

INCENTIVES, LIES, AND DISCLOSURE

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ABSTRACT

Prosecutors can force witnesses to testify and use perjury prosecutions to hold them to the provable truth. More controversially, prosecutors also offer witnesses inducements for favorable testimony, including leniency, immunity, and even cash. This ubiquitous behavior would be illegal as witness bribery, except for a longstanding tradition of sovereigns using this power, which legal doctrine now reflects. A causal analysis shows that even if prosecutors use this power only in good faith, these inducements undermine the epistemic value of witness testimony.

Due process requires, and legal doctrine assumes, that when such inducements are disclosed to the jury, they will discount the witness testimony accordingly. However, juries' success in doing so is an empirical question. We conducted three randomized experiments with 1,000 human subjects in roles of witnesses and jurors deciding vignettes based on real cases. We find that incentives have large effects on witnesses, allowing prosecutors to routinely procure favorable testimony regardless of its truth. Yet, disclosure has no detectable effects on either witnesses or jurors.

We discuss two potential reforms. First, courts could borrow from the practice with expert witnesses and use the current rules of evidence to conduct Daubert-like pretrial screening of incentivized witnesses for reliability. We frame the appropriate counterfactual question about whether the incentives would cause a witness to give the same testimony even if it were false. Second, we present the novel suggestion that prosecutors could decide whether to offer benefits to a witness based on whether she will testify to material information, but without knowing whether the information is favorable to the Government. These mechanisms may preserve the value of incentives to produce information, while minimizing false testimony.

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INTRODUCTION

Prosecutors exercise a remarkable power to give witnesses things of value in exchange for their favorable testimony. These things of value—including broad immunity from prosecution, dropped charges, reduced sentences, or even cash—are given or withheld at the discretion of the prosecutor. These things of value induce witnesses to testify and to testify in ways that support the Government’s theory of the case.¹

These inducements are extremely common.² As one assistant U.S. attorney

¹ See H. Lloyd King, Jr., *Why Prosecutors Are Permitted to Offer Inducements: A Matter of Constitutional Authority*, 29 STETSON L. REV. 155, 156–57 (1999) (listing inducements regularly extended by prosecutors in favor of testimony favorable to the Government).

² See George C. Harris, *Testimony for Sale: The Law and Ethics of Snitches and Experts*, 28 PEPP. L. REV. 1,

explains, “It is a rare federal criminal trial that does not require the use of criminal witnesses—those who have pleaded guilty to an offense and are testifying under a plea agreement, or those who are testifying under a grant of immunity.”³ Prosecutors routinely layer on extra charges to give them leverage, which can then be dropped as part of a plea deal with a cooperating witness.⁴ Compared to the sorts of incentives that operate in the business world—say a \$1,000 cash bonus to an employee—immunity or charge bargaining can be profoundly valuable to the witness, amounting to years of liberty and hundreds of thousands of dollars of wages, which would otherwise be lost to imprisonment.

The Government sometimes puts cash on the table. For example, the FBI paid over a million dollars to Emad Salem for his testimony in a terrorism trial for a plot to bomb the United Nations.⁵ Similarly, in exchange for cooperation, the government can decline to pursue asset forfeiture, restitution, fines, or other penalties that have cash value.⁶ The Government can also provide relatively minor benefits, which are nonetheless important to the witness while imprisoned, such as transfer to a different prison closer to family, a parole recommendation letter, or even better food or cigarettes.⁷ In some notorious cases, witnesses have even received drugs and conjugal visits.⁸

1 (2000) (stating that one in five federal defendants receive sentence reduction for assisting the Government).

³ Ann C. Rowland, *Effective Use of Informants and Accomplice Witnesses*, 50 S.C. L. REV. 679, 697 (1999).

⁴ See Ronald Wright & Marc Miller, *The Screening/Bargaining Tradeoff*, 55 STAN. L. REV. 29, 33 (2002) (“Plea bargaining is dishonest because the offense of conviction does not match either the charges the state filed or the reality of the offender’s behavior. A particularly noxious form of dishonesty is overcharging by prosecutors—the filing of charges with the expectation that defendants will trade excess charges for a guilty plea.”).

⁵ James C. McKinley, Jr., *Key Witness in Bomb-Plot Trial Admits Lying about His Exploits*, N.Y. TIMES (Mar. 8, 1995), <http://www.nytimes.com/1995/03/08/nyregion/key-witness-in-bomb-plot-trial-admits-lying-about-his-exploits.html> (explaining that Emad Salem received one million dollars for testimony concerning his repetitive lies).

