jury to a bench trial); CONN. SUPER. CT. R. CRIM. P. 39-19(5) (providing that the judicial authority shall not accept a defendant's plea of guilty or nolo contendere without first determining that the defendant fully understands "[t]he fact that he or she . . . has the right to be tried by a jury or a judge"); LA. CODE CRIM. PROC. ANN. art. 780(A) (1998) ("A defendant charged with an offense other than one punishable by death may knowingly and intelligently waive a trial by jury and elect to be tried by the judge."); MD. R. CRIM. CAUSES 4-246 (allowing defendants "knowingly and voluntarily" to opt for a bench trial instead of a jury trial); *Thomas v. State*, 598 A.2d 789, 790 (Md. Ct. Spec. App. 1991) (stating that criminal defendants in Maryland have "a long standing common law right to choose between a trial by jury and a trial by the court"); *State ex rel. Nelson v. Mont. Ninth Judicial Dist. Court*, 863 P.2d 1027, 1034 (Mont. 1993) (holding that a criminal defendant can opt for a bench trial unilaterally under Montana law); *State v. Carpenter*, 150 N.W.2d 129, 131 (Neb. 1967) (interpreting the right to a jury trial under Nebraska Constitution as "personal to the defendant" with the consequence that "the state is without power to require [a jury trial] if the defendant wishes to waive it"); N.H. REV. STAT. ANN. § 606:7 (LexisNexis 2003) (allowing defendants to choose a bench trial unilaterally before jury is impaneled, but conditioning the switch to a bench trial in a multi-defendant case upon each defendant's consent); OHIO R. CRIM. P. 23(A) ("In serious offense cases the defendant before commencement of the trial may knowingly, intelligently and voluntarily waive in writing his right to trial by jury. Such waiver may

for a bench trial unilaterally.³² Our theory offers a similar approach. Under our theory, defendants should be able to opt for a bench trial without the prosecution's consent and the court's approval.³³

Part IV tests our theory against empirical data. These data include the rates of bench and jury trials, both state and federal, as well as the acquittal rates that bench and jury trials respectively produce. Our analysis of these data identifies two fundamental trends. *Bench trials are prevalent in jurisdictions with high trial rates.* When many cases go to trial, the vast majority of the trials are bench trials, rather than trials by jury. Furthermore, *the rate of acquittal in bench trials is much higher than in trials by jury.* We link these trends to the defendants' ambiguity aversion. In jurisdictions with low trial rates—where the prosecution prosecutes only strong cases and obtains many guilty pleas, unilateral and plea bargained—most defendants face solid incriminating evidence upon which they expect to be convicted by a professional judge. Such defendants have no ambiguity to be anxious about. To the contrary, they have every reason to seek ambiguity. An indeterminate jury trial offers such defendants a slight prospect of acquittal (usually erroneous), which they purchase by paying their attorneys' fees and by exposing themselves to a possible sentencing retaliation by the judge (a defendant who wasted the judge's time must expect the judge to waste his).³⁴ For that reason, the acquittal

also be made during trial with the approval of the court and the consent of the prosecuting attorney.”); *State v. Jells*, 559 N.E.2d 464, 468 (Ohio 1990) (holding that “[t]here is no requirement in Ohio for the trial court to interrogate a defendant in order to determine whether he or she is fully apprised of the right to a jury trial” and that “[t]he Criminal Rules . . . are satisfied by a written waiver, signed by the defendant, filed with the court, and made in open court, after arraignment and opportunity to consult with counsel”).

32 Under the Oregon Constitution, defendants in noncapital cases can opt for a bench trial, but this right is conditioned on the judge's approval. The prosecution cannot veto the defendant's written request for a bench trial. See *State v. Baker*, 976 P.2d 1132, 1137 (Or. 1999). Minnesota has a similar rule. See *Gaulke v. State*, 184 N.W.2d 599, 602 (Minn. 1971) (advising in dictum that a defendant's request for a bench trial requires approval of the trial court, but not the prosecution's consent).

33 The rule against double jeopardy and the grand jury mechanism do not merely ameliorate the problem focused upon by this Article. They have other functions as well. See *LaFAVE ET AL.*, *supra* note 18, §§ 15.1(a), 25.1(b) (rationalizing the rule against double jeopardy and the grand jury review of criminal charges as tackling the threat of governmental oppression). We therefore do not extend our recommendations to these two pillars of the criminal justice system.

34 See, e.g., Richard Klein, *Due Process Denied: Judicial Coercion in the Plea Bargaining Process*, 32 *HOFSTRA L. REV.* 1349, 1349–50 (2004) (reporting that judges commonly “up the sentence” when the defendant chooses to go to trial and is ultimately found guilty).

rate in jury trials is relatively low (15% on the average).³⁵ Defendants with solid acquittal prospects unequivocally prefer bench trials. We discern this phenomenon from the high rate of acquittals in bench trials (46% on the average).³⁶ We also deduce it from the prevalence of bench trials in jurisdictions with high trial rates.³⁷ In these jurisdictions, the prosecution's nonmeticulous indictment policy produces many cases with thinly evidenced accusations.³⁸ Many defendants consequently go to trial. Because such defendants have solid acquittal prospects (and are often factually innocent), they prefer a bench trial to a trial by jury. They are unwilling to entrust their solid acquittal prospects in jurors' hands. Ambiguity aversion is the most plausible explanation for this preference.

Our empirical investigation also identifies the demand for jury consulting services and the virtual lack of demand for judge consulting services. Many defendants are willing to pay for jury consultancy in order to disambiguate their trial prospects and improve their plea bargaining positions vis-à-vis the prosecution. Hence, asymmetric ambiguity aversion is a problem not only in our theoretical model, but also in reality.

This Article concludes by setting forth its normative proposal.

I. ASYMMETRIC AMBIGUITY AVERSION

Any prospect has its economic value for a person involved. This value may be positive (a gain) or negative (a loss). It is determined by three factors. The first factor is the anticipated outcome: the gain that the person acquires or, alternatively, the loss that she suffers from the prospect's materialization. The second factor is the prospect's probability. The third factor is the adequacy of the information upon which this probability is determined. The person's expected gain (or loss) equals the full amount of the gain (or the loss) multiplied by the prospect's probability. To complete the calculation of the prospect's value, the person needs to account for the adequacy of the information from which she derives the prospect's probability. When this information is wanting, the prospect's probability becomes indeterminate or ambiguous. This informational deficiency has a negative value for the person. The person consequently detracts this

35 See *infra* Table 1.

36 See *infra* Table 1.

37 See *infra* notes 186–218 and accompanying text.

38 See *infra* notes 186–218 and accompanying text.

value from her expected gain or adds it to her expected loss.³⁹ Any such adjustment reflects the person's aversion towards ambiguity.⁴⁰ This Part explains this phenomenon and identifies its effect on the criminal process. To this end, it utilizes three stylized examples. One of these examples is further developed in Part II.

David faces serious criminal charges. The prosecution's case is fairly strong, but there is also evidence that may exonerate David. The prosecution offers David to take the case to a bench trial in which everything will be decided by a single judge.⁴¹ David turns this offer down and opts for a jury trial. By making this choice, David exercises his fundamental constitutional right to a trial by his fellow citizens. This right protects people from being oppressed by the government.⁴² Police, prosecution, and other agencies executing criminal law may unjustly deprive a person of her freedoms. Arguably, only impartial jurors can adequately protect an individual from such abuses.⁴³ Judges are ill qualified for that task because their appointments, promotion, tenure, and salaries depend on the government.⁴⁴ Trial by jury, therefore, is "the lamp that shows that freedom lives."⁴⁵ This bedrock of the American criminal justice system⁴⁶ allows citizens to enforce their community values⁴⁷ and to exercise their self-government and political responsibility.⁴⁸

39 See Daniel Ellsberg, *Risk, Ambiguity, and the Savage Axioms*, 75 Q.J. ECON. 643, 657–69 (1961).

40 *Id.*

41 See FED. R. CRIM. P. 23(a) (allowing the defendant to waive his or her right to a jury trial).

42 See *Singer v. United States*, 380 U.S. 24, 31 (1965) (explaining that the right to a jury trial "was clearly intended to protect the accused from oppression by the Government").

43 See JONAKAIT, *supra* note 9, at 18–40.

44 See, e.g., NANCY S. MARDER, *THE JURY PROCESS* 35–36 (2005) (describing the jury as a buffer that stands between the accused and all state agents, including prosecutors and judges); Patrick E. Higginbotham, *Juries and the Death Penalty*, 41 CASE W. RES. L. REV. 1047, 1047–48 (1991) (arguing that the jury's function as a buffer between the accused and the state is eroded by the sentencing rules that allow judges to make factual findings).

45 PATRICK DEVLIN, *TRIAL BY JURY* 164 (1956).

46 See *Tyler v. Cain*, 533 U.S. 656, 665 (2001) (describing "the right to have the jury make the determination of guilt beyond a reasonable doubt" as "a bedrock element of procedural fairness").

47 See JONAKAIT, *supra* note 9, at 64–74 (describing jurors as enforcers of community values); Adrian A.S. Zuckerman, *Law, Fact or Justice?*, 66 B.U. L. REV. 487, 494–508 (1986) (rationalizing the jury system as adjudication on the merits through invocation of public values and sense of security).

48 ALEXIS DE TOCQUEVILLE, *DEMOCRACY IN AMERICA* 258–64 (Harvey C. Mansfield & Delba Winthrop eds., Univ. Chi. Press 2000) (1835).

David's decision to be tried by a jury rather than a judge therefore appears perfectly rational. In fact, it is rational, but not perfectly so. This decision would be perfectly rational if the judge adjudicating David's case were biased in favor of the prosecution or if David had some special reason to believe that jurors are going to be biased in his favor. Absent such biases, a defendant's conviction prospect in a trial by jury can only be assumed to be equal to his conviction prospect in a bench trial. The rationality of David's choice consequently can be questioned. This choice is likely to prove self-damaging in David's plea bargaining with the prosecution.

This robust claim runs against the traditional wisdom. According to this wisdom, the right to a jury trial benefits ordinary people such as David. The traditional wisdom, however, completely ignores the *asymmetric ambiguity aversion*—a fundamental feature of criminal jury trials that this Article brings to the fore. Outcomes of criminal trials before a jury are only predictable in terms that are inherently ambiguous.⁴⁹ Criminal defendants are generally averse towards this ambiguity,⁵⁰ as they should rationally be.⁵¹ Their prosecutors, in contrast, have no such aversion and no rational reasons for developing it. In the pages ahead, we explain how prosecutors—as repeat players—can exploit this systematic asymmetry by forcing unfavorable plea bargains upon defendants. We also demonstrate that such bargains are neither fair nor efficient.⁵² David, a paradigmatic criminal defendant in our example, is going to make one such bargain. Meanwhile, he turns to estimating his probability of being convicted or, alternatively, acquitted by the jury.

In making this estimation, David can only find out how juries *typically* decide cases similar to his. Similarity between cases only helps David to identify the prevalent decision pattern for the relevant cate-

49 See JEROME FRANK, *LAW AND THE MODERN MIND* 172, 173 (1930) (famously observing that “[a] better instrument than the usual jury trial could scarcely be imagined for achieving uncertainty, capriciousness, lack of uniformity, disregard of former decisions—utter unpredictability” and that “only a very foolish lawyer will dare guess the outcome of a jury trial”); see also JEFFREY ABRAMSON, *WE, THE JURY: THE JURY SYSTEM AND THE IDEAL OF DEMOCRACY* 145 (1994) (“[E]ven generalizations about groups are of limited use in the jury context, because the behavior of jurors, as well as the local community from which they are drawn, is so specific to the particular case on trial.”); Heather K. Gerken, *Second-Order Diversity*, 118 HARV. L. REV. 1099, 1165 (2005) (observing that jury verdicts are indeterminate and can only be predicted within a general “evidentiary range”).

50 See *infra* pp. 1537–38.

51 See *supra* note 39 and accompanying text; *infra* notes 62–70 and accompanying text.

52 See *infra* Part II.

gory of cases. The scenario in which jurors deciding David's individual case follow this pattern is a different matter. This scenario is probable, but there is no way for David to know how probable it is. The probability of this scenario is unknowable or ambiguous, in our terminology. David, therefore, must consider this ambiguity and its implications for his trial management.

This situation is analogous to a lottery box from which each participant draws one ball without seeing it. Drawing a white ball wins the lottery. Drawing a red ball loses it. The balls are randomly thrown into the box by an automatic feeder. There are no balls other than red and white. An individual participant does not know, however, how many red and white balls are in the box. David's jurors are similar to these balls in one crucial respect: they will be drawn from a large pool of citizens almost as randomly as the balls in the box.⁵³ The "fair cross section" requirement that the pool from which jurors are selected needs to satisfy⁵⁴ diversifies the jury. The automatic feeder performs a similar function in the lottery by picking balls—red and white alike—from the entire pool. The jurors' randomized selection and diversity forestall accurate predictions about their verdict.⁵⁵ David's jurors also must not have any pre-commitment to reasons affecting their future verdict. Any such pre-commitment disqualifies the juror for cause.⁵⁶ David's and the prosecution's peremptory challenges may disqualify a few other jurors as well.⁵⁷ Such challenges originate from

53 See *DEVLIN*, *supra* note 45, at 26 (describing the random selection of prospective jurors from the pool of citizens eligible for jury service); *MARDER*, *supra* note 44, at 50–67 (describing the existing venire summoning methods that randomize the selection of jurors).

54 See *Taylor v. Louisiana*, 419 U.S. 522, 530 (1975) ("[T]he fair-cross-section requirement [is] fundamental to the jury trial guaranteed by the Sixth Amendment . . ."); *JONAKAIT*, *supra* note 9, at 114–27 (describing the jury as the most diverse of democratic bodies).

55 See *Gerken*, *supra* note 49, at 1165 ("Jury verdicts [especially in the criminal context] represent an extreme example of the discrete, individual costs that can arise from variation Some of these costs are reduced by the process of judicial review; because the case made by a prosecutor needs to be within a certain evidentiary range to survive appellate scrutiny, juries simply choose who among those 'within the range' are punished"). For purposes of our theory, we only need to establish that jury verdicts are considerably less predictable than decisions made by judges.

56 See *JONAKAIT*, *supra* note 9, at 128–35.

57 See *LaFAVE ET AL.*, *supra* note 18, § 22.3(d). The prosecution, however, is not allowed to strike prospective jurors on racial grounds. See *Batson v. Kentucky*, 476 U.S. 79, 89 (1986) (holding that racial discrimination in jury selection offends the Equal Protection Clause); see also *Miller-El v. Dretke*, 125 S. Ct. 2317, 2331–40 (2005) (finding the state's jury selection techniques discriminatory); *Johnson v. California*,

the parties' conjectures about jurors' individual biases.⁵⁸ The effects of these mutual challenges on the jury selection cancel each other out.⁵⁹ Taken together, these factors make the jury's verdict unpredictable. Jurors remaining on the panel can decide the case either way.

David would only be able to predict the verdict if the evidence in his case were one-sided. But it is not. As stated at the outset, the prosecution's case against David is fairly strong, but is not overwhelming. David has evidence that may exonerate him. One-sided evidence is an unlikely scenario in cases that go to trial. Cases featuring one-sided evidence do not normally go to trial. They are settled before trial. When the evidence indisputably supports the defendant's case, the prosecution normally discontinues.⁶⁰ When the evidence indisputably supports the accusations, the defendant normally enters a guilty plea.⁶¹ David's case goes to trial because its evidence is not unequivocal. This evidence may work in both directions. The way in which David's jurors will consider it is unknowable.

David now discovers that in about 50% of the cases similar to his the jury found the defendant guilty. From this information he deduces a 50% probability of being convicted or acquitted. This *general probability*, however, does not attach to David's individual case, in which a new group of jurors will interact with a unique set of evidence. The projected outcome of this individual interaction—a factor that determines the individual probability of David's conviction—is unknowable. The similar-case category, into which David's case falls, is general. This category accommodates several subcategories separated by refined distinctions between the cases.

Assume that these subcategories include Group A and Group B. Cases forming Group A exhibit a 70% rate of convictions and a 30% rate of acquittals. In Group B, the rate of acquittals is 70% and the

125 S. Ct. 2410, 2416–19 (2005) (clarifying the criteria for ascertaining prosecutors' racial motivations hiding behind peremptory strikes).

58 See *Swain v. Alabama*, 380 U.S. 202, 218–20 (1965) (stating that peremptory challenges are extensively used due to the parties' conjectures about jurors' partiality).

59 *Id.* at 219 (stating that one of the functions of peremptory challenges is “to eliminate extremes of partiality on both sides”).

60 When evidence supporting the accusations is plainly insufficient, the prosecution usually drops the case. See *LAFAVE ET AL.*, *supra* note 18, § 13.1(b) (“As a practical matter, the prosecutor is likely to require admissible evidence showing a high probability of guilt, that is, sufficient evidence to justify confidence in obtaining a conviction.”). Alternatively, the judge delivers a directed acquittal. *Id.* § 24.6(b).

61 See *Bibas*, *supra* note 3, at 2497 n.134 (explaining the high rate of guilty pleas by the fact that defense attorneys convince their clients to plead guilty—with and without plea bargaining—in the face of overwhelming evidence).

rate of convictions is, correspondingly, 30%. Other subcategories featuring different projections for David's acquittal and conviction will not change our example: they will cancel out. No identifiable factors bring David's case closer to Group A than to Group B, or vice versa. The probability of this case to fall into Group A, in which David's probability of conviction equals 70%, is unknown. The probability of this case to fall into Group B, in which David's probability of conviction equals 30%, is unknown as well.

These unknown probabilities create a problem⁶² that can be conceptualized by using "second-order probabilities."⁶³ This conceptual-

62 See Ellsberg, *supra* note 39. In this classic article, Ellsberg challenged the basic idea that probabilities always exist by offering the following betting experiment. *Id.* at 650–53. Urn I contains 100 balls, red and black, of unknown composition. Urn II contains fifty red and fifty black balls. Betting on Red-I means that one ball will be drawn at random from Urn I and that you will win \$100, if the ball is red, and \$0 if not. Other available bets, Black-I, Red-II, and Black-II are defined in the same way. Which of the following bets would you prefer: (1) Red-I or Black-I; (2) Red-II or Black-II; (3) Red-I or Red-II; or (4) Black-I or Black-II? Ellsberg predicted that most people would be indifferent between Red-I and Black-I, as well as between Red-II and Black-II. Yet, people generally prefer Red-II to Red-I and Black-II to Black-I. Betting on balls contained in Urn II is a rational preference because such bets are more informative than their Urn-I alternatives. These predictions have been verified in many experiments conducted by empirical economists and cognitive psychologists. See Colin Camerer & Martin Weber, *Recent Developments in Modeling Preferences: Uncertainty and Ambiguity*, 5 J. RISK & UNCERTAINTY 325 (1992) (surveying experiments that verify the existence of ambiguity aversion and a number of theories addressing this phenomenon); Craig R. Fox & Amos Tversky, *Ambiguity Aversion and Comparative Ignorance*, 110 Q.J. ECON. 585, 588–99 (1995) (providing empirical affirmation to the ambiguity-aversion phenomenon in settings featuring both determinable and indeterminable probabilities); Gideon Keren & Léonie E.M. Gerritsen, *On the Robustness and Possible Accounts of Ambiguity Aversion*, 103 ACTA PSYCHOLOGICA 149, 153–57 (1999) (demonstrating that ambiguity aversion holds for both gains and losses); Paul Slovic & Amos Tversky, *Who Accepts Savage's Axiom?*, 19 BEHAV. SCI. 368 (1974) (demonstrating that ambiguity aversion is systematic and does not originate from individuals' misunderstandings of the subject); W. Kip Viscusi & Harrell Chesson, *Hopes and Fears: The Conflicting Effects of Risk Ambiguity*, 47 THEORY & DECISION 153, 167–68 (1999) (demonstrating that individuals are ambiguity averse when facing relatively small probabilities of loss and ambiguity seeking when the probability of loss is high; the average crossover probability is demonstrated to be about 0.5).

63 See Jamil Baz et al., *Risk Perception in the Short Run and in the Long Run*, 10 MARKETING LETTERS 267, 268–69 (1999); Camerer & Weber, *supra* note 62; Ellsberg, *supra* note 39, at 656–60 (observing that ambiguity aversion is a behavioral phenomenon that involves "the operation of definite normative criteria" and introducing different criteria to account for probabilistic ambiguity); Barbara E. Kahn & Rakesh K. Sarin, *Modeling Ambiguity in Decisions Under Uncertainty*, 15 J. CONSUMER RES. 265, 267–68 (1988) (explaining the concept of second-order probability and linking it to ambiguity aversion).

ization differentiates between a first-order probability that describes the likelihood of the event to which it attaches and a second-order probability that determines the reliability of the first-order probability. Second-order probabilities attach to first-order probabilities that, in turn, attach to the relevant events. Formally, when a defendant's general probability of being acquitted by the jury is denoted as a , and when the defendant does not feel sure and is consequently pessimistic about this first-order probability—the defendant multiplies it by another (second-order) probability (p) that identifies the intensity of his belief in a .⁶⁴ The defendant consequently estimates that his probability of conviction does not equal $1 - a$, as would have been the case had he not been ambiguity averse. In the defendant's eyes, this probability equals $1 - pa$. Both p and a are greater than 0 and less than 1 (0 represents the impossibility and 1 the absolute certainty of the underlying factual scenario). Hence, $1 - pa > 1 - a$. This is the crudest, but nonetheless adequate, way of formalizing ambiguity aversion.⁶⁵ Another simple way of doing it is to introduce the appropriate addition to the defendant's probability of conviction.⁶⁶ This addition

64 See FRANK H. KNIGHT, *RISK, UNCERTAINTY AND PROFIT* 227 (1921) ("A man may act upon an estimate of the chance that his estimate of the chance of an event is a correct estimate.").

65 For more sophisticated models see Itzhak Gilboa & David Schmeidler, *Maxmin Expected Utility with Non-Unique Prior*, 18 J. MATHEMATICAL ECON. 141 (1989) (perceiving a nonprobabilistic event as a situation in which the decisionmaker identifies several possible probabilities as applicable to the event and then behaves in accordance with the worst-case scenario: in choosing between the probabilities, the decisionmaker ascribes the lowest possible probability to a favorable outcome and the highest possible probability to an unfavorable outcome); Edi Karni & David Schmeidler, *Utility Theory with Uncertainty*, in 4 HANDBOOK OF MATHEMATICAL ECONOMICS 1763 (Werner Hildenbrand & Hugo Sonnenschein eds., 1991) (surveying formal models that analyze ambiguity aversion in nonprobabilistic events); David Schmeidler, *Subjective Probability and Expected Utility Without Additivity*, 57 ECONOMETRICA 571 (1989) (modeling nonprobabilistic events by nonadditive probabilities, also known as Choquet expected-utility); Uzi Segal, *The Ellsberg Paradox and Risk Aversion: An Anticipated Utility Approach*, 28 INT'L ECON. REV. 175, 177–83 (1987) (modeling uncertainty as a probability distribution over possible values of the true probability).

66 Formally, the value of the gamble " x if event A happens and y if event B happens," where B is not- A , is given by $u(x)\pi(A) + u(y)[1 - \pi(A)]$, when $x < y$; and by $u(y)\pi(B) + u(x)[1 - \pi(B)]$, when $y < x$ (u and π denote "utility" and "probability," respectively). When $\pi(A) + \pi(B) = 1$ —that is, when the relevant probabilities of mutually exclusive events are additive—the ordinary expected utility analysis holds ground. Ambiguity aversion is observable when $\pi(A) + \pi(B) > 1$ —that is, when the probabilities become nonadditive. Assume that in Ellsberg's *Two-Urn* example $\pi(\text{Red-I})$ and $\pi(\text{Black-I})$ both equal 0.6, while $\pi(\text{Red-II})$ and $\pi(\text{Black-II})$ both equal 0.5. Also assume, for the sake of convenience, that $u(0) = 0$ and $u(100) = 100$. The value of each of the Urn-I gambles, Red-I and Black-I, consequently equals $[1 - 0.6] \cdot 100 = 40$,

should represent the defendant's pessimism about his general probability of acquittal. This pessimism is not irrational.⁶⁷ Rather, it is rationally instilled by the indeterminacy of the relevant probabilities.⁶⁸ This informational deficiency reduces the economic value of the defendant's situation.⁶⁹ This situation is inferior to a setting featuring equal, but unambiguous, probabilities of conviction and acquittal.⁷⁰

David's conviction is an event that has a 0.7 first-order probability in Group A and a 0.3 first-order probability in Group B. Each of these probabilities crucially depends on the second-order probability that David attaches to the scenario in which his case falls into Group A as opposed to Group B, or vice versa. Because these second-order probabilities are *objectively* indeterminable, it is possible to assume them to be equal.⁷¹ This assumption holds that David's case is as likely to fall into Group A as into Group B.⁷² This is why it affiliates to a broader category of cases that accommodates these groups as subcategories. This broad category projects a 50% chance for both convic-

while the value of each of the Urn-II gambles, Red-II and Black-II, is $[1 - 0.5] \times 100 = 50$.

67 See Ellsberg, *supra* note 39, at 663. The different attitudes toward this probabilistic indeterminacy (or ambiguity) have nothing to do with risk aversion that represents aversion to fluctuation in the outcomes. In our model, jury and bench trials carry the same set of possible outcomes: an acquittal or, alternatively, a conviction, which we assume for simplicity to carry the same penalty, regardless of the chosen trial mode. Our model also assumes that judges and juries do not differ in their conviction rates *in adjudicating similar cases*. A simple expected-payoff model that evaluates uncertain prospects only by their outcomes and probabilities (regardless of the probabilities' epistemic credentials) is therefore unable to differentiate between jury and bench trials. To properly differentiate between the two trial environments, one needs to distinguish between the probabilities' epistemic credentials. Specifically, one needs to acknowledge that some probabilities are ambiguous and some are not and that people rationally fear probabilistic ambiguity. See *supra* note 39 and accompanying text; *infra* notes 97–100, 108–12 and accompanying text.

68 Legal advice cannot substantially reduce this indeterminacy. We assume throughout this Article that defendants are represented by skillful attorneys. These attorneys, however, can only predict jurors' verdicts in probabilistic terms that are highly ambiguous.

69 Ellsberg, *supra* note 39, at 657.

70 As powerfully explained by Ellsberg, "But having exploited knowledge, guess, rumor, assumption, advice, to arrive at a final judgment that one event is more likely than another or that they are equally likely, one can still stand back from this process and ask: 'How much, in the end, is all this worth?'" *Id.* at 659–60.

71 This assumption derives from the statistical "principle of indifference." See COHEN, *supra* note 1, at 43–47.

72 Under this assumption, David's 50% probability of being convicted is calculated as follows: $(50\% \cdot 70\%) + (50\% \cdot 30\%)$.

tions and acquittals, but David can hardly rely on this generalized projection. He knows that his case either falls into Group A or into Group B. The 50% probability that attaches to each of these scenarios is premised on the absence of reasons that reliably distinguish between Group A and Group B. There are no reasons differentiating between the two groups of similarly looking cases that David can depend upon. Most importantly, David's jurors are not pre-committed to any such reason. They are only committed in general terms to try David's case fairly and impartially.⁷³ Jurors also give no reasons to justify their verdicts.⁷⁴

Unreasoned verdicts are the key factor separating trials by jury from bench trials.⁷⁵ This factor makes David's 50% probability of conviction indeterminable or ambiguous.⁷⁶ David has good reasons to fear this ambiguity. This fear impels David to consider the possibility that the unknown second-order probabilities are not equal. That is, the chance that his case actually belongs to Group A, rather than Group B, may well be above 50%. This pessimistic estimation turns David's prospect of being convicted by the jury into more probable than not.

The prosecution has no similar fears. Because there is no reason to believe that the unknown information about individual cases is

73 See generally JONAKAIT, *supra* note 9, at 128–38 (describing the voir dire and an attorney's right to challenge for cause a potential juror who may not be impartial); SAUL M. KASSIN & LAWRENCE S. WRIGHTSMAN, *THE AMERICAN JURY ON TRIAL: PSYCHOLOGICAL PERSPECTIVES* 26 (1988) (noting that jurors are not *tabula rasa* in a pure sense).

74 See, e.g., HARRY KALVEN, JR. & HANS ZEISEL, *THE AMERICAN JURY* 3 (1966) (observing that the American legal system orders jurors "to carry out deliberations in secret and to report out their final judgment without giving reasons for it"); KASSIN & WRIGHTSMAN, *supra* note 73, at 9 (noting that jurors need not explain their decisions and sometimes are not permitted to discuss improprieties that occur during deliberation).

75 Cf. Harry Kalven, Jr., *The Jury, the Law, and the Personal Injury Damage Award*, 19 OHIO ST. L.J. 158, 178 (1958) ("The judge and jury are two remarkably different institutions for reaching the same objective—fair, impersonal adjudication of controversies. The judge represents tradition, discipline, professional competence and repeated experience with the matter But the endless fascination of the jury is to see whether something quite different—the layman amateur drawn from a wide public . . . —can somehow work as well or perhaps better.").

76 See George Fisher, *The Jury's Rise as Lie Detector*, 107 YALE L.J. 575, 705 (1997) (noticing that the jury's "private and inarticulate decisionmaking protected it from . . . embarrassing public failures" and that "whether by tradition or conscious design, the jury's verdict has been largely impenetrable. There never has been a mechanism by which the defendant or anyone outside the system could command the jury to reveal its decisionmaking processes. The jury's secrecy is an aid to legitimacy, for the privacy of the jury box shrouds the shortcomings of its methods.").

slanted—in a long series of cases—in favor of either Group A or Group B, the prosecution can confidently anticipate that about half of its cases will fall into Group A, with the remainder falling into Group B. The prosecution is a long-run player. It has many cases and therefore can proceed on this assumption. For the prosecution, the rate of convictions versus acquittals is the only thing that matters.⁷⁷ David, however, has only his case to care about. This case determines his fate. David therefore cannot be indifferent about the unknown second-order probabilities. David's fear of this ambiguity forces him to make a pessimistic assessment of the relevant probabilities. He consequently increases the probability of the scenario in which his case falls into Group A. According to David's pessimistic assessment, this second-order probability is greater than 50%. This assessment has crucial implications for David's plea bargaining position vis-à-vis the prosecution. Before analyzing these implications, we complete our discussion of ambiguity aversion as affecting the choice between bench and jury trials.