⁶ See Morgan Cloud, *Forfeiting Defense Attorneys’ Fees: Applying an Institutional Role Theory to Define Individual Constitutional Rights*, 1987 WIS. L. REV. 1, 63–64 (describing situations “in which a defendant’s guilty plea is exchanged for a government agreement not to seek forfeiture of assets used to pay attorneys’ fees.”); see also Lindsey N. Godfrey, Note, *Rethinking the Ethical Ban on Criminal Contingent Fees: A Commonsense Approach to Asset Forfeiture*, 79 TEX. L. REV. 1699, 1722 (2001) (explaining how prosecutors may involve assets as an incentive tactic).

⁷ Cf. ALEXANDRA NATAPOFF, SNITCHING: CRIMINAL INFORMANTS AND THE EROSION OF AMERICAN JUSTICE 27–28 (2009) (exploring incentives often offered to jailhouse informants); Russell D. Covey, 49 WAKE FOREST L. REV. 1375, 1379–80 (2014) (noting that jailhouse informants are often incentivized to testify by benefits such as cigarettes, cash, improved jail conditions, and even shortened sentences).

⁸ See Barry Tarlow, *Can Prosecutors Buy Testimony?*, CHAMPION, May 2005, at 55 (discussing Sharon Cohen, *Sex, Lies, Drugs, Shame: Major Gang Prosecution Unravels in Chicago*, L.A. TIMES (Aug. 15, 1993), http://articles.latimes.com/1993-08-15/news/mn-24063_1_federal-government); see also *United States v. Boyd*, 833 F. Supp. 1277, 1365–66 (N.D. Ill. 1993) (granting a new trial for defendants after prosecutors withheld positive drug tests of prosecutorial witnesses), *aff’d* 55 F.3d 239 (7th Cir. 1995); Brae Canlen, *Prosecutorial Zeal*, CALIF. LAW. (Mar. 1999), <https://ww2.cal-lawyer.com/clstory.cfm?pubdt+NaN&eid=263747&evd=1> (describing a murder conspiracy case

Typically, these benefits are promised, but withheld until *after* the witness has actually testified in the way that the Government prefers.⁹ The prosecutors implicitly, or sometimes very explicitly, condition such benefits on the witness offering favorable testimony.¹⁰

A particularly effective promise is a prosecutor's agreement to consider filing a motion asking a witness's sentencing court to depart from federal sentencing guidelines on the basis that the witness has, *in the prosecutor's view*, provided substantial assistance to the prosecution. Without such a motion, the witness has no chance of obtaining [a] sentence below the guideline minimum.¹¹

As one commentator explains, "the controlling principle in any negotiation is that the prosecutor will only give something to get something. Unless the proffering target has something to offer that will provide significant assistance in the prosecution of another target defendant, there will be no deal."¹² As a former prosecutor explains, he was able to "wield[] . . . a . . . cudgel to compel cooperation," making "[t]he message to a defendant . . . clear: fail to cooperate at your peril."¹³

Although they have a long history, these practices are legally anomalous. For example, in a civil case where a party paid two witnesses \$640,103, the district court found that, even if the payments were not made "corruptly," they violated Rule 3.4(b) of the Rules of Professional Conduct, which pro-

in which the San Diego DA's office allowed their key witness to meet with his wife and other women at the DA's office, where they had sex); Marty Graham, *S.D. Grand Jury Rips County DA Office in Report: Handling of Informants Is Called Overzealous*, L.A. DAILY J., June 11, 1998, at A1 (summarizing the embarrassing information about the San Diego DA's dealings with the same key informant).

⁹ See e.g., *Giglio v. United States*, 405 U.S. 150, 153 (1972) (stating that witness was told that he "would definitely be prosecuted if he did not testify and that if he did testify" then the Government would exercise its "good judgment and conscience"—implicitly allowing it to evaluate the favorability of the testimony).

¹⁰ See e.g., FED. R. CRIM. P. 11(c)(1) (providing explicitly that prosecutors may include in plea agreements that the Government will "not bring, or will move to dismiss, other charges," a dispensation that would be a thing of value to a defendant). Such agreements routinely require "substantial cooperation," and that the Government can withhold the benefits if not satisfied with the witness's performance. See FED. R. CRIM. P. 11 advisory committee's note to 1975 amendment ("It is apparent, though not explicitly stated, that Rule 11(e) contemplates that the plea agreement may bind the defendant to do more than just plead guilty or nolo contendere. For example, the plea agreement may bind the defendant to cooperate with the prosecution in a different investigation. The Committee intends by its approval of Rule 11(e) to permit the parties to agree on such terms in a plea agreement.").

¹¹ Fred C. Zacharias & Bruce A. Green, *The Uniqueness of Federal Prosecutors*, 88 GEO. L.J. 207, 233 n.140 (2000) (finding that prosecutors may suggest departing from sentencing guidelines as one type of mechanism to receive favored testimony).

¹² Harris, *supra* note 2, at 17 (explaining that the prosecutor must receive something from the defendant in order to give something).

¹³ Steven M. Cohen, *What Is True? Perspectives of a Former Prosecutor*, 23 CARDOZO L. REV. 817, 818–19 (2002).

scribes attorneys from “offer[ing] an inducement to a witness that is prohibited by law.”¹⁴ All such incentivized evidence was excluded as “tainted by the ethical violations.”¹⁵ Similarly, the Illinois Supreme Court suspended from practice for eighteen months a defense attorney who paid a police officer \$50 to testify truthfully.¹⁶ At least formally, the Rules of Professional Conduct are supposed to apply to prosecutors.¹⁷ Still, the rule against giving inducements to witnesses does not seem to be enforced against prosecutors.¹⁸ Indeed, the “the practice has rarely been questioned.”¹⁹

Federal and state laws also make a felon out of “[w]hoever” offers things of value in exchange for official acts or witness testimony.²⁰ Although the

¹⁴ See *Golden Door Jewelry Creations, Inc. v. Lloyd’s Underwriters Non-Marine Ass’n*, 865 F. Supp. 1516, 1518, 1524 (S.D. Fla. 1994) (holding that defendant’s counsel in an civil action violated Rule 4-3.4(b) of the Florida Rules of Professional Conduct by paying fact witnesses to provide deposition testimony, and ordering that counsel “shall not be permitted to submit into the evidence . . . the testimony given in this case by any fact witnesses who received monetary compensation from” defendant), *aff’d in part, rev’d in part on other grounds*, 117 F.3d 1328 (11th Cir. 1997); see also J. Richard Johnston, *Paying the Witness: Why Is it OK for the Prosecution, but Not the Defense?*, 11 CRIM. JUST., Winter 1997, at 23–24 (discussing Model Rule of Professional Conduct 3.4(b) and *Golden Door*).

¹⁵ *Golden Door*, 865 F. Supp. at 1518; see also Johnston, *supra* note 14, at 24 (quoting *Golden Door Jewelry Creations, Inc.*, 865 F. Supp. at 1518). See generally Douglas R. Richmond, *Compensating Fact Witnesses: The Price Is Sometimes Right*, 42 HOFSTRA L. REV. 905 (2014) (discussing legal doctrine concerning fact-witness compensation and caselaw on both sides).

¹⁶ *In re Kien*, 372 N.E.2d 376, 379 (Ill. 1977); see also *In re Howard*, 372 N.E.2d 371, 375 (Ill. 1977) (“The damage that would immediately accrue to our system of justice, should it be acceptable to pay for truthful testimony, is manifest.”).

¹⁷ See Harris, *supra* note 2, at 7 (discussing the rules, including Rule 3-3.1, on prosecutors in particular); see also ABA STANDARDS FOR CRIMINAL JUSTICE: PROSECUTION AND DEFENSE FUNCTION § 3-3.2 (AM. BAR. ASS’N 2015), https://www.americanbar.org/groups/criminal_justice/standards/ProsecutionFunctionFourthEdition.html (“(a) A prosecutor should not compensate a witness, other than an expert, for giving testimony, but it is not improper to reimburse an ordinary witness for the reasonable expenses of attendance upon court, attendance for depositions pursuant to statute or court rule, or attendance for pretrial interviews. Payments to a witness may be for transportation and loss of income, provided there is no attempt to conceal the fact of reimbursement. (b) . . . It is also proper for a prosecutor to so advise a witness whenever the prosecutor knows or has reason to believe that the witness may be the subject of a criminal prosecution. However, a prosecutor should not so advise a witness for the purpose of influencing the witness in favor of or against testifying.”).

¹⁸ See Fred C. Zacharias, *The Professional Discipline of Prosecutors*, 79 N.C. L. REV. 721, 753 (2001) (showing that Zacharias’s research assistants found thirty reported disciplinary cases involving Rule 3.4(b), none of which were directed against prosecutors).

¹⁹ See Zacharias & Green, *supra* note 11, at 232 (“The rules have been interpreted broadly to forbid offering any inducements other than fair compensation for lost time. As a practical matter, however, prosecutors have been exempt from this prohibition. Prosecutors regularly offer witnesses inducements that are specifically prohibited by the terms of the rules. Again, this practice has rarely been questioned.”) (footnote omitted).