Unlike juries, judges are committed to reasons that have gained institutional endorsement and affirmation.⁷⁸ These reasons govern and regularize the resolution of both legal and factual issues. A reasoned judgment manifests the judicial commitment to applying similar reasons in future cases.⁷⁹ For judges, treating like cases alike is probably the most fundamental institutional commitment.⁸⁰ Failure to fulfill this commitment is considered institutionally unacceptable and is likely to be criticized and corrected on appeal. Alignment with the institutionally affirmed reasons is also in every judge's individual interest. Failure to align with these reasons tags the judge as idiosyncratic, which may adversely affect her reputation and promotion prospects. A diversion from the institutional path also consumes greater adjudicative efforts and resources than does the replication of a well established institutional routine. Any such diversion increases the judge's workload and keeps her dockets full.

The incentive to clear dockets and demonstrate efficiency also induces judges to adjudicate cases evenhandedly. For example, if a judge takes the prosecution's side in bench trials, defendants appearing before that judge would take an exit by opting for jury trials. The judge consequently would have to manage numerous jury trials. On these trials she would expend more time and effort than on bench

77 Once again, we set high-profile cases aside. See *supra* note 2.

78 See Kalven, *supra* note 75, at 178.

79 See Frederick Schauer, *Giving Reasons*, 47 STAN. L. REV. 633, 648–58 (1995).

80 See RONALD DWORKIN, LAW'S EMPIRE 225–75 (1986).

trials. Jury trials require extensive and elaborate case management on the part of the judge.⁸¹ They involve more ancillary litigation over procedural and evidentiary issues than bench trials.⁸² Jury trials therefore increase the judge's workload and reduce the number of cases that she manages to close.⁸³ The output reduction and the growing backlog make the judge appear inefficient relative to her peers—a factor likely to undermine the judge's reputation and career. Bench trials enable the judge to both maintain and demonstrate efficiency in closing cases. They also enable the judge to enhance her reputation by producing impressive reasoned judgments. The defendant's right to opt for a jury trial therefore induces judges not to engage in practices unattractive to criminal defendants. The prosecution's parallel right induces judges not to develop practices that favor defendants over the prosecution.⁸⁴ These antipodal pressures generate judicial evenhandedness.

To attain and exhibit evenhandedness, judges need to employ a uniform set of reasons for their decisions. Absence of commitment to such reasons signals to litigants that the judge is free to choose any reason for deciding the case. This also indicates that the judge may use her private reasons for making a decision. Such a judge exhibits no commitment to evenhandedness. Facing such a judge, the accused or, alternatively, the prosecution is likely to opt for a jury trial. Adherence to the institutionally affirmed reasons for decisions—the black letter law and the conventional factfinding methodology—is therefore in the interests of every individual judge. By adhering to these reasons, the judge credibly commits herself to evenhandedness. A bench trial before this judge consequently becomes an attractive alternative to a trial by jury. The judge's adherence to institutional reasons also enables litigants (more realistically, their lawyers) to compile a list of her possible decisions and determine the probability of each decision. This probability will generally be unambiguous.

This fundamental feature underscores the advantage of bench trials over trials by jury. Jury verdicts can only be predicted in terms of ambiguous probabilities. Ambiguous probabilities, however, provide

81 See Khanna, *supra* note 12, at 398 n.219.

82 See SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS, *supra* note 12, at 445 tbl.5.43.

83 Dividing the jury-trial and the bench-trial caseloads between different judges does not remove the judges' incentive to clear dockets. In the absence of a plea bargain, judges in charge of jury trials would still have an incentive to elicit bench-trial stipulations from prosecutors and defendants. The consequent increase in the number of bench trials would bring about a reassignment of the cases.

84 Judges have other strong incentives for not exercising a pro-defendant bias in their decisions. See *infra* notes 262–63 and accompanying text.

too slim a foundation for important decisions. Most people would rather not depend upon such probabilities. A person's dependence on an ambiguous probability induces pessimism about the actual probability that attaches to his or her preferred scenario.⁸⁵ The person consequently reduces the probability of that scenario.⁸⁶ In parallel, the person increases the probability of the opposite scenario, unfavorable to him or her.⁸⁷ People making such probability adjustments are ambiguity averse. As an empirical matter, ambiguity aversion is a widespread cognitive phenomenon.⁸⁸ As a normative matter, aversion towards ambiguity is a rational epistemic attitude.⁸⁹

To see why it is rational for a person to be ambiguity averse consider the following example. David chooses between two lotteries. The first lottery uses a box containing red and white balls that the participants cannot see. The box is filled with these balls randomly by an automatic feeder. The number of red and white balls in the box is unknown. David will win this lottery and receive a \$100 prize if he is lucky enough to pull a red ball from the box. The second lottery is similar to the first in every respect except one: its box contains fifty red and fifty white balls. David knows about it (as do all other participants in the lottery). To participate in the first lottery, David needs to purchase a \$30 admission ticket. An admission ticket to the second lottery costs \$35. Both are bargain prices. By paying one of these prices, a participant obtains an expected return in the amount of \$50 (the \$100 prize multiplied by the 50% probability of winning that prize). David can only participate in one of these lotteries and, therefore, needs to choose between the two.

David does what many, if not most, ordinary people do. He prefers Lottery II over Lottery I. In each of these lotteries, David's probability of pulling out a red ball equals 50%. His expected payoff thus appears to be \$20 $[(50\% \cdot \$100) - \$30]$ for Lottery I and \$15 $[(50\% \cdot \$100) - \$35]$ for Lottery II. This implies that David should prefer Lottery I over Lottery II, but he does exactly the opposite. Why?

David opts for a \$15 payoff because its alternative—the \$20 payoff—depends on a probability qualitatively inferior to the probability

85 See *supra* notes 38, 61–69 and accompanying text.

86 See *supra* notes 38, 61–69 and accompanying text.

87 See *supra* notes 38, 61–69 and accompanying text.

88 See *supra* notes 38, 61–69 and accompanying text; see also Terrence Chorvat et al., *Law and Neuroeconomics*, 13 SUP. CT. ECON. REV. 35, 51–52 (2005) (pointing out that neurological evidence gives some explanation as to why people tend to be ambiguity averse).

89 See *supra* notes 38, 63–64.

that he chooses to proceed upon. The 50% probability that attaches to David's prospect of winning Lottery I is ambiguous. The 50% probability that attaches to David's prospect of winning Lottery II is not. This factor differentiates between the two probabilities and the two lotteries. Chicago economist Frank Knight would have tagged Lottery I an *uncertain* enterprise and Lottery II an enterprise under *risk*.⁹⁰ In philosophers' taxonomy, the 50% probability that attaches to David's prospect of winning Lottery I is nonresilient and not weighty.⁹¹ The 50% probability that attaches to David's prospect of winning Lottery II is invariant.⁹² Therefore, it is both weighty and sufficiently resilient to rely upon.⁹³

The 50% probability that attaches to David's prospect of winning Lottery I is nonresilient for a good reason. Virtually any addition of information that affects David's prospect of winning Lottery I will change this probability. The only addition of relevant information that would keep this probability unchanged is one that demonstrates that the box contains an equal number of red and white balls. This additional information would align Lottery I with Lottery II. Without this information, the probability attaching to David's prospect of winning Lottery I still equals 50%. This probability, however, rests on a problematic assumption. This assumption holds that the unknown information about the number of red and white balls in the lottery box is not slanted. In reality, 70% of the balls in the box may either be red or white, with the remaining 30% of the balls being, respectively, white or red. Both scenarios appear equally plausible because there is no evidence that affirmatively favors either of them. The two scenarios therefore cancel each other out, as do all other parallel scenarios featuring an unequal distribution of red and white balls. David's probability of winning Lottery I by drawing a red ball from the box consequently equals 50%.

90 See KNIGHT, *supra* note 64, at 19–20, 197–232 (distinguishing between randomness with knowable probabilities, conceptualized as “risk,” and randomness with unknowable probabilities, conceptualized as “uncertainty”).

91 See, e.g., JAMES LOGUE, PROJECTIVE PROBABILITY 78–95 (1995) (articulating the concepts of “weight” and “resiliency,” as applied to probabilities); Neil B. Cohen, *Confidence in Probability: Burdens of Persuasion in a World of Imperfect Knowledge*, 60 N.Y.U. L. REV. 385, 397–400 (1985) (describing how a factfinder's confidence in the true value of a given probability affects whether the burden of persuasion is satisfied by a preponderance of the evidence).

92 See ROBERT NOZICK, INVARIANCES: THE STRUCTURE OF THE OBJECTIVE WORLD 75–90, 99 (2001).

93 See Peter Gärdenfors & Nils-Eric Sahlin, *Unreliable Probabilities, Risk Taking, and Decision Making*, 53 SYNTHESE 361, 361–63 (1982).

This reasoning applies the principle of indifference, identified earlier in this Article.⁹⁴ As explained long ago by John Maynard Keynes,

The Principle of Indifference asserts that if there is no *known* reason for predicating of our subject one rather than another of several alternatives, then relative to such knowledge the assertions of each of these alternatives have an *equal* probability. Thus *equal* probabilities must be assigned to each of several arguments, if there is an absence of positive ground for assigning *unequal* ones.⁹⁵

These observations explain why the ambiguity problem attaches to Lottery I, but not to Lottery II. Lottery II involves a regular gambling risk. Lottery I features a combination of gambling and epistemic risks.⁹⁶ David's willingness to give away \$5 to eliminate the epistemic risk exhibits his aversion towards ambiguity. Any amount above \$30 that David is ready to pay in order to participate in Lottery II, as opposed to Lottery I, makes him ambiguity averse. David's aversion towards ambiguity makes him pessimistic in assessing his probability of winning Lottery I. David therefore reduces this probability by 5% (from 50% to 45%). For him, the expected return from Lottery I is therefore \$15 $[(45\% \cdot \$100) - \$30]$ —exactly the same amount as in Lottery II.

David's ambiguity aversion is perfectly rational. Lottery I offers its participants less information than does Lottery II. Expending \$5 on information about the actual distribution of red and white balls in the box is a good move, given the expected \$15 gain that this move brings about.

Ambiguity aversion and aversion towards risk are not the same. Risk aversion relates to uncertain outcomes. Ambiguity aversion attaches to indeterminate probabilities. A prospect feared by a risk-averse person does not become brighter when its ambiguous probability, roughly estimated as 50%, turns into a probability that unambiguously equals 50%. For an ambiguity-averse person, this transformation makes a difference. A risk-neutral person is ready to pay up to \$50 to participate in Lottery II (assuming, of course, that the bargain price of \$35 is not on the table). For a risk-neutral person, having \$50 and having a 50% prospect of obtaining \$100 are the

94 See *supra* note 71 and accompanying text.

95 JOHN MAYNARD KEYNES, A TREATISE ON PROBABILITY 42 (1929). For a contemporary philosophical analysis of the indifference principle, see COHEN, *supra* note 1, at 43–47.

96 See Gärdenfors & Sahlin, *supra* note 93, at 364–73.

same.⁹⁷ When a person is only willing to pay less than \$50 for the right to participate in Lottery II, he or she is risk averse.⁹⁸ Inversely, a person's readiness to pay more than \$50 for participation in that lottery makes him or her a risk lover.⁹⁹ All this has nothing to do with people's aversion towards ambiguity. A risk-neutral person may be ambiguity averse. Any such person would prefer Lottery II over Lottery I because Lottery II features an unambiguous probability. Being pessimistic about ambiguous probabilities, such a person would reduce her probability of winning Lottery I. Correspondingly, she would increase her probability of not winning that lottery. If that person's ambiguity aversion is as intense as David's, she would only be willing to pay \$45 in order to participate in Lottery I. For that person, the probability of winning Lottery I is 45% (50% minus the 5% deduction, impelled by the person's ambiguity aversion). Correspondingly, the expected value that the person would ascribe to that lottery is \$45 (45% · \$100). Note, however, that this person still remains risk neutral. She keeps that status by being willing to pay \$50 for the right to participate in Lottery II. If this person were averse towards risk, she would be unwilling to pay this amount.¹⁰⁰

For a risk-averse person, being a defendant in a criminal bench trial and being a defendant in a criminal jury trial are equally bad (assuming that the expected penalty is the same in both cases). An ambiguity-averse person, however, would prefer a bench trial to a trial by jury. He would act upon this preference not only when he is risk averse, but also when he is risk neutral.

To relate our discussion to plea bargaining, we now demonstrate how ambiguity aversion may become asymmetric. For that purpose, we introduce another actor, Lee, who participates in thousands of lotteries identical to Lottery I. Unlike David, Lee pays the market price for the right to participate in each lottery. The unknown information about the distribution of the balls in each lottery box is not slanted in any direction. In the long run, Lee therefore rationally expects to

97 See, e.g., RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* 10–11 (6th ed. 2003) (explaining neutrality and aversion towards risk).

98 *Id.*

99 *Id.* at 11.

100 Formally, a person is risk averse when $up(x) < u(px)$. In this formulation, u represents the person's utility; x is the value of an asset that the person may obtain; and p is the person's probability of obtaining that asset. This formulation portrays a person who prefers px dollars in her pocket over the prospect of obtaining x dollars, to which probability p attaches. A person is risk neutral but ambiguity averse when $up(x) = u(px)$, but only if p is unambiguous. If p is ambiguous, the person substitutes it with a lower probability, say q , and the rest is the same as before: $uq(x) = u(qx)$.

recover \$50,000 from 1,000 lotteries. For her, paying any amount below \$50,000 for the right to participate in those lotteries is attractive. For that reason, Lee—a repeat player—is ready to pay any amount less than \$50 for the right to participate in any individual lottery. She finds Michael, who only participates in a single Lottery I game, for which he already paid \$50. Michael made that payment before becoming averse towards ambiguity. Similarly to David, Michael estimates his probability of winning Lottery I as 45%. For him, therefore, the expected utility that this lottery brings about is \$45. This means that Michael expects to lose \$5. Aware of all this, Lee offers Michael to buy his right to participate in Lottery I for \$47. Michael readily accepts that offer. By this transaction Michael reduces his expected disutility from -\$5 to -\$3. Michael, therefore, is happy about this transaction even though he knows that Lee exploited his ambiguity aversion to increase her earnings. Michael, however, would have been unhappy if he were compelled to participate in Lottery I and pay \$50 for it. For obvious reasons, such compulsions are both unfair and inefficient.

The setting in which Lottery I turns into a duty—and a person is forced to pay \$50 for participation in that lottery—is an abstract, but nonetheless faithful, depiction of positive law. Jury trial is not a lottery. But it does have a feature that makes it similar to Lottery I. This feature is the inherently ambiguous probability of jury verdicts. Under federal law and in many state jurisdictions, jury trial is obligatory for defendants.¹⁰¹ Defendants cannot opt for a bench trial unilaterally. For this wish to be granted, the prosecution needs to consent to a bench trial and the judge needs to approve it.¹⁰² This arrangement is unfair and potentially inefficient. This is so because the prosecution can opt for a jury trial and play against the defendant the same strategy that Lee played against Michael. The prosecution is a repeat player in jury trials as much as Lee is a repeat player in Lottery I. We now return to David and his criminal trial to demonstrate how the prosecution can exploit its repeat-player advantage by forcing defendants into unfavorable plea bargains.

II. EXPLOITING THE ASYMMETRY: THE PROSECUTION'S ABILITY TO FORCE DEFENDANTS INTO UNFAIR AND INEFFICIENT PLEA BARGAINS

The prosecution indicts David for a felony punishable as follows:

101 See *supra* notes 14–15 and accompanying text.

102 See FED. R. CRIM. P. 23(a)(2)–(3) (conditioning the defendant's request for a switch to a nonjury trial on the government's consent and the court's approval).

1. Punishable by 120 months of imprisonment if the jury finds aggravating circumstances (Crime A)
2. Punishable by 60 months of imprisonment if the jury finds no aggravating circumstances (Crime B)
3. Punishable by 40 months of imprisonment if the jury finds mitigating circumstances (Crime C)

The jury can convict David of any of those crimes. In the past, jurors have convicted $1/4$ of defendants of Crime A, $1/4$ of Crime B, and $1/4$ of Crime C. The remaining defendants (also $1/4$) were acquitted. No other information is available.

The prosecutor will attempt to establish that David committed Crime A. Alternatively, she will attempt to establish that David committed either Crime B or Crime C. David will attempt to establish his innocence. Alternatively, he will try to convince the jury to convict him of Crime C or, in the worst scenario, of Crime B. The jury may decide the case either way. Neither David nor the prosecutor has reasons for holding one of these scenarios more likely than its alternatives. David's situation can thus be analogized to a lottery box that contains an unknown number of white, red, yellow, and pink balls thrown in randomly by an automatic feeder. David must pick one of the balls without seeing it. If he picks a white ball, he would be exonerated completely. Convictions for Crimes A, B, and C respectively attach to red, yellow, and pink balls. David's probability of drawing a white ball is $1/4$, and the same goes for any other color. Similarly to all other participants in this lottery—criminal defendants situated similarly to him—David gambles against the prosecution. For him and other defendants, this lottery is compulsory. Being a repeat player, the prosecution has an assurance that 75% of all defendants will be convicted: $1/4$ will assume liability for Crime A; $1/4$ for Crime B; and $1/4$ for Crime C. The prosecution does not care whether these convicted defendants will include David. If David is not going to be among these defendants, another defendant will replace him. For David, however, as for any other individual defendant, there is only one lottery which he will either win or lose.

David's expected penalty equals fifty-five months of imprisonment: $(1/4 \cdot 120) + (1/4 \cdot 60) + (1/4 \cdot 40) + (1/4 \cdot 0)$. David knows it, and the prosecution knows it too. David is ambiguity averse, a condition that the prosecution is also well aware of. The prosecution offers David a plea bargain that allows him to remove the Crime A accusation by admitting the commission of Crime B. If accepted, this bargain would send David to prison for sixty months. This punishment exceeds David's expected penalty.

David fears the ambiguity of the relevant probabilities. These probabilities are not sufficiently weighty. Nor are they sufficiently resilient or invariant. Virtually any addition of information as to how David's jurors might decide the case would change these probabilities. In technical terms, David cannot rely on the general first-order probabilities ($1/4$) that attach to each of his conviction and acquittal scenarios. This is so because David does not know whether these probabilities—as related to his individual case—are correct. This informational void induces David to fear the worst scenario. This fear prompts David to adjust the probability of his possible conviction of Crime A upwards. To reflect his fear and ignorance, David sets this probability on $1/3$ and also modifies the probabilities of the remaining scenarios. These modifications include the following:

1. David's probability of being convicted of Crime B is $1/3$.
2. David's probability of being convicted of Crime C is $1/6$.
3. David's probability of being acquitted also happens to be $1/6$.

Based on these estimations, David expects to go to prison for sixty-seven months: $(1/3 \cdot 120) + (1/3 \cdot 60) + (1/6 \cdot 40) + (1/6 \cdot 0)$. For him, the prosecution's offer is attractive and he therefore accepts it.

As a result of this plea bargain, David is convicted of a crime that he probably did not commit and endures punishment that he does not deserve. This outcome is both unjust and inefficient. David suffers injustice because the state deliberately imposes on him an excessive criminal sanction.¹⁰³ David's conviction is inefficient for two reasons. Both reasons have to do with erroneous impositions of criminal liability. The first reason is the chilling effect generated by an erroneous imposition of criminal liability. The prospect of being erroneously held liable for a crime discourages activities associated with this prospect. Some of these chilled activities are socially beneficial. For example, a civil servant facing the prospect of erroneous conviction for taking bribes may decide to resign and seek other employment. The second reason is the erosion of the difference between complying and not complying with the law. Facing an erroneous im-

103 See ALEX STEIN, FOUNDATIONS OF EVIDENCE LAW 172–78 (2005) (introducing the “equal best” standard, under which a legal system can justifiably convict a person only if it did its best in protecting that person from the risk of erroneous conviction and if it does not provide better protection to other individuals); see also RONALD DWORKIN, A MATTER OF PRINCIPLE 72, 79–88 (1985) (explaining that a wrongful conviction of a person that is deliberate, rather than merely accidental, is unjust in that it inflicts on the person a distinct moral harm; this harm is the person's discriminatory treatment that violates the state's fundamental obligation to treat citizens with equal concern and respect).

position of criminal liability, a person may decide to avoid it by engaging in a different criminal conduct that brings about a better tradeoff between liability and benefits.¹⁰⁴ Consider again a civil servant who faces the prospect of erroneous conviction for taking bribes. Assume that the expected disutility associated with this prospect is -500 (this amount is calculated by multiplying the person's probability of being erroneously convicted by the applicable penalty and other repercussions).¹⁰⁵ The person can eliminate this prospect by quitting his job. The person, however, considers this alternative unattractive because it produces a loss that exceeds 500 disutility units. The person therefore considers another course of action: quitting the job after stealing a large amount of money. This prospect promises the person the lowest expected amount of disutility, say, -450.¹⁰⁶ The person consequently steals the money, which he would not do if his initial position—in disutility units—were 0, rather than -500.¹⁰⁷

The prosecution may exacerbate these deleterious effects by playing a snowball strategy against defendants. David's ambiguity-averse calculation makes him think that his expected punishment is sixty-seven months of imprisonment. In negotiating plea bargains with defendants situated similarly to David, the prosecution can push the negotiated penalty towards this upper limit. Using Crime B and its sixty months jail term as a fallback standard for plea bargains, the prosecution may offer a pretrial bargain only to those defendants who agree to a more severe punishment. Negotiations with other defendants can be put on hold until their trials begin. For these defendants, sixty-seven months of imprisonment will remain the expected punishment (subject to unusual and unanticipated developments). Any such defendant therefore will accept a sixty-month jail-term bargain in the eve of the trial, should the prosecution offer him such a bargain. Some defendants, however, will be willing to avoid trial and save their trial expenses. They will opt for an early bargain with the prosecution.

104 See A. Mitchell Polinsky & Steven Shavell, *The Economic Theory of Public Enforcement of Law*, 38 J. ECON. LITERATURE 45, 60–62 (2000) (drawing on Ivan P.L. Png, *Optimal Subsidies and Damages in the Presence of Judicial Error*, 6 INT'L REV. L. & ECON. 101 (1986) (demonstrating formally that erroneous convictions dilute deterrence by eroding the difference between the penalties expected from violating the law and from not violating it)).

105 This disutility amount represents the person's losses of freedom, money, and reputation brought about by his conviction and punishment.

106 The person calculates this amount by multiplying his probability of being apprehended and convicted as a thief by the applicable punishments (both legal and social). Subsequently, he reduces this negative sum (say, -1000) by the stolen amount (say, 550).

107 We borrow this example from STEIN, *supra* note 103, at 106 n.85.

These defendants will raise the going imprisonment rate for plea bargains from sixty months to a longer period. The prosecution will subsequently use the new rate as a fallback standard for new plea bargains, offering a pretrial bargain only to those defendants who agree to a more severe punishment. As previously, defendants sticking to the going rate will be put on hold. The new imprisonment rate will intensify the defendants' fear and the corresponding aversion towards ambiguity. This dynamic will repeat itself again and again. Ultimately, defendants will routinely plea bargain for sixty-seven months in jail.

These scenarios are unlikely to materialize in a bench trial. Bench trials are not as unpredictable as jury trials. There is no certainty that a judge will decide the case in some particular way. There is, however, virtual certainty that the judge will decide the case by reasons that are institutionally affirmed and generally accessible. As already explained, this commitment is credible enough to rely upon.¹⁰⁸ This factor allows litigants and their attorneys to attach a determinate probability to every decision that the judge may make. These probability assessments are weighty, resilient, and invariant. These assessments (the first-order probabilities) are likely to be correct. Their probability of correctness (the second-order probability) is high as well.

If David opted for a bench trial, he could depend on the probabilities that attach to his conviction and acquittal scenarios. Based on these probabilities, David could have predicted that the judge is unlikely to find him guilty of Crime A. David also could have predicted that the judge is unlikely to exonerate him completely. He therefore would have estimated that the judge will be looking for a midway solution. This reasoning could stabilize the relevant probabilities for David and make them dependable. David therefore would only have agreed to a plea bargain that offered him fifty-five months of imprisonment or less. Aware of all the above factors, the prosecution would probably have offered David such a bargain. David's opting for a jury trial was a big mistake.

We underscore once again that the distortion from which David suffers could *not* be produced by his possible aversion towards risk. For a risk-averse defendant, there is no difference between being tried by a judge and being tried by a jury. When the expected penalty is the same in both cases, a jury trial and a trial by a judge are equally suitable. The defendant's probability of being acquitted by a judge still remains weightier and more resilient than the probability of his ac-

108 See *supra* notes 84–85 and accompanying text.

quittal in a jury trial. This difference, however, only matters to ambiguity-averse defendants, not to defendants exhibiting aversion towards risk alone.

Moreover, a defendant's aversion towards risk—as opposed to ambiguity—is systematically reduced by a set of legal rules that minimize the risk of erroneous conviction. This risk is reduced by the constitutional requirement that the prosecution prove its case against the defendant beyond all reasonable doubt.¹⁰⁹ This risk is also reduced by the exclusion of hearsay and character evidence that the prosecution could otherwise offer to prove the defendant's guilt¹¹⁰ and by the defendant's general protection against unfair prejudice.¹¹¹ Asymmetric risk aversion therefore is only a problem for guilty defendants, and justifiably so. Risk aversion does not constitute a serious problem for innocent defendants because their risk of conviction is minimal. An innocent defendant would hardly plea bargain for conviction when the probability of his acquittal is both substantial and unambiguous (as typically is the case in a bench trial). Asymmetric ambiguity aversion, however, is a problem for innocent defendants. An innocent defendant might plea bargain for conviction when the probability of his acquittal is substantial but ambiguous (as typically is the case in a jury trial).

As already explained, a defendant may be both risk neutral and ambiguity averse. Facing a known risk, he may keep his optimism and pessimism at a balance. For such a defendant, the expected penalty is the highest sentence that he would plea bargain for. The same defendant, however, becomes more pessimistic about the probability of his acquittal when this probability is ambiguous. This defendant would plea bargain for a sentence that exceeds the expected penalty. For such defendants, innocent and guilty alike,¹¹² the practical implications of our theory are substantial.

Finally, a defendant with aversion towards risk may also be ambiguity averse. Facing a criminal bench trial, such a defendant would fear his conviction prospect more than justified by the expected penalty (the probability of the defendant's conviction multiplied by the

109 See STEIN, *supra* note 103, at 172–78 (discussing the beyond-all-reasonable-doubt requirement, its constitutional origin, and its minimizing effect on the risk of erroneous conviction).

110 *Id.* at 183–208 (explaining the pro-defendant system of admissibility rules).

111 See *Bruton v. United States*, 391 U.S. 123, 137 (1968) (holding that Constitution requires courts to shield the defendant from any substantial spillover effect that inadmissible evidence might produce).

112 We assume that there are good reasons for not convicting a guilty defendant when the evidence does not warrant it.

punishment). The defendant would consequently plea bargain for a punishment that exceeds the expected penalty. He would, however, agree to an even more severe punishment when facing a jury trial. The probabilistic indeterminacy accompanying this trial mode would expand the range of probabilities attaching to the defendant's conviction. This expansion would further intensify the defendant's fear of his conviction prospect. For such defendants, the practical implications of our theory are most significant as well.

III. OFFSETTING THE ASYMMETRY: THE RULE AGAINST DOUBLE JEOPARDY, ASYMMETRIC APPEALS, AND THE RIGHT TO GRAND JURY

Two mechanisms, both set by the Constitution's Fifth Amendment, attenuate the effects of the asymmetric ambiguity aversion. These mechanisms include the prohibition of double jeopardy¹¹³ and the grand jury review of indictments.¹¹⁴

The rule against double jeopardy prevents criminal retrial.¹¹⁵ After facing the conviction prospect once, the defendant cannot face it again in relation to the same offense.¹¹⁶ In jury trials, jeopardy attaches when the jury is empaneled and sworn.¹¹⁷ In bench trials, jeopardy attaches after the first witness has taken oath.¹¹⁸ Subsequently, if the prosecution fails to obtain conviction for whatever reason, except for a mistrial¹¹⁹ or its equivalents,¹²⁰ it cannot appeal. When the judge makes a wrong decision in the defendant's favor—say, by erroneously ruling inadmissible the key prosecution's evidence—and the jury subsequently acquits the defendant, this acquittal cannot be re-

113 See *supra* note 17.

114 See *supra* notes 20–23 and accompanying text.

115 See LAFAYE ET AL., *supra* note 18, § 25.1(a)–(c).

116 For the definition of the “same offence,” see *id.* § 25.1(f). The treatise explains that, subject to separate-sovereign prosecutions, two offenses classify as similar for double jeopardy purposes when their elements overlap each other completely. *Id.*

117 See *Crist v. Bretz*, 437 U.S. 28, 38 (1978) (“The federal rule that jeopardy attaches when the jury is empaneled and sworn is an integral part of the constitutional guarantee against double jeopardy.”).

118 See *Willhauck v. Flanagan*, 448 U.S. 1323, 1325–26 (1980); *Crist*, 437 U.S. at 37 n.15; *Serfass v. United States*, 420 U.S. 377, 388 (1975).

119 See LAFAYE ET AL., *supra* note 18, § 25.1(g)(4). The mistrial needs to be justified as a “manifest necessity” or voluntarily consented to by the defendant. *Id.* § 25.2(a)–(c).

120 See *Lee v. United States*, 432 U.S. 23, 30–31 (1977) (noting that the critical inquiry is whether the order entered ends all prosecution of the defendant for the charge); LAFAYE ET AL., *supra* note 18, § 25.2(f) (stating that *Lee* indicates that dismissal is equivalent to mistrial in some circumstances).

versed because the defendant can no longer be tried for the same offense.¹²¹ A directed acquittal erroneously entered by the judge after jeopardy had attached is also not appealable.¹²² Such an acquittal cannot even be reconsidered by the same judge, unless she entered it expressly as a tentative decision open for reconsideration.¹²³ Similarly, when the judge erroneously dismisses the charges after jeopardy had attached, this decision becomes final. It bars the defendant's re-trial in the same way as do acquittals and convictions.¹²⁴

This doctrine creates an asymmetric appeal system. The prosecution cannot appeal against acquittals and dismissals of charges after jeopardy has attached. Criminal defendants, however, can always appeal against their convictions.¹²⁵ This system skews trial errors in a pro-defendant direction.¹²⁶ Errors that benefit defendants vastly outnumber the pro-prosecution errors.¹²⁷

This dynamic evolves in the following way. For reasons already given,¹²⁸ trial judges fear reversals and seek to avoid them.¹²⁹ The reversal prospect depends on appeals. Trial judges therefore tend to reduce both the number of appeals targeting their decisions and the appeals' chances to succeed. Because the prosecution generally cannot appeal, the trial judge's best strategy to avoid reversal is to resolve every contestable legal issue in the defendant's favor.¹³⁰ The judge

121 See LAFAVE ET AL., *supra* note 18, § 25.3(b).

122 See *Sanabria v. United States*, 437 U.S. 54, 63–78 (1978); see also LAFAVE ET AL., *supra* note 18, § 25.3(c) (discussing *Sanabria*).