²⁰ See, e.g., 18 U.S.C. § 201(c)(2) (2012) (“(c) Whoever . . . (2) directly or indirectly, gives, offers, or promises anything of value to any person, for or because of testimony under oath or affirmation given or to be given by such a person as a witness upon a trial . . . before any court . . . shall be fined under this title or imprisoned for not more than two years, or both.”); see also David A. Sklansky, *Starr, Singleton, and the Prosecutor’s Role*, 26 FORDHAM URB. L.J. 509, 518–19 (1999) (distinguishing 18

Supreme Court has not considered the question, the circuits seem to be in unanimity that federal prosecutors are above this law. In one such case, a federal prosecutor enlisted Napoleon Douglas to testify against his co-conspirator, Sonya Singleton, in a money laundering and cocaine distribution scheme.²¹ The prosecutor explained to Douglas that he faced a very long sentence if convicted, and offered a deal that could greatly reduce his sentence, depending on the “nature and extent” of his cooperation.²² A panel of the Tenth Circuit Court of Appeals held that such a deal amounted to bribery, a landmark decision that could have caused a profound change to the practice of criminal law.²³ The case was reconsidered en banc, on the question of whether “whoever” as used in the federal bribery statute, 18 U.S.C. § 201(c), applies to federal prosecutors who are acting as agents of the United States government. Because the United States is a thing and not a person, the en banc court reasoned that “construing ‘whoever’ to include the government is semantically anomalous.”²⁴

This reasoning is both overinclusive and underinclusive. The pronoun “whoever” appears throughout the criminal code, including in the crimes of falsifying or destroying records²⁵ or transmitting national security information,²⁶ but the courts have not (yet) held that prosecutors are above those laws. But even with regard to witness bribery, such reasoning would seem to apply to any person who is working on behalf of the Government, including public defenders.²⁷ Yet they do not enjoy these powers.

These anomalies suggest that the holding really is not about the text of the

U.S.C. § 201 and its gratuity provisions, which have neither a falsehood nor a “corruptly” requirement, from 18 U.S.C. §§ 1503 and 1512, and discussing truth as a defense thereto). *But see* United States v. Moody, 977 F.2d 1420, 1425 (11th Cir. 1992) (finding that an ordinary person would easily conclude exchanging testimony for anything of value constitutes bribery); United States v. Blaszak, 349 F.3d 881, 887 (6th Cir. 2003) (explaining that witness bribery statute, 18 U.S.C. § 201(c)(3), applies to truthful testimony).

²¹ United States v. Singleton, 165 F.3d 1297, 1298 (10th Cir. 1999); *see* Timothy Hollis, *An Offer You Can't Refuse?* United States v. Singleton and the Effects of Witness/Prosecutorial Agreements, 9 B.U. PUB. INT. L.J. 433, 43547 (2000) (summarizing the facts of the case).

²² *Singleton*, 165 F.3d at 1298.

²³ *Id.* (reviewing the facts of the case and summarizing the panel's holding).

²⁴ *Id.* at 1300; *see also* Nardone v. United States 308 U.S. 338, 341 (1939) (providing the test for determining when a statute applies to the Government); Tracy A. Levin, Comment, *Bribery or Effective Prosecution—Should Prosecutors Be Allowed to Give Something of Value to a Witness?*, 24 S. ILL. U. L.J. 137, 143 (1999) (stating that the *Nardone* Court “set forth a canon of construction that [a] statute[] do[es] not apply to the government unless the statute (1) expressly states that it does, (2) would not cause the government to lose its sovereignty interests, or (3) would not be absurd to do so”).

²⁵ 18 U.S.C. § 2071 (2012).

²⁶ 18 U.S.C. § 793 (2012).

²⁷ *See generally* Johnston, *supra* note 14 (explaining prosecutors and defense attorneys are subject to different standards for witness compensation, and arguing that “compensating a witness for testifying involves an identical threat to the integrity of the judicial system whether the witness testifies for the prosecution or the defense”).

statute. More importantly, the “ingrained practice of granting lenience in exchange for testimony has created a vested sovereign prerogative in the government.”²⁸ This prerogative seems to be constrained only by custom: the court claimed that “[o]ur conclusion in no way permits an agent of the government to step beyond the limits of his or her office to make an offer to a witness other than one traditionally exercised by the sovereign.”²⁹ In short, tradition trumps law.

At least ten other circuit courts have similarly held that § 201(c)(2) does not apply to prosecutors.³⁰ In *United States v. Smith*, the court chided a defendant for “rais[ing] an argument that has been rejected by *every* circuit that has considered it.”³¹ The Third, Fourth, Fifth, and Eighth Circuits have explicitly extended the exemption beyond prosecutors trading leniency for testimony, to monetary enrichment for testimony.³² Other courts have drawn

²⁸ *Singleton*, 165 F.3d at 1301.

²⁹ *Id.* at 1302.