123 See *Smith v. Massachusetts*, 125 S. Ct. 1129, 1135–38 (2005).

124 See LAFAVE ET AL., *supra* note 18, § 25.3(a).

125 See Stith, *supra* note 19, at 8–14 (describing the asymmetric system of criminal appeals under the double-jeopardy prohibition).

126 *Id.* at 19–24.

127 *Id.* at 17.

128 These reasons virtually guarantee judges' alignment with the institutional criteria for decisionmaking. See *supra* notes 78–80 and accompanying text.

129 See POSNER, *supra* note 97, at 543 (noting that judges are prestige maximizers and are sensitive to being reversed by a higher court); Richard A. Posner, *Judicial Behavior and Performance: An Economic Approach*, 32 FLA. ST. U. L. REV. 1259, 1271 (2005) (mentioning reversal rate amongst indicators of judicial promotion-affecting performance and stating that “[j]udges also do not like to be reversed, even though a reversal has no tangible effect on a judge’s career if he is unlikely to be promoted to the court of appeals in any event” (footnote omitted)); see also Emery G. Lee III, *Horizontal Stare Decisis on the U.S. Court of Appeals for the Sixth Circuit*, 92 KY. L.J. 767, 771 (2004) (noting that judges “may fear reversal by a higher court and may harbor ambitions for higher office”).

130 To avoid reputational damage, the judge needs to remain unbiased in resolving issues settled by bright-line rules. This strategy will keep the judge’s decisions within the bounds of societal and professional acceptability.

consequently introduces a pro-defendant bias in sampling precedent and in applying the law—evidence law in particular—to the case at hand.¹³¹ From the conflicting upper-court decisions, she selects the decision that favors the defendant.¹³² For example, in ruling on the admissibility of the defendant's confession under the "voluntariness" standard,¹³³ the judge interprets the "totality of circumstances" that determines the issue¹³⁴ in the light most favorable to the defendant.¹³⁵ The fear of reversal prompts judges to exercise the same bias in hearsay rulings; for example, in deciding whether an assertion implied from a person's conduct was "intentional" and therefore constitutes hearsay.¹³⁶ Hearsay rulings and determination of confessions' "voluntariness" are representative examples of many court decisions that practically determine the outcome of the trial. Together with the precedent sampling that systematically favors defendants, the *indiscriminate* pro-defendant slant in these and other evidential rulings produces an unjustified reduction in the general rate of convictions.¹³⁷ This reduction is different from the effect of other procedural and evidential rules—such as the criminal proof standard—that rationally account for the possibility of innocence.

131 See Stith, *supra* note 19, at 18–24, 36–42 (describing and analyzing this tendency along with its partial mitigation by the judges' incentive to preserve some legal issues for appellate review).

132 See *id.* at 20–21 (describing and analyzing the pro-defendant bias in the trial judges' sampling of precedents).

133 At common law and under the Due Process Clause of the Fourteenth Amendment, the defendant's confession is only admissible when made "voluntarily." See LAFAYE ET AL., *supra* note 18, § 6.2(b)–(c).

134 See *id.* § 6.2(c) (stating and illustrating the principle requiring judges to examine the "totality of circumstances" surrounding each confession in determining whether the defendant made it "voluntarily").

135 See Stith, *supra* note 19, at 9–12 (explaining how overestimating or underestimating the voluntariness of a confession results in a pro-government or pro-defendant error).

136 See FED. R. EVID. 801(a)(2) (defining "statement" that may fall under the definition of "hearsay" as including "nonverbal conduct of a person, if it is intended by the person as an assertion").

137 See Stith, *supra* note 19, at 50. Vikramaditya Khanna argues that the asymmetric appeal system actually induces the prosecution to prosecute the defendant more zealously by expending on the trial more efforts and other resources than it would expend if it could appeal against acquittals and dismissals (after jeopardy had attached). Khanna, *supra* note 12, at 374. We do not see, however, how the availability of appeal changes the prosecution's incentive to do its very best at the trial. The prosecution's underperformance at the trial would reduce its chances to succeed on appeal. An appellant can only complain about the judge's errors, not about the flaws in his or her own trial performance.

Arguably, trial judges can offset this probability reduction by introducing a pro-prosecution bias in their discretionary rulings. These rulings are generally immune from the appellate review.¹³⁸ In making them, trial judges therefore need not fear reversal. These rulings admit and exclude crucial evidence. They balance evidence's probative value against its prejudicial effect;¹³⁹ determine whether an expert's testimony is sufficiently reliable under the *Daubert* criteria;¹⁴⁰ and these, once again, are just the most salient examples of the trial judges' discretionary decisions to which appellate courts defer.

Despite this deference, slanting discretionary decisions in the prosecution's favor would not be in the judges' interest. First, to the extent it exhibits a systematic bias, this slanting may in the end trigger the appellate court's intervention. Second, judges care about their reputation.¹⁴¹ An unscrupulous pro-prosecution slanting of a judge's discretionary decisions might damage her reputation. Finally, trial judges do not only want to avoid reversals. As already mentioned, they also want to reduce the number of appeals against their decisions. A

138 Appellate courts reverse such rulings only upon finding an "abuse of discretion" by the trial judge, typically defined as "'an arbitrary, capricious, whimsical, or manifestly unreasonable judgment.'" *United States v. Hernandez-Herrera*, 952 F.2d 342, 343 (10th Cir. 1991) (quoting *United States v. Cardenas*, 864 F.2d 1528, 1530 (10th Cir. 1989)); see also *United States v. Gabaldon*, 389 F.3d 1090, 1098 (10th Cir. 2004).

139 See FED. R. EVID. 403 ("Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence."); *Hernandez-Herrera*, 952 F.2d at 343 (applying a deferential standard to the question of authentication of evidence); CHRISTOPHER B. MUELLER & LAIRD C. KIRKPATRICK, EVIDENCE 174 (3d ed. 2003) ("Trial judges are given broad discretion in applying FRE 403. It is generally held that their rulings are entitled to 'substantial deference' on appeal and are reversed only for 'clear abuse' of discretion."); see also FED. R. EVID. 609(a) ("[E]vidence that an accused has been convicted of . . . a crime shall be admitted [to impeach him as a witness] if the court determines that the probative value of admitting this evidence outweighs its prejudicial effect to the accused . . ."); *United States v. Martinez-Martinez*, 369 F.3d 1076, 1088 (9th Cir. 2004) ("Evidentiary rulings under Fed.R.Evid. 609 are reviewed under the abuse of discretion standard."); *United States v. Jimenez*, 214 F.3d 1095, 1097-98 (9th Cir. 2000) ("The district court's evidentiary rulings under Rule 609(a) are reviewed for an abuse of discretion.").

140 See *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592-95 (1993) (laying down a set of reliability-based criteria for determining the admissibility of scientific expert testimony); see also *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999) (extending *Daubert's* gatekeeping criteria to all kinds of expert testimony). The standard for reviewing *Daubert* rulings on appeal is abuse of discretion. See *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 138-39 (1997).

141 See POSNER, *supra* note 97, at 543.

large number of defendants' appeals may undermine the judge's reputation for evenhandedness. Also, the greater the number of appeals against the judge's decisions, the greater the chances that one such appeal will succeed.¹⁴² An increase in the number of appeals makes the judge's reversal prospect more probable than before.¹⁴³ Finally, a judge's reputation as biased in the prosecution's favor would induce defendants to opt for jury trials—a costly consequence that judges generally want to avoid. Trial judges therefore are unlikely to slant their discretionary decisions in the prosecution's favor. The unmeritorious reduction of the conviction rate therefore stays uncut.¹⁴⁴

Prosecutors and defendants take this general probability reduction into account. This probability reduction affects plea bargains. Not justified by the merits, this probability reduction makes the defendant's conviction prospect less likely than it should be. This reduction therefore counterbalances the upward adjustment that an ambiguity-averse defendant introduces into his probability of being convicted by the jury. The extent to which it does so is unclear. Complete setoff does not appear to be a realistic possibility.

The grand jury mechanism abates the effects of the asymmetric ambiguity aversion in a different way. This mechanism disambiguates the defendant's probability of being convicted by the jury.¹⁴⁵ The resulting disambiguation, however, is only partial.

142 As observed by Kate Stith, "The dynamic effect of the one-way pressure on appellate courts also tends to move appellate law inexorably in a pro-defendant direction." Stith, *supra* note 19, at 26–27.

143 See *id.* at 26.

144 The asymmetric-ambiguity-aversion problem can be mitigated by *any* indiscriminate reduction of the conviction rate. The rule against double jeopardy, however, is the only legal mechanism that has this effect. All other rules of criminal procedure and evidence separate between the guilty and the innocent. See, e.g., Daniel J. Seidmann & Alex Stein, *The Right to Silence Helps the Innocent: A Game-Theoretic Analysis of the Fifth Amendment Privilege*, 114 HARV. L. REV. 430, 467–70 (2000) (demonstrating that the right to silence induces guilty criminals not to pool with innocents by making false exculpatory statements).

145 We assume that the grand jury adequately performs its role. This normative assumption is supported by empirical facts. See *United States v. Cotton*, 535 U.S. 625, 634 (2002) ("Respondents emphasize that the Fifth Amendment grand jury right serves a vital function in providing for a body of citizens that acts as a check on prosecutorial power. No doubt that is true."); LAFAYE ET AL., *supra* note 18, § 15.3(b) (demonstrating that grand jurors generally perform their screening role). Another view maintains that grand jurors rubberstamp the prosecution's indictment requests. See *In re Grand Jury Subpoena of Stewart*, 545 N.Y.S.2d 974, 977 n.1 (Sup. Ct. 1989) ("Many lawyers and judges have expressed skepticism concerning the power of the Grand Jury. This skepticism was best summarized by the Chief Judge of this state in 1985 when he publicly stated that a Grand Jury would indict a 'ham sandwich.'"); *Do*

The grand jury must have sixteen to twenty-three members on the panel.¹⁴⁶ These members must collectively decide whether to return an indictment against the defendant.¹⁴⁷ If twelve grand jurors or more agree about issuing an indictment, the defendant can be indicted.¹⁴⁸ Absence of such an agreement blocks the initiation of criminal proceedings against the defendant.¹⁴⁹ The grand jury scrutinizes the prosecution's decision to indict the defendant¹⁵⁰ by considering the prosecution's evidence¹⁵¹ and by conducting its own investigations.¹⁵² The grand jury's investigative powers include the authority to subpoena witnesses and compel the production of both documentary and physical evidence.¹⁵³

The indicted defendant can estimate his prospects in the forthcoming jury trial by using the grand jury's decision as a straw-vote. Grand jurors are selected from the same community as trial jurors.¹⁵⁴ They are generally as representative as trial jurors.¹⁵⁵ The grand jury's decision therefore forecasts the future decision of the trial jury. The defendant can rely on this forecast after obtaining the results of the grand jurors' vote. These results help the defendant to determine his probability of being convicted by the trial jury. For example, when the indictment is endorsed by twenty-two out of twenty-three grand jurors, the defendant's probability of being convicted by the trial jury

We Need Grand Juries?, N.Y. TIMES, Feb. 18, 1985, at A16 (reporting former New York Chief Judge Wachtler's call for an abolition of grand juries because "[t]hey would 'indict a ham sandwich' if the district attorney asked nicely"); see also Niki Kuckes, *The Useful, Dangerous Fiction of Grand Jury Independence*, 41 AM. CRIM. L. REV. 1, 33–55, 60–62 (2004) (arguing that grand-jury independence is a fiction that enhances investigative powers, shields the exercise of prosecutorial discretion from judicial oversight, streamlines pretrial procedures, and distorts the public debate about the protective screening of prosecutions).

146 FED. R. CRIM. P. 6(a)(1).

147 LAFAYE ET AL., *supra* note 18, § 8.1(a).

148 FED. R. CRIM. P. 6(f).

149 See FED. R. CRIM. P. 6(f).

150 See LAFAYE ET AL., *supra* note 18, § 8.1(a) (stating the grand jury's prosecution-screening role).

151 *Id.*

152 *Id.* §§ 8.3–.4 (specifying the grand jury's investigative powers); see also *id.* § 8.4(b), at 411 (noting that in most jurisdictions the grand jury has the "authority to undertake an investigation on its own initiative notwithstanding the prosecutor's disagreement").

153 *Id.* § 8.3(a)–(c).

154 *Id.* § 8.4(a), at 409 ("Today, in all but a handful of jurisdictions, the grand jury array is drawn from the same constituency, and selected in the same manner, as the array for the petit jury.").

155 *Id.*

is fairly high. This probability is fairly low when only twelve out of twenty-three grand jurors support the indictment.

The defendant is generally entitled to obtain the grand jury's voting score. Federal Rule of Criminal Procedure 6(c) requires the foreperson or another designated grand juror to record the number of jurors concurring in every indictment and file the record with the court. The rule also provides that "the record may not be made public unless the court so orders,"¹⁵⁶ but federal courts tend to allow defendants to inspect it under the *Bullock* rule.¹⁵⁷ This rule underscores the defendant's right to verify the indictment's endorsement by the requisite majority of grand jurors.¹⁵⁸ As emphasized in one of the decisions that followed *Bullock*, "[a]n accused is entitled . . . to be satisfied that the indictment was in fact concurred in by twelve or more grand jurors, and was not merely a formal instrument signed only by the foreman."¹⁵⁹

The *Bullock* rule operates alongside the secrecy requirements¹⁶⁰ that lie at the heart of the grand jury process.¹⁶¹ These requirements make grand jury proceedings secret and prevent their disclosure (subject to a few carefully drafted exceptions).¹⁶² Driven by secrecy concerns, some courts have declined to follow *Bullock* and its progeny.

156 FED. R. CRIM. P. 6(c).

157 See *United States v. Bullock*, 448 F.2d 728, 729 (5th Cir. 1971) ("Under the rationale of *Dennis v. United States*, 384 U.S. 855 (1966), . . . the defendant should have been accorded the right to inspect the required record or, if such record was not properly maintained, as required by the rule, to have access to some method of substituted proof to ascertain that the substantive provisions of Fed.R.Crim.P. 6(f) were met.").

158 *Id.*; see also *United States v. Bally Mfg. Corp.*, 345 F. Supp. 410, 421 (E.D. La. 1972) (reaffirming the *Bullock* procedure of examining the grand jurors' "concurrency slip" by the defendant (internal quotation marks omitted)).

159 *United States v. Benigno*, No. 76 Cr. 0603, 1976 WL 852, at *7 (S.D.N.Y. Oct. 6, 1976); see also *United States v. Marshall*, 526 F.2d 1349, 1359-60 (9th Cir. 1976) (upholding the government's agreement to allow the defendant to inspect "the grand jury ballot and the return indicating the number of jurors concurring in the indictment" as aligning with *Bullock*); *State v. CIBA-GEIGY Corp.*, 536 A.2d 1299, 1301 (N.J. Super. Ct. App. Div. 1988) (noting that defendants were allowed to inspect the voting and attendance records of the grand jury to verify the validity of the indictment).

160 See FED. R. CRIM. P. 6(e).

161 See LAFAYE ET AL., *supra* note 18, § 8.5(a) (underscoring the centrality of the secrecy requirement in grand jury proceedings).

162 See FED. R. CRIM. P. 6(e)(2)-(3) (stating the secrecy requirement and its exceptions); LAFAYE ET AL., *supra* note 18, § 8.5 (analyzing the secrecy requirement and its exceptions).

They held that the grand jury's voting score can be disclosed to the defendant only upon a showing of particularized need.¹⁶³

The grand jury's standard for returning an indictment is "probable cause"¹⁶⁴ or, alternatively, "prima facie evidence."¹⁶⁵ There are no practical differences between these standards,¹⁶⁶ as contrasted with the Minnesota instruction which tells grand jurors that they are authorized not to indict the defendant "if [they] do not feel there is a reasonable prospect of a conviction."¹⁶⁷ Both standards allow the grand jury to indict the defendant without conducting an in-depth examination of the evidence. This factor turns many grand jury decisions to indict into a weak predictor of the defendant's probability of conviction. The decision's predictive capacity would depend on the voting score. When the grand jurors decide to indict unanimously, the defendant's probability of conviction remains indeterminate. However, when only a slim majority of grand jurors (say, twelve out of twenty-three) support the indictment, the probability of conviction is generally low. The desired disambiguation can only be achieved when grand jurors receive—and follow—the Minnesota (or similar) instruction.

163 See *United States v. Deffenbaugh Indus., Inc.*, 957 F.2d 749, 757 (10th Cir. 1992) ("If *Bullock* and the other authorities citing that opinion stand for the proposition that defendants are always entitled to view the report of the foreman of the grand jury specifying the number of votes for the indictment, we respectfully disagree. We do believe defendants are entitled to the assurance of the district judge that the judge has inspected the report and it contains twelve or more votes to indict. But anything more, except upon a showing of particularized need, would negate Rule 6(c)'s requirement of secrecy absent an 'order of the court.'"); see also *United States v. Missler*, 299 F. Supp. 1268 (D. Md. 1969), *aff'd*, 427 F.2d 1369 (4th Cir. 1970). In *Missler*, the grand jury's voting record, documenting the fact that all twenty-three jurors concurred in the indictment, was disclosed to the defendant. *Id.* at 1270. The district court noted, however, that "[i]f the point is raised in any future case, the court will advise the defendant only that 12 or more jurors concurred in finding the indictment in order to preserve the secrecy provided for by Rule 6." *Id.* at 1270 n.3.

164 See *United States v. Navarro-Vargas*, 408 F.3d 1184, 1186–87, 1196–98 (9th Cir. 2005) (stating that "probable cause" is the generally accepted standard for the grand jury's indictment decisions).

165 See *LAFAVE ET AL.*, *supra* note 18, § 15.2(f), at 742 (explaining that, under the "prima facie evidence standard," grand jurors are instructed to indict the defendant "when all the evidence taken together, if unexplained or uncontradicted, would warrant [his] conviction").

166 *Id.*

167 See *supra* note 22.

IV. EMPIRICAL CONFIRMATIONS

This Part tests our theory against empirical data. This testing is necessary for two reasons. First, it is important to know whether actual criminal defendants are ambiguity averse with respect to their prospects in jury trials, as contrasted with bench trials. Second, our theory's fundamental premise might face an empirical objection. Arguably, the extent to which jury trials are predictable does not much differ from the extent to which an informed insider can predict the outcomes of bench trials.¹⁶⁸ This objection branches into two antipodal claims. The first of those claims holds that bench and jury trials are both unpredictable. A bench trial's outcome depends upon what the judge had for breakfast,¹⁶⁹ and jury verdicts are equally whimsical and random.¹⁷⁰ According to the second claim, jury and bench trials are both reasonably predictable. To the proponents of those claims, institutional reasons for decisions—to which judges are committed and juries are not—do not mean much. Empirical facts are the only thing that matters. Arguably, theoretical models in which attorneys make reliable predictions about the outcomes of bench trials, but are unable to make such predictions about jury verdicts, do not align with these facts.

But how are we to find the empirical facts? Asking trial attorneys about their ability to predict judges' and juries' decisions is not a good methodology. Successful trial attorneys tend to relate their success to skills rather than serendipity. Many of them might therefore tell you that a good attorney is generally able to predict the outcomes of both jury and bench trials. An unsuccessful attorney, in contrast, tends to blame his or her underachievement on the system. He or she might tell you that the adjudication system is whimsical or even corrupt. Determining the attorneys' (and their clients') revealed preferences¹⁷¹ for jury over bench trials, or vice versa, therefore appears to be methodologically more adequate than polling. Deeds speak louder than words. What is chosen most often: jury trials or bench trials?

This approach faces difficulties. It identifies individuals' preferences for a particular mode of trial (bench or jury), but not the moti-

168 Our premise that jury trials are unpredictable, relative to bench trials, gains support from scholarly writings. See *supra* notes 49, 55, 74, 76. The empirical objection to our theory therefore runs against these writings as well.

169 See DWORKIN, *supra* note 80, at 36.

170 See FRANK, *supra* note 49, at 172.

171 Under the standard economic definition, revealed preference is a product-induced change in consumer behavior evidenced by the consumers' willingness (or unwillingness) to purchase the product. See KELVIN LANCASTER, *MODERN ECONOMICS: MICROECONOMICS* 121-22 (1973).

variations underlying those preferences. These motivations are diverse. They complicate the analysis of defendants' and prosecutors' trial-mode preferences. A defendant may opt for a bench trial not because he is ambiguity averse, but for an altogether different reason. Being indifferent between the two trial formats, he may prefer a bench trial because it is much faster and less costly than a trial by jury.¹⁷² Furthermore, opting for a predictable bench trial before a prosecution-minded judge is still better than litigating the case before hostile jurors. For example, a defendant accused of shooting a police officer may prefer a bench trial because he fears that, after September 11, the jury will convict him, no matter what.¹⁷³

A trial's predictability is one of several reasons for selecting the trial mode. The defendant's desire to avoid conviction and harsh punishment dominates this reason. Defendants generally prefer an unpredictable jury trial to a likely defeat in a bench trial. Facing a predictable conviction by a judge, a defendant opts for a jury trial even when he is ambiguity averse.¹⁷⁴ Because a bench trial holds a virtually certain prospect of conviction, there is no downside for the defendant in trying his luck with a jury. By making this gamble the defendant incurs trial expenses and assumes the risk of the judge's retaliation at sentencing. For some defendants, the acquittal prospect that they carry with the jury offsets these costs. Amid the different selection effects complicating the revealed-preferences' analysis, this effect is most significant. Our theory takes it into account by predicting the prevalence of jury trials for jurisdictions in which the prosecution prosecutes only "sure cases" where the defendant's conviction is virtually certain. Such jurisdictions usually have a relatively low trial rate and a relatively high rate of guilty pleas. Most importantly, *in the minority of cases that go to a bench trial the rate of acquittals is much higher than in jury trials*. Defendants with tangible acquittal prospects predominantly prefer a bench trial over a trial by jury. Our theory anticipates most defendants to be ambiguity averse. No such defendant would want his acquittal prospect to depend on the jury decision. The vast majority of defendants opting for a jury trial would therefore

172 This defendant also may rationally hope that he would be sentenced with some leniency, if convicted, because he saved the judge's time—a factor that the judge would count in his favor. See *supra* note 34 and accompanying text; see also Bibas, *supra* note 3, at 2486 ("The Federal Sentencing Guidelines significantly discount the sentences of defendants who accept responsibility in a timely manner, typically by pleading guilty.").

173 See *State v. Burks*, 674 N.W.2d 640, 642 (Wis. Ct. App. 2003).

174 See Viscusi & Chesson, *supra* note 62, at 167 (demonstrating that people generally seek ambiguity when confronted with a high probability of loss).

be those whose prospects of acquittal are slim at best. These defendants would try to raise a doubt that jurors (as opposed to judges) might consider “reasonable.” Most jurors would still not buy it. The acquittal rate in jury trials would consequently be markedly lower than in bench trials.

Another factor complicating the revealed-preferences’ analysis is the prosecution’s ability to veto the defendant’s request for a bench trial. In most jurisdictions, defendants cannot unilaterally elect to have a bench trial.¹⁷⁵ To have a bench trial, a defendant needs to obtain the prosecution’s consent and the court’s approval.¹⁷⁶ This requirement makes the chosen trial format not indicative of the defendant’s preference. Under our theory, for example, the prosecutor extracts better plea bargains (from the narrow prosecutorial perspective) by opting for a trial by jury systematically. The prosecutor only agrees to a bench trial in exchange for some concession by the defendant (that is, in exchange for a plea bargain). This factor distorts the defendants’ trial-mode preferences.

Prosecutors and judges often act as repeat players in relation to each other. When that happens, the prosecutor wants to maintain a good working relationship with the judge. This induces the prosecutor to opt for bench trials in order to reduce the judge’s backlog of cases. This incentive often overrides the prosecutor’s ambition to force harsh plea bargains upon ambiguity-averse defendants. Defendants’ expectation that the judge will reciprocate may motivate some of them to opt for a jury trial; others would be driven into plea bargains, favorable and unfavorable. *For these reasons, jurisdictions with low trial rates do not generate case samples tidy enough for identifying the defendants’ trial-mode preferences.* The low trial rate makes this identification difficult. The defendants’ distorted choices in plea bargains and in selecting the trial mode make it virtually impossible.

Jurisdictions with high trial rates offer our investigation the most promising dataset potential. High trial rates indicate absence of rigorous case screening by the prosecution, as well as the defendants’ ability to withstand illegitimate plea bargaining pressures. High-trial-rate jurisdictions consequently exhibit trial-mode preferences that are largely systematic and undistorted. Facing trial in one such jurisdiction, a defendant does not accept a plea bargain when the evidence pointing to his guilt is not strong enough. When the defendant is also ambiguity averse—as usually is the case, according to our theory—he prefers a bench trial over a trial by jury. When the evidence pointing

175 See *supra* notes 14–15, 26–27 and accompanying text.

176 See *supra* notes 14–15, 26–27 and accompanying text.

to the defendant's guilt is substantial, he generally accepts a plea bargain. The qualifier "generally" accounts for defendants who demand overly lenient sentences in exchange for their guilty pleas. To this the prosecution does not agree. The defendants consequently have to select the trial mode best fitting their objectives. Bench trials offer such defendants no hope. For reasons already stated, many of them therefore take their chances with the jury—because of its unpredictability. These defendants turn into ambiguity seekers. Some defendants opt for a jury trial strategically, hoping that their time-wasting threat will induce the prosecutor to offer an attractive plea bargain.

Defendants opting for a bench trial are unlikely to be vetoed by the prosecution even when the law allows it. A high-trial-rate environment increases the prosecution's workload and the judges' backlog. As already explained, an average jury trial consumes more time and is more effort intensive than an average bench trial.¹⁷⁷ A substantial increase in the number of jury trials multiplies this difference. This factor induces prosecutors to accept the bench-trial format even when they favor the jury-trial environment. Their position as repeat players, interested in bonding with judges, is yet another factor supporting our "no veto" prediction. A high-trial-rate environment places judges under pressure and induces them to clear dockets as expediently as possible. This inducement turns bench trial into the judges' default trial mode. Acting upon this inducement, judges do not merely welcome bench trials. They actively encourage them. Prosecutors are unlikely to resist this pressure even when they are ready to risk their working relationship with the judge. Judges consider themselves capable of adjudicating any factual or legal issue. For this reason (that occasionally blends with resentment), a judge might perceive the prosecutor's insistence on a jury trial as a strategic attempt to obtain an unfair advantage. Few prosecutors, if any, can afford this bad signal. No prosecutor wants her case against the defendant to appear suspicious in the judge's eyes.

Our theory ascribes ambiguity aversion to a paradigmatic criminal defendant. Empirically, this means that most criminal defendants are ambiguity averse. When such a defendant goes to trial in which his acquittal prospect is real, he prefers to be tried by a judge rather than jury. He takes his chances with unpredictable jurors only when the evidence leaves him no acquittal prospect in a predictable bench trial. Most such cases end up in guilty pleas and plea bargains. They do not go to trial. *Our theory therefore predicts that bench trials are prevalent in jurisdictions in which trial rates are high.* To repeat: in cases in

177 See *supra* note 12 and accompanying text.

which the prosecution's evidence is not overwhelmingly strong, defendants predominantly prefer a bench trial. In jurisdictions featuring high trial rates and, correspondingly, a nonmeticulous case selection by the prosecution, there will be many such cases.

Ambiguity aversion is the only adequate explanation of this preference. Defendants not averse towards ambiguity are indifferent to the trial format. They choose bench and jury trials interchangeably. They are not likely to face pressures from the bench strong enough to dictate to them the waiver of a jury trial. Indeed, the law generally requires trial judges to advise the defendant that he is entitled to a trial by jury.¹⁷⁸ Failure to do so—let alone a pressure that impels the defendant to agree to a bench trial—may invalidate a guilty plea.¹⁷⁹

A defendant with no aversion towards ambiguity is unlikely to change his mind after choosing a jury trial. Neither the prosecution nor the defendant's own attorney can induce him to do it. The prosecution scarcely has any leverage against a defendant who goes to trial after refusing (or without negotiating) a plea bargain. Defense attorneys often develop repeat-player incentives vis-à-vis prosecutors and judges, with whom they want to bond.¹⁸⁰ Acting upon this incentive, some attorneys may convince their clients to accept a plea bargain.¹⁸¹ Yet, persuading a client who claims to be innocent to switch from a jury to a bench trial is an entirely different matter. Few defense attorneys would assume such a risk. Few defendants, if any, would succumb to this pressure. Defendants opting for a trial by jury do so strategically or because they perceive jury trial as a norm. In either case, they are not easily persuaded to switch to a trial before a judge.

Defendants opting for a bench trial are typically driven by their ambiguity aversion. When bench trials are prevalent and the general trial rate is high, defendants who choose a bench trial are predominantly averse towards ambiguity. Empirical data that we now specify confirm these predictions.

178 See FED. R. CRIM. P. 11(b)(1)(C) (requiring the court to advise the defendant entering a guilty plea of his right to a jury trial); *Boykin v. Alabama*, 395 U.S. 238, 243 (1969).

179 See *Boykin*, 395 U.S. at 242–44. But see LAFAYE ET AL., *supra* note 18, § 21.4(e) (explaining the *Boykin* decision as unique and stating the prevalent approach that favors an ad hoc inquiry into whether the defendant's plea was voluntary and intelligent).

180 See Bibas, *supra* note 3, at 2475, 2480 (underscoring this incentive).

181 *Id.* at 2480.