³⁰ Korin K. Ewing, *Establishing an Equal Playing Field for Criminal Defendants in the Aftermath of* *United States v. Singleton*, 49 DUKE L.J. 1371, 1395 n.115 (2000); *see also, e.g.*, *United States v. Richardson*, 195 F.3d 192, 194 (4th Cir. 1999) (“§ 201(c)(2) does not apply to the government when acting in accordance with its statutory authority”); *United States v. Hunte*, 193 F.3d 173, 174 (3d Cir. 1999) (“[S]ection 201(c)(2) does not prohibit the government from promising leniency to cooperating witnesses in exchange for truthful testimony.”); *United States v. Lara*, 181 F.3d 183, 197 (1st Cir. 1999) (“[S]ection 201(c)(2) cannot be invoked as a bright-line barrier to the government’s use of witnesses whose cooperation has been secured by agreements not to prosecute or by promises of recommended leniency [S]ection 201(c)(2) does not apply at all to the federal sovereign *qua* prosecutor.”); *United States v. Stephenson*, 183 F.3d 110, 118 (2d Cir. 1999) (“We . . . hold that 18 U.S.C. § 201(c)(2) does not apply to the United States or to any Assistant United States Attorney acting within his or her official capacity.”); *United States v. Condon*, 170 F.3d 687, 689 (7th Cir. 1999) (holding that § 201(c)(2) does not apply where prosecutors offer to forgo prosecution or reduce a sentencing recommendation in return for testimony because “[f]orgoing criminal prosecution (or securing a lower sentence) is not a ‘thing of value’ within the meaning of § 201(c)(2)”); *United States v. Johnson*, 169 F.3d 1092, 1098 (8th Cir. 1999) (holding that § 201(c)(2) “does not sweep so broadly as to prevent prosecutors from offering leniency to an individual in exchange for truthful testimony”); *United States v. Lowery*, 166 F.3d 1119, 1124 (11th Cir. 1999) (“[W]e hold that agreements in which the government trades sentencing recommendations or other official action or consideration for cooperation, including testimony, do not violate 18 U.S.C. § 201(c)(2).”); *United States v. Ramsey*, 165 F.3d 980, 991 (D.C. Cir. 1999) (“[W]e hold that 18 U.S.C. § 201(c)(2) does not prohibit the Government from granting leniency in exchange for a witness’s truthful testimony.”); *United States v. Haese*, 162 F.3d 359, 368 (5th Cir. 1998) (“[W]e must reject Haese’s contention that 18 U.S.C. § 201(c)(2) is violated when testimony is obtained in exchange for a favorable plea agreement.”); *United States v. Ware*, 161 F.3d 414, 425 (6th Cir. 1998) (“[E]ven if we could make the great leap necessary to include prosecuting attorneys within the scope of § 201(c)(2), we would not apply the exclusionary rule to suppress the testimony of cooperating accomplices.”).

³¹ *United States v. Smith*, 196 F.3d 1034, 1038–39 (9th Cir. 1999) (emphasis added) (invoking tradition, saying that it would not “prohibit the government from conferring immunity, leniency, and other traditionally permissible benefits upon cooperating witnesses in the course of a legitimate prosecution”).

³² *United States v. Harris*, 210 F.3d 165, 167 (3d Cir. 2000); *United States v. Anty*, 203 F.3d 305, 310–11 (4th Cir. 2000); *United States v. Barnett*, 197 F.3d 138, 144–45 (5th Cir. 1999); *United States v. Albanese*, 195 F.3d 389, 394–95 (8th Cir. 1999).

the line at immunity and leniency, excluding other things of value.³³

Much of the prior commentary of this practice by courts and scholars has turned on sheer deference to tradition, narrow doctrinal analyses, or expressed conclusory normative concerns about the ethics of prosecutors. There are also accumulating anecdotes of wrongful convictions caused by prosecutors paying incentives to witnesses. Some have proposed drastic reforms, without consideration of the full range of institutional constraints.

We instead approach the problem using epistemology, behavioral science evidence, and institutional design. Part I reviews the constitutional rights implicated. Part II offers a counterfactual method of analysis that reveals the causal relationships between truth, incentives, and testimony, and offers a framework for jurors and analysts to evaluate these practices and the testimony that depends on them. Part III reviews literature from the behavioral sciences and describes three novel experiments, including the methods, results, and discussion of each. In light of the disconcerting findings, Part III discusses two potential reforms that may reduce the risk of wrongful conviction.

I. CONSTITUTIONAL RIGHTS IMPLICATED

A constellation of constitutional rights is potentially implicated by the use of incentivized testimony in criminal cases. Particular concerns arise if such testimony is unreliable. Incentivized testimony, we argue, represents a singular divergence from many well established constitutional norms, though courts have not consistently recognized it as such.

Incentivized testimony touches primarily on defendants' rights to due process, to a trial by jury designed to weigh witness testimony for bias and veracity, and to not be punished when actually innocent. As background we review these three fundamental rights before turning more directly to the doctrine on incentivized testimony in particular.

First, defendants are entitled to be convicted only upon due process of law.³⁴ Due process bars the state from "contriv[ing] a conviction through the pretense of a trial which in truth is but used as a means of depriving a defendant of liberty through a deliberate deception of court and jury by the presentation of testimony known to be perjured."³⁵ This bar against false testimony also extends to situations where the state merely fails to correct

³³ See *Mataya v. Kingston*, 371 F.3d 353, 359 (7th Cir. 2004) ("To pay in money [is forbidden]; immunity from prosecution, a lighter sentence, placement in a witness-protection program, and other breaks are lawful coin in this realm") (first citing *United States v. Condon*, 170 F.3d 687, 688–91 (7th Cir. 1999); then citing *Singleton*, 165 U.S. at 1302).

³⁴ U.S. CONST. amend. V; *id.* amend. XIV, § 1.

³⁵ *Brady v. Maryland*, 373 U.S. 83, 86 (1963) (quoting *Mooney v. Holohan*, 294 U.S. 103, 112 (1935)).

false evidence.³⁶ Thus, it is axiomatic that the knowing introduction of false testimony violates due process. More generally, it also appears that due process protects, in large part, the truth-seeking mission of the jury. If incentivized testimony is unreliable and truth-thwarting, admission of such testimony may arguably implicate due process.

Second, defendants have a right to trial by an impartial jury, functioning as factfinder in their case, and defendants can only be convicted on proof beyond a reasonable doubt.³⁷ The Supreme Court has asserted that the rights provided by the Due Process Clauses of the Fifth and Fourteenth Amendments together with the Sixth Amendment's right to a jury trial "indisputably entitle a criminal defendant to 'a jury determination that [he] is guilty of every element of the crime with which he is charged, beyond a reasonable doubt.'"³⁸ Of course, the assessment of a witness's credibility has always been a primary function of jurors. Nonetheless, if a jury were functionally unable to properly weigh incentivized testimony, then the jury trial right would be arguably undermined in practice.

Finally, defendants arguably have some form of due process right not to be punished while they are actually innocent. In *Herrera v. Collins*, the Supreme Court noted a variety of protections designed to prevent conviction of innocent defendants, including the presumption of innocence and a number of the rights mentioned herein.³⁹ Furthermore, the Supreme Court noted that at least in some capital cases, the Eighth Amendment barred the imposition of sentence where the convicted was actually innocent.⁴⁰ It is worth noting, however, that the Supreme Court did not expressly recognize a freestanding constitutional actual innocence claim.⁴¹ One scholar's reading of the concurrences in *Herrera*, however, suggests that a "shadow majority" of

³⁶ *Giglio v. United States*, 405 U.S. 150, 153 (1972) (quoting *Napue v. Illinois*, 360 U.S. 264, 269 (1959)).

³⁷ U.S. CONST. amend. VI; *Apprendi v. New Jersey*, 530 U.S. 466, 476–78 (2000).

³⁸ *Apprendi*, at 476–77 (quoting *United States v. Gaudin*, 515 U.S. 506, 510 (1995)).

³⁹ *Herrera v. Collins*, 506 U.S. 390, 398–99 (1993).

⁴⁰ *See id.* at 419 (O'Connor, J., concurring) ("[E]xecuting the innocent is inconsistent with the Constitution.")

⁴¹ *McQuiggin v. Perkins*, 133 S. Ct. 1924, 1931 (2013) ("We have not resolved whether a prisoner may be entitled to habeas relief based on a freestanding claim of actual innocence."); *see also* John M. Leventhal, *A Survey of Federal and State Courts' Approaches to a Constitutional Right of Actual Innocence: Is There a Need for a State Constitutional Right in New York in the Aftermath of CPL § 440.10(G-1)?*, 76 ALB. L. REV. 1453, 1465–66 (2013) (discussing the Supreme Court's analysis of whether a petitioner may use actual innocence to overcome the expiration of the statute of limitations on an appeal).

five justices recognized such a right,⁴² and lower courts have recognized free-standing actual innocence claims.⁴³ Thus, any conviction based on such testimony would potentially touch on a defendant's right not to be punished when actually innocent to the extent such testimony was not actually true.