According to the National Center for State Courts, the general trial rate is approximately 3%.¹⁸² Most criminal cases—about 97%—are disposed by courts without a trial.¹⁸³ The most prevalent case disposition—about 63% of the total number of cases—is guilty plea.¹⁸⁴ About 21% of the total number of cases are dismissed.¹⁸⁵ Finally, about 13% of the total number of cases fail to produce conviction for different (unspecified) reasons that include a mistrial.¹⁸⁶ In this dataset, *jurisdictions with the highest trial rates almost uniformly exhibit the prevalence of bench trials*. In 1998, these jurisdictions included Arkansas (about 10% trial rate), Wyoming (about 13%) and the District of Columbia (about 10%).¹⁸⁷ As our theory predicts, about 84% of Arkansas trials were bench trials.¹⁸⁸ About 73% of Wyoming trials were bench trials.¹⁸⁹ Exceptionally, bench trials in the District of Columbia accounted for only 3%.¹⁹⁰ In 1999, Arkansas was again among the three highest-trial-rate jurisdictions. Its trial rate was 8.4%.¹⁹¹ About 82% of all Arkansas trials were resolved by judges.¹⁹² Puerto Rico topped the list with a 9% trial rate and with remarkable 96% of bench trials (only 4% of the litigated criminal cases went to juries).¹⁹³ Exceptionally, West Virginia, with a trial rate of about 8%, exhibited the prevalence of jury trials.¹⁹⁴ There, bench trials accounted for about 45% of all trials.¹⁹⁵ Most trials—about 55%—were jury trials.¹⁹⁶

182 This rate was reported for years 1999 and 2002. In 2000 and 2001, it was 3.3% and 2.8%, respectively. In 1998, it was 3.7%. See NAT'L CTR. FOR STATE COURTS, EXAMINING THE WORK OF STATE COURTS, 1998, at 72 (Brian J. Ostram & Neal B. Kauder, eds., 1999) [hereinafter STATE COURTS 1998]; NAT'L CTR. FOR STATE COURTS, EXAMINING THE WORK OF STATE COURTS, 1999–2000, at 68 (Brian J. Ostram et al. eds., 2001) [hereinafter STATE COURTS 2000]; NAT'L CTR. FOR STATE COURTS, EXAMINING THE WORK OF STATE COURTS, 2001, at 63 (Brian J. Ostram et al. eds., 2001) [hereinafter STATE COURTS 2001]; NAT'L CTR. FOR STATE COURTS, EXAMINING THE WORK OF STATE COURTS, 2002, at 61 (Brian J. Ostram et al. eds., 2003) [hereinafter STATE COURTS 2002]; NAT'L CTR. FOR STATE COURTS, EXAMINING THE WORK OF STATE COURTS, 2003, at 44 (Brian J. Ostram et al. eds., 2004) [hereinafter STATE COURTS 2003].

183 This datum reflects the five year period from 1998 to 2002. See sources cited *supra* note 182.

184 See sources cited *supra* note 182.

185 See sources cited *supra* note 182.

186 See sources cited *supra* note 182.

187 STATE COURTS 1998, *supra* note 182, at 72.

188 *Id.*

189 *Id.*

190 *Id.*

191 STATE COURTS 2000, *supra* note 182, at 68.

192 *Id.*

193 *Id.*

194 *Id.*

195 *Id.*

The statistics for the year 2000 did not include Arkansas. This time around, the list of high-trial-rate jurisdictions was topped by Hawaii. The Hawaii trial rate was about 13%.¹⁹⁷ For such exceptionally high trial rates, our theory predicts an unequivocal dominance of the bench trial format. Correspondingly with our theory, 73% of Hawaii trials were bench trials¹⁹⁸ (as opposed to only 17% in 1999¹⁹⁹). Puerto Rico again exhibited a 9% trial rate.²⁰⁰ As in 1999, its bench-trial rate was about 96%.²⁰¹ The overall trial rate in West Virginia came close to 7%.²⁰² This time, as opposed to 1999, bench trials were more recurrent than trials by jury. They accounted for about 53% of all trials.²⁰³ The 2001 survey, with Arkansas missing again, singled out Puerto Rico (with a trial rate of about 10%), New Mexico (8%) and Pennsylvania (about 7%).²⁰⁴ Expectedly, bench trials in Puerto Rico accounted for 97% of all trials.²⁰⁵ The rate of bench trials in New Mexico was 70% and in Pennsylvania, 68%.²⁰⁶ Finally, the survey for 2002—focusing upon felonies—brought Arkansas back to the top of the list. The felony trial rate in that state was 6% (twice the national average).²⁰⁷ About 83% of Arkansas's felony trials were bench trials.²⁰⁸ Only 17% of the trials went to juries.²⁰⁹ In Puerto Rico, a jurisdiction with a 10% felony trial rate, the incidence of bench felony trials was 90%.²¹⁰ New Mexico featured a felony trial rate of about 8%.²¹¹ There, bench trials accounted for 75% (only 1/4 of contested felony cases went to juries).²¹²

Arkansas's bench-trial statistics are noteworthy. They exhibit systematic prevalence of bench trials in a jurisdiction that gives defendants no right to a bench trial. Arkansas law honors a defendant's request for a bench trial only when the prosecution does not contest it

196 *Id.*

197 STATE COURTS 2001, *supra* note 182, at 63.

198 *Id.*

199 STATE COURTS 2000, *supra* note 182, at 68.

200 STATE COURTS 2001, *supra* note 182, at 63.

201 *Id.*

202 *Id.*

203 *Id.*

204 STATE COURTS 2002, *supra* note 182, at 61.

205 *Id.*

206 *Id.*

207 STATE COURTS 2003, *supra* note 182, at 44.

208 *Id.*

209 *Id.*

210 *Id.*

211 *Id.*

212 *Id.*

and the court approves it.²¹³ In practice, however, the prosecution assents to and the court approves virtually any such request. Courts only care about whether the defendant waived his right to a jury trial “knowingly, intelligently, and voluntarily.”²¹⁴ The prosecutor’s assent to a bench trial is expected to be given—and appears to be given—as a matter of course.²¹⁵ This indicates that Arkansas judges predominantly prefer bench trials and that prosecutors cooperate with those judges. Defendants’ preferences also align with the bench-trial format. Defendants rationally prefer a bench trial to a trial by jury when they believe that the prosecution’s evidence is not overwhelmingly strong. Unfortunately, there was no reporting of the Arkansas acquittal rates in bench and in jury trials, respectively. This factor could verify (or falsify) our last observation.

Arkansas’s high trial rates are equally noteworthy. Seemingly, a defendant with no ambiguity aversion in mind and no attractive plea bargain on the table should choose a trial by jury. In a high-trial-rate environment, a defendant’s strategic insistence on a time-consuming jury trial is likely to extract an attractive plea bargain. The judge’s hostility in sentencing is a possible downside of this strategy. This downside, however, depends on whether the jury will convict the defendant. Before that happens, the prosecution would have to think about economizing its efforts and helping the judge to reduce her backlog by offering the defendant an attractive plea bargain. Most

213 See ARK. CONST. art. 2, § 7 (“[A] jury trial may be waived by the parties in all cases in the manner prescribed by law”); ARK. R. CRIM. P. 31.1 (“No defendant in any criminal cause may waive a trial by jury unless the waiver is assented to by the prosecuting attorney and approved by the court.”); *State v. Singleton*, 13 S.W.3d 584, 586 (Ark. 2000) (referring to ARK. R. CRIM. P. 31.1 and quoting *Fretwell v. State*, 708 S.W.2d 630, 632 (Ark. 1986) for the proposition that “[t]he rule is clear. Criminal cases which require trial by jury must be so tried unless (1) waived by the defendant, (2) assented to by the prosecutor, and (3) approved by the court. The first two are mandatory before the court has any discretion in the matter”).

214 See *McCoy v. State*, 962 S.W.2d 822, 824 (Ark. Ct. App. 1998) (underscoring the centrality of the defendant’s waiver).

215 *Burrell v. State*, No. CACR 04-406, 2005 WL 419349 (Ark. Ct. App. Feb. 23, 2005), documents what appears to be a typical bench-trial stipulation: “When the trial judge called appellant’s case, the judge stated, ‘I understand we’re here for a bench trial,’ to which appellant’s counsel responded, ‘That’s correct, Judge.’ Prior to calling any witnesses, the prosecutor asked, ‘Being a bench trial, do we have—do we have phases?’ Appellant’s counsel made the following response, ‘No[t] really. We waive the second phase.’” *Id.* The Court of Appeals ultimately found that “[t]he record does not indicate whether appellant knew that he was entitled to a trial by jury if he so desired; even if he knew of this right, the record is also silent with regard to whether appellant wished to waive his right to a jury trial” and ruled that there was no waiver. *Id.*

defendants forfeiting their right to a jury trial therefore appear to be driven by two factors. The first of those factors is the defendant's acquittal prospect. Absence of such a prospect gives the defendant a good reason for entering a guilty plea or opting for a jury trial strategically. The second factor is the defendant's ambiguity aversion. No other reason adequately explains the preference for bench trials that Arkansas defendants systematically exhibit.

Our analysis gains support from a cross-jurisdictional study of hang juries, also conducted by the National Center for State Courts.²¹⁶ This study pointed to a felony trial rate of 7%.²¹⁷ This figure exceeds the general trial rate (approximately, 3%) by more than double. The study therefore focused on a high-trial-rate environment. Within this 7% figure, bench trials accounted for 4.3% and jury trials accounted for 2.7%.²¹⁸ That is, bench trials accounted for 61% of all felony cases that went to trial. The remaining 39% of the cases were tried by juries. A high-trial-rate environment has once again exhibited the prevalence of bench trials.

Federal data support our theory from a different—and equally important—angle. Our theory predicts high acquittal rates in bench trials and low acquittal rates in jury trials. Defendants with real acquittal prospects predominantly prefer judges over juries because most defendants are ambiguity averse. Defendants with no real prospect of acquittal predominantly prefer a guilty plea. Some of them opt for a jury trial because they have nothing to lose.²¹⁹

Federal prosecutions averaged 74,000 cases per year,²²⁰ of which about 6% go to trial, 9% are dismissed, and in 85% of the cases defendants are convicted after pleading guilty (or *nolo contendere*).²²¹ Among the cases that go to trial, 73% are tried by juries and 27% are

216 See PAULA L. HANNAFORD-AGOR ET AL., NAT'L INST. FOR STATE COURTS, ARE HUNG JURIES A PROBLEM? (2002), available at http://www.ncsconline.org/WC/Publications/Res_Juries_HungJuriesProblemPub.pdf.

217 *Id.* at 20.

218 *Id.*

219 This finding aligns with the general prediction of Viscusi & Chesson, *supra* note 62, that people seek ambiguity when the probability of loss is high.

220 This refers to the total number of indicted defendants. See SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS, *supra* note 12, at 445 tbl.5.42.

221 We extrapolated these percentages from the data reported by the SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS, *supra* note 12, at 423 tbl.5.22, with respect to five consecutive years: 1998–2002. The 6% trial rate is close to the average felony trial rate in state courts (7%), which is understandable because most federal trials involve felonies. See, e.g., *id.* at 416 tbl.5.17; *supra* note 217 and accompanying text.

bench trials.²²² In bench trials, judges produce a staggering rate of acquittals: 46%.²²³ On the average, they convict only 54% of defendants—a conviction rate markedly lower than the jury's.²²⁴ The vast majority of defendants opting for a jury trial (85%) are convicted.²²⁵ The jury's acquittal rate is only 15%.²²⁶

The Table below summarizes the relevant data for the five-year period between 1998 and 2002.

TABLE 1. DISPOSITION OF FEDERAL FELONY CASES²²⁷

	1998	1999	2000	2001	2002
Trials	7%	6%	6%	6%	4%
Bench	25%	25%	29%	36%	22%
Jury	75%	75%	71%	64%	78%
Bench Convictions	50%	47%	51%	68%	56%
Bench Acquittals	50%	53%	49%	32%	44%
Jury Convictions	86%	85%	85%	84%	85%
Jury Acquittals	14%	15%	15%	16%	15%
Guilty Pleas/Nolo Contendere	83%	84%	85%	85%	86%
Dismissals	10%	10%	9%	9%	9%

These data reveal a remarkable invariance in the rates attaching to guilty pleas, dismissals, and trials. The modest trial rate and the high rate of guilty pleas evidence meticulous case selection by the prosecution. Federal prosecutors tend to indict defendants when the probability of conviction—based on the evidence incriminating the defendant—is relatively high. Federal prosecutors generally do not prosecute weak cases.²²⁸ The rates of conviction and acquittal among

222 See SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS, *supra* note 12, at 423 tbl.5.22. Note again that, under federal law, a defendant's request for a bench trial needs to be consented to by the prosecution and approved by the judge. See *supra* note 15 and accompanying text.

223 See SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS, *supra* note 12, at 423 tbl.5.22.

224 See *id.*

225 See *id.*

226 See *id.*

227 We extrapolated these percentages from the data reported by the SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS, *supra* note 12, at 423 tbl.5.22, as referring to years 1998–2002.

228 See Bibas, *supra* note 3, at 2472 (“[P]rosecutors have incentives to take to trial only extremely strong cases and to bargain away weak ones.”).

juries is also invariant. The acquittal rate—15%—is relatively low. The conviction rate—85%—is high. Jury trials account for 73% of all trials, which may suggest that prosecutors often veto the defendants' requests for a bench trial (due to the judges' acquittal rate, 46%, or for other strategic reasons). This hypothesis, however, is probably wrong. As already explained, prosecutors have strong incentives for not opposing defendants' requests for a bench trial. Moreover, if the prosecution were to oppose such requests strategically, then, presumably, it would have done so in its weakest cases. Our dataset, accounting for 74,000 federal prosecutions, shows exactly the opposite. The prosecution's weakest cases, in which 46% of defendants were ultimately acquitted, went to bench trials. The prosecution did not veto this trial format.

These cases demonstrate ambiguity aversion on the part of the defendants. In preferring bench trials over trials by jury, most of these defendants were driven by their aversion towards ambiguity. Their probability of innocence and the corresponding acquittal prospect were substantial. The defendants wanted to avoid the dilution of this probability in the uncharted waters of jury trial. They opted for a bench trial in order to protect this probability's determinacy.

If so, why did most defendants prefer a jury trial to a bench trial? Why did they not capitalize on the judges' rate of acquittal? The prosecution's indictment strategy adequately resolves this puzzle. Most defendants indicted by federal prosecutors faced incriminating evidence that was overwhelmingly strong. The vast majority of those defendants (85%) found this evidence irresistible and pled guilty (with or without plea bargaining). Some of those defendants took their chances with the jury because they preferred—on perfectly rational grounds—a slim chance of acquittal by a jury to a virtual conviction by a judge. These defendants attempted to exploit the relative uncertainty of a jury trial because their expected utility (acquittal) was greater than the cost (trial expenses and the risk of retaliation by the sentencing judge). This factor is probably responsible for an intensified resort to bench trials in 2001 (36%—9% above the average rate). Defendants with slim prospects of acquittal (most of whom are factually guilty) tried to capitalize on the judges' high acquittal rate. They did not succeed, though, because judges convicted 68% of defendants, which brought their acquittal rate down to 32%. The jury's conviction rate for 2001 stayed within the usual (84%).²²⁹

229 This explanation aligns with a formal economic model developed by Gerald D. Gay, Martin F. Grace, Jayant R. Kale, and Thomas H. Noe. See Gerald D. Gay et al., *Noisy Juries and the Choice of Trial Mode in a Sequential Signalling Game: Theory and Evi-*

To sum up, we have identified empirically two general trends that verify the ambiguity-aversion theory. First, *high trial rates correlate with the prevalence of bench trials*. High trial rates originate from a nonmeticulous screening of cases by the prosecution and from a correspondingly large number of thinly evidenced accusations. Defendants facing such accusations predominantly plead not guilty and prefer a bench trial. Second, *the rate of acquittal in bench trials is much higher than in trials by jury*. Bench trials are strongly preferred by defendants with solid acquittal prospects. Ambiguity aversion is the only plausible explanation for this preference. Defendants with solid acquittal prospects have much to lose and are therefore unwilling to depend upon unpredictable juries.