Incentives may also implicate a defendant's equal protection rights. While prosecutors enjoy broad discretion, Judge Alexander J. Menza noted that, under Supreme Court law, a prosecution might violate equal protection "if the choice to prosecute is based on an arbitrary and unjustifiable classification."⁴⁴ Menza argues that the grant of immunity may be a prime example of an Equal Protection Clause violation, as the decision of who to prosecute and who to immunize often is "based on impermissible considerations, bearing no rational relationship to a legitimate government purpose."⁴⁵ Nonetheless, such a showing may be difficult in particular cases.⁴⁶

The foregoing review is largely aspirational. Courts and commentators assume "that the danger from resulting incentives for perjury or shaped testimony is adequately mitigated by disclosure, cross-examination, and cautionary jury instructions."⁴⁷ "[T]he principal evil at which the Confrontation

⁴² Jonathan M. Kirshbaum, *Actual Innocence after Friedman v. Rehal: The Second Circuit Pursues a New Mechanism for Seeking Justice in Actual Innocence Cases*, 31 PACE L. REV. 627, 661–62 (2011); see also *Herrera*, 506 U.S. at 419 (O'Connor, J., concurring) (arguing that it is unconstitutional to execute an actually innocent prisoner); *id.* at 429 (White, J., concurring) (arguing same); *id.* at 430–46 (Blackmun, J., dissenting) (arguing same).

⁴³ See, e.g., *In re Davis*, No. CV409-130, 2010 WL 3385081, at *43 (S.D. Ga. Aug. 24, 2010) (concluding that there was a cognizable actual innocence claim); *Robinson v. Dinwiddie*, No. CIV-07-4320D, 2009 WL 2778657, at *4–5 (W.D. Okla. Aug. 31, 2009) (finding that there is an actual innocence claim in capital cases); *Tomlinson v. Burt*, 509 F. Supp. 2d 771, 776–77 (2007) (considering both substantive and procedural claims of actual innocence); *Felker v. Turpin*, 83 F.3d 1303, 1312 (1996) (assuming, as did O'Connor's concurrence in *Herrera*, that actual innocence may be the foundation for habeas claims in certain cases); Kirshbaum, *supra* note 42, at 663 (summarizing the *Davis* court's actual innocence analysis); Matthew Aglioloro, Note, *A Case for Actual Innocence*, 23 CORNELL J.L. PUB. POL'Y 635, 646 n.56 (2014) (listing cases theoretically supporting "a freestanding claim of actual innocence").

⁴⁴ Alexander J. Menza, *Witness Immunity: Unconstitutional, Unfair, Unconscionable*, 9 SETON HALL CONST. L.J. 505, 531 (1999) (arguing that granting a witness immunity in exchange for testimony results in unequal enforcement of the laws); see also *Oyler v. Boles*, 368 U.S. 448, 456 (1962) (suggesting that selective enforcement of laws based on "unjustifiable . . . arbitrary classification[s]" may violate the Equal Protection Clause).

⁴⁵ Menza, *supra* note 44, at 532.

⁴⁶ See *McCleskey v. Kemp*, 481 U.S. 279, 292 (1987) ("[T]o prevail under the Equal Protection Clause, McCleskey must prove that the decision makers in his case acted with discriminatory purpose."); *United States v. Stewart*, 590 F.3d 93, 122 (2d Cir. 2009) ("[T]he decision as to whether to prosecute generally rests within the broad discretion of the prosecutor, and a prosecutor's pretrial charging decision is presumed legitimate.") (quoting *United States v. Sanders*, 211 F.3d 711, 716 (2d Cir. 2000)).

⁴⁷ Harris, *supra* note 2, at 19; see also Spencer Martinez, *Bargaining for Testimony: Bias of Witnesses Who Testify in Exchange for Leniency*, 47 CLEV. ST. L. REV. 141, 142 (1999) ("Clearly the most important safeguard against false testimony is the defendant's right to cross-examine the cooperating witness

Clause was directed was the civil-law mode of criminal procedure, and particularly its use of *ex parte* examinations as evidence against the accused.⁴⁸ Indeed, the adoption of the Confrontation Clause in the Sixth Amendment at the time of the founding was intended to prevent exactly these forms of incentivized but uncrossed evidence.⁴⁹ The right to confront witnesses includes a right to conduct an *effective* cross examination.⁵⁰ Specifically, the Supreme Court has held that where a court does “not permit defense counsel to ‘expose to the jury the facts from which jurors, as the sole triers of fact and credibility, could appropriately draw inferences relating to the reliability of the witness’ . . . such restrictions may ‘effectively . . . emasculate the right of cross-examination itself.’”⁵¹ Such a right is directly at issue when incentivized witnesses testify at trial.