The empirical data relevant to our theory are, admittedly, incomplete. We could not obtain any reliable data on the disposition of criminal cases in Connecticut, Illinois, Louisiana, Maryland, Montana, Nebraska, and New Hampshire—jurisdictions in which defendants are entitled to choose a bench trial unilaterally.²³⁰

Additional jurisdictions in which defendants have a similar entitlement are New York,²³¹ Ohio,²³² and Iowa.²³³ In 1998, New York

dence, 20 RAND J. ECON. 196, 197–204 (1989). This model assumes that jurors are “noisier” (more error prone) than judges. *Id.* at 197. Defendants facing strong incriminating evidence (most of whom are guilty) consequently select the “noisiest” trial mode: a trial by jury. Defendants facing weak incriminating evidence (most of whom are innocent) choose the least noisy trial mode: a bench trial. *Id.* at 212. The authors substantiate this model by empirical data on bench and jury trials in Florida and Texas. *Id.* at 206–08. These data reveal that “most defendants choose jury trials even though bench trials have lower conviction rates.” *Id.* at 207; cf. Andrew D. Leipold, *Why Are Federal Judges So Acquittal Prone?*, 83 WASH. U. L.Q. 151 (2005) (observing that high acquittal rates in federal bench trials have no clear explanation and hypothesizing that they may be related to the decrease in the judges’ sentencing discretion).

230 See *supra* notes 29, 31 and accompanying text. We also could not obtain reliable data on the disposition of criminal cases by Oregon courts. For our purposes, this jurisdiction is nearly as significant as Connecticut, Illinois, Iowa, Louisiana, Maryland, Montana, Nebraska, New Hampshire, New York, and Ohio. Oregon courts have a discretion not to honor the defendant’s request for a bench trial, but the prosecution cannot veto it. See *supra* note 32. Therefore, when the court finds the defendant’s stated desire to be tried by a judge alone both willful and informed, the defendant’s wish will likely be granted. The Minnesota rule is the same. See *supra* note 32. In 2001, 60% of all Minnesota trials were bench trials, but the trial rate was only 1%. STATE COURTS 2002, *supra* note 182, at 61. In 2002, the trial rate was 4% with only 25% of bench trials. STATE COURTS 2003, *supra* note 182, at 44. There was no reporting on 1998, 1999, and 2000.

231 See *supra* note 28.

232 See *supra* note 31.

233 See *supra* note 30.

exhibited a 5.7% trial rate, 2% above the national average of 3.7%.²³⁴ About 82% of all New York trials in that year were jury trials.²³⁵ Bench trials accounted for the remaining 18%.²³⁶ Ohio mirrored the national average with a 3.7% trial rate.²³⁷ Of all Ohio trials, 70% were jury trials and 30% were bench trials.²³⁸ Both jurisdictions had similar trial distributions in 1999. Bench trials in New York accounted for 19% and jury trials for 81% (within a trial rate of 5.7%).²³⁹ Bench trials in Ohio accounted for 30% and jury trials for 70% (within a trial rate of 3.7%).²⁴⁰ The national trial-rate average in that year was 3.1%.²⁴¹ The surveys for 2000 and 2001 did not include New York and Ohio courts. In 2002, New York had a 5% trial rate, 2% above the national average (of 3%).²⁴² Amongst New York trials, 80% were tried by juries and 20% by judges in bench trials.²⁴³ Ohio had a 3% trial rate in the same year.²⁴⁴ Of all its trials, 67% went to juries and 33% were decided by judges.²⁴⁵

Criminal defendants in Iowa predominantly preferred bench trials. This preference generated a bench-trial rate that increased from 67% in 2000 to 70% and 75%, respectively, in 2001 and 2002.²⁴⁶ Iowa's tri-annual trial rate was only 2.7%—about 0.3% below the national average.

These data are inconclusive for two reasons. The trial rates in Ohio fall within the average. In Iowa, they are below the average. This indicates that prosecutors in both Iowa and Ohio meticulously select cases for prosecution. As a result, most defendants enter into guilty pleas, both unilateral and bargained. Whether these defendants are averse towards ambiguity is impossible to ascertain. In New York, the trial rates are markedly above the average, but are still not

234 STATE COURTS 1998, *supra* note 182, at 72.

235 *See id.*

236 *See id.*

237 *Id.*

238 *See id.*

239 *See* STATE COURTS 2000, *supra* note 182, at 68.

240 *See id.*

241 *Id.*

242 *See* STATE COURTS 2003, *supra* note 182, at 44.

243 *See id.*

244 *See id.*

245 *See id.*

246 *See* STATE COURTS 2001, *supra* note 182, at 63; STATE COURTS 2002, *supra* note 182, at 61; STATE COURTS 2003, *supra* note 182, at 44. There were no data on Iowa courts for 1998. The 1999 data were flawed: it reported the overall trial rate of 2.2% as composed by 0.6% and 0.4% of bench and jury trials, respectively. *See* STATE COURTS 2000, *supra* note 182, at 67–68.

high enough relative to other high-trial-rate jurisdictions. Crucially, the acquittal rates in bench trials that took place in Iowa, New York, and Ohio are unknown. Our theory predicts that this rate is much higher than the rate of acquittals in jury trials, but we could not verify it.

To test our theory's validity, we also examined the demands for two informational products: information predicting jury verdicts and information predicting the decision by a judge. These demands originate from trial attorneys. Trial attorneys are more or less informed about the relevant legal doctrine and court practices. Money expended by these attorneys on either of the two products indicates the relative demand for each. This factor is also indicative of the product's utility. Greater demand for information predicting jury verdicts indicates that jury trials are not as predictable as bench trials. Greater demand for information that predicts judges' decisions in bench trials indicates the opposite.²⁴⁷

Based on this criterion, we compared the jury consultants market with the parallel market for judge consultant services. We have found a relatively thriving market for jury consultants²⁴⁸ and no market for judge-consultants. Jury consulting also appears to be a gainful industry.²⁴⁹

247 Trial expenses are paid by clients rather than by their attorneys. Arguably, an attorney's willingness to expend her client's money on trial-predicting information does not necessarily indicate that this information is useful. We disagree. The competition in the market for legal services induces attorneys to economize their clients' trial expenses.

248 See NEIL J. KRESSEL & DORIT F. KRESSEL, STACK AND SWAY: THE NEW SCIENCE OF JURY CONSULTING 14–19, 61–92 (2002) (identifying the increasing demand for jury consultant services and analyzing the jury consultant industry).

249 See *id.* at 65, 74 (describing jury consultancy as a burgeoning business); Solomon M. Fulero & Steven D. Penrod, *The Myths and Realities of Attorney Jury Selection Folklore and Scientific Jury Selection: What Works?*, 17 OHIO N.U. L. REV. 229, 229 (1990) (observing that jury consultants demand fees upwards of \$100,000 per case and work on multimillion dollar cases); Heath R. Patterson, *Jury Selection: Prosecution's Final Frontier*, PROSECUTOR, Nov.–Dec. 2001, at 29, 29 (reporting that prosecutors often need jury consultant assistance, but cannot afford it because consultant fees are exorbitant); Kate Rix, *Jury Consultants Play Meatier Role in Trial Prep*, NAT'L L.J., Aug. 7, 2000, at A13 (reporting that the full package of jury selection, monitoring, and persuasion consulting may cost about \$200,000); Franklin Strier & Donna Shestowsky, *Profiling the Profilers: A Study of the Trial Consulting Profession, Its Impact on Trial Justice and What, if Anything, To Do About It*, 1999 WIS. L. REV. 441, 446 (observing proliferation of jury consulting and that its typical clients are the wealthy and the privileged); Stephanie Leonard Yarbrough, *The Jury Consultant—Friend or Foe of Justice*, 54 SMU L. REV. 1885, 1887 (2001) (stating that jury consultants generally demand high fees); see also *What Consultant Will Be Looking for*, DAILY ARDMOREITE (Ardmore, Okla.), Mar. 17, 1997, at 2A (reporting that the industry accounts for about 500 jury consultants). Our Yahoo

Jury consultant services utilize sociological and psychological research.²⁵⁰ These services include both qualitative and quantitative jury research.²⁵¹ Qualitative jury research uses a limited number of surrogate jurors (typically, up to fifty) drawn from the relevant community. The research identifies these jurors' reactions to evidence and arguments that can be presented in the future trial. After hearing the evidence and the arguments, the surrogate jurors will be divided into subgroups that will separately deliberate the verdict. This methodology singles out the most effective arguments and evidence along with the jurors' profiling trends.²⁵² The jurors' profiling trends are the sets of attitudes, experiences and beliefs that are favorable or, inversely, inimical to the client's case.²⁵³ Quantitative research focuses on a large pool of surrogate jurors (about 400), who respond to carefully designed questionnaires ("community attitude surveys").²⁵⁴ These responses identify attitudes, experiences and beliefs favorable and unfavorable to the client's case.²⁵⁵ This research strategy aims at developing dependable juror profiles.²⁵⁶ It also identifies the "hot questions" that facilitate the jurors' selection and de-selection during voir dire.²⁵⁷

The economic gap separating jury consulting services from judge consulting services has a straightforward explanation. Trial attorneys often require sociological and psychological data that facilitate predictions of jury trials. They virtually never require similar data in relation to bench trials (and about judges' decisions generally). If these data were useful, attorneys would systematically require them. Bench trials are numerous and their stakes are high. Attorneys, nevertheless, are generally unwilling to pay for sociological and psychological information about judges. For them, information about court practices and legal doctrine is sufficient for predicting judges' decisions.

search (run on July 18, 2005) has identified advertisements from eighty jury consultant firms. Some of these firms are listed in the directory of ASTC, the American Society of Trial Consultants. See ASTC, Consultant Locator, <http://www.astcweb.org/consultantlocator/list.php?searchme=Viewall> (last visited Feb. 21, 2006).

250 See KRESSEL & KRESSEL, *supra* note 248, at 14–16, 93–135.

251 Walter F. Becker, Jr., *How To Use a Jury Consultant: A Guide for Trial Attorneys*, 50 LA. B.J. 426, 427 (2003).

252 *Id.*

253 *Id.*

254 *Id.*

255 *Id.*

256 *Id.*

257 *Id.*

CONCLUSION

The complex problem identified by this Article has a simple solution. Criminal defendants should be allowed to opt for a bench trial unilaterally. This proposal calls for a change in the prevalent constitutional doctrine that guarantees criminal defendants the right to a jury trial, but not the right to a trial by a judge. Giving a defendant the right to choose a bench trial instead of a trial by jury would enable him to disambiguate his probability of conviction. This disambiguation would divest the prosecution of its power to force defendants into harsh and inefficient plea bargains by exploiting their ambiguity aversion. In reality, prosecutors already have strong incentives not to veto the defendant's request for a bench trial. The quality of criminal justice, however, must not depend on the endurance of these incentives and the prosecutor's good will. The defendant's right to a bench trial is as important as his or her entitlement to a trial by jury. This right merits constitutional protection.

The general approach taken by this Article focuses upon prosecutors and defendants as negotiating plea bargains in the shadow of the trial.²⁵⁸ We perceive criminal procedure as setting the background conditions for plea bargaining and examine the fairness and social utility of these conditions. This approach does away with the trial-centered perspective that often fails to acknowledge the prevalence of plea bargains in the criminal justice system.²⁵⁹

Arguably, the defendant's right to a bench trial may engender a pro-defendant bias among trial judges. When the prosecution cannot veto the defendant's trial-mode preference, it loses its leverage with the judge. The judge would then need to induce the defendant alone not to opt for a jury trial (an effort intensive and time consuming trial mode with few career enhancing returns for the judge). The judge consequently may decide to acquit more defendants than justified and to exercise leniency in sentencing the convicted defendants. Because

258 See also Bibas, *supra* note 3, at 2528–30 (arguing that alongside the “shadow of the law,” numerous other factors, such as ignorance, money, self-interest, and demographic variation, influence plea bargaining); cf. Robert H. Mnookin & Lewis Kornhauser, *Bargaining in the Shadow of the Law: The Case of Divorce*, 88 YALE L.J. 950, 950 (1979) (stating that in divorce and other cases the law impacts the negotiation and bargaining that occur before the parties reach the courtroom).

259 See FISHER, *supra* note 4, at 230 (attesting that plea bargain is a prevalent form of case disposition in American courts); Scott & Stuntz, *supra* note 7, at 1911–12. For a powerful critique of trial-centeredness, see Stephanos Bibas, *Judicial Fact-Finding and Sentence Enhancements in a World of Guilty Pleas*, 110 YALE L.J. 1097, 1150–54 (2001).

acquittals are generally not appealable²⁶⁰ and sentences not reviewable,²⁶¹ judges might find this strategy particularly convenient.

This prediction is overstated. Defendants with ambiguity aversion prefer bench trials whenever their acquittal chances are substantial. They do not require any additional inducement from the judge. These defendants are also largely innocent. Defendants with solid acquittal prospects and no ambiguity aversion are largely innocent as well. Concessions inducing such defendants to prefer a bench trial are therefore unlikely to produce social harm.

Defendants with slim chances of acquittal generally prefer jury trials. A credible (and corrupt) promise of acquittal would induce many such defendants to opt for a bench trial. An extreme leniency in sentencing—if credibly promised by the judge—would achieve the same result. Most judges, however, would reject such strategies for being not only blatantly unlawful, but also irrational. Instead of pursuing these strategies, judges may simply increase the sentence of a defendant whose trial was a waste of time. This measure would induce defendants with slim chances of acquittal to plead guilty.

Defendants whose prospects of acquittal are neither slim nor solid fall into the in-between category. These defendants are potential recipients of the judges' unmeritorious concessions. Many such defendants are guilty. Concessions received by these defendants therefore would be socially harmful. Other defendants falling into the in-between category are innocent. Concessions that these defendants would receive would not be detrimental to society. Unmeritorious concessions that would go to the guilty defendants are likely to be offset by the prevented harm. Harm that the prosecution would otherwise produce by forcing defendants into harsh and inefficient plea bargains is both substantial and systematic.

The judges' concessions to defendants are also unlikely to be substantial. Any substantial concession to a defendant who appears to be guilty would mar the judge's reputation and dilute her promotion prospects.²⁶² For a state judge, the "soft on crime" image is particularly damaging. This image frustrates the community's "tough on crime" expectation from the judge and may block the judge's future reelection.²⁶³ The judge's incentives for promotion and reelection

260 See *supra* notes 113–24 and accompanying text.

261 LAFAVE ET AL., *supra* note 18, § 26.3(g), at 1214–16 (stating that the prevalent doctrine exempts from appellate review any sentence that falls within statutory limits).

262 POSNER, *supra* note 97, at 542–45 (observing that judges are generally reluctant to make decisions that may damage their reputation).

263 See, e.g., Fred B. Burnside, *Dying To Get Elected: A Challenge to the Jury Override*, 1999 WIS. L. REV. 1017, 1037–38 (observing that state judges uniformly campaign as

would normally override her incentive to clear dockets through concession-induced bench trials.

tough on crime and sometimes seek death penalty cases to get their name in the press and enhance their tough-on-crime reputations); Jason J. Czarnezki, *Voting and Electoral Politics in the Wisconsin Supreme Court*, 87 MARQ. L. REV. 323, 346 (2003) (observing that the electorate prefers judges who are tough on crime); see also Posner, *supra* note 129, at 1267 (underscoring state judges' dependency on the public opinion and observing that "[a]s long as the populist element in adjudication does not swell to the point where unpopular though innocent people are convicted of crimes or other gross departures from the rule of law occur, conforming judicial policies to democratic preference can be regarded as a good thing in a society that prides itself on being the world's leading democracy").