In addition to cross-examination courts direct that “the [trial] judge instruct the jury that in weighing the testimony of such witnesses they give adequate attention to the motives which may underlie such testimony.”⁵² The Supreme Court “has long recognized the ‘serious questions of credibility’ informers pose. [It has] therefore allowed defendants ‘broad latitude to probe [informants’] credibility by cross-examination’ and [has] counseled submission of the credibility issue to the jury ‘with careful instructions.’”⁵³

The Supreme Court has held that, to satisfy due process, the prosecution must generally disclose incentives given to a witness and the defendant must also be given an opportunity to confront that witness regarding the incentive.⁵⁴

as to bias.”). *But see* *Napue v. Illinois*, 360 U.S. 264, 269 (1959) (“The jury’s estimate of the truthfulness and reliability of a given witness may well be determinative of guilt or innocence, and it is upon such subtle factors as the possible interest of the witness in testifying falsely that a defendant’s life or liberty may depend.”).

⁴⁸ *Crawford v. Washington*, 541 U.S. 36, 50 (2004).

⁴⁹ *Id.* at 51. We note, however, that there are exceptions to this rule. *See, e.g.*, *Davis v. Washington*, 547 U.S. 813, 833 (2006) (noting that where witness is unavailable due to defendant’s actions, testimony is admissible); *Michigan v. Bryant*, 562 U.S. 344, 377–78 (2011) (noting Confrontation Clause does not bar admission of statements to law enforcement when given during an “ongoing emergency”) (quoting *Davis*, 547 U.S. at 822); *see also* Kelly Rutan, *Procuring the Right to an Unfair Trial: Federal Rule of Evidence 804(b)(6) and the Due Process Implications of the Rule’s Failure to Require Standards of Reliability for Admissible Evidence*, 56 AM. U. L. REV. 177, 182–94 (2006) (describing the exceptions to the Confrontation Clause).

⁵⁰ *Delaware v. Fensterer*, 474 U.S. 15, 19–20 (1985) (per curiam).

⁵¹ *Id.* at 19 (first quoting *Davis v. Alaska*, 415 U.S. 308, 318 (1974); then quoting *Smith v. Illinois*, 390 U.S. 129, 131 (1968)).

⁵² *United States v. Insana*, 423 F.2d 1165, 1169 (2d Cir. 1970).

⁵³ *Banks v. Dretke*, 540 U.S. 668, 701–02 (2004) (citations omitted) (quoting *On Lee v. United States*, 343 U.S. 747, 757 (1952)). As an aside, this rationale should apply equally to other contexts outside the criminal law. For example, we might allow criminal defendants and civil litigants to bribe witnesses, if we thought that the informed factfinder could simply discount the testimony accordingly.

⁵⁴ *See Giglio v. United States*, 405 U.S. 150, 153–55 (1972); *Brady v. Maryland*, 373 U.S. 83, 87 (1963) (“We now hold that the suppression by the prosecution of evidence favorable to an accused upon

Under the current federal disclosure law, primarily set forth in *Brady v. Maryland* and *Giglio v. United States*, prosecutors are required to disclose all potentially-exculpatory, material evidence, which includes evidence—such as the fact of incentives—that can be used to impeach a prosecution witness.⁵⁵ However, *Brady* disclosures of impeachment evidence are not required at the defendant’s plea-bargaining stage, where the vast majority of cases conclude.⁵⁶

In *Brady*, the United States Supreme Court elucidated a defendant’s constitutional rights as they pertained to the disclosure of information in a criminal trial.⁵⁷ The Supreme Court held that “the suppression by the prosecution of evidence favorable to an accused upon request violates due process where the evidence is material either to guilt or to punishment, irrespective of the good faith or bad faith of the prosecution.”⁵⁸ Thus, under *Brady*, the Fifth and Fourteenth Amendments require that the prosecutor disclose potentially exculpatory evidence when that evidence could be considered material to the outcome of the trial. *Brady* thus set forth a form of post hoc reasoning for appellate courts: a conviction should be overturned where a prosecutor did not provide evidence to the defense, and that evidence would have had some effect on the outcome of the trial.⁵⁹

request violates due process where the evidence is material either to guilt or to punishment”); see also U.S. CONST. amend. VI (“[T]he accused shall enjoy the right . . . to be confronted with the witnesses against him . . .”). This requirement is subject to *Brady*’s materiality disclosure, however, and the Court reversed in *Giglio*, because the incentivized testimony was “an important issue in the case, and evidence of any understanding or agreement as to a future prosecution would be relevant to [witness] credibility and the jury was entitled to know of it.” *Giglio*, 405 U.S. at 155.

⁵⁵ See *Giglio*, 405 U.S. at 153–54; *Brady*, 373 U.S. at 87; Cara Spencer, *Prosecutorial Disclosure Timing: Does Brady Trump the Jencks Act?*, 26 GEO. J. LEGAL ETHICS 997, 997–98 (2013) (describing what *Brady* requires); see also, e.g., *United States v. Bagley*, 473 U.S. 667, 683–84 (1985) (holding that prosecutors must disclose witness incentives to testify if disclosure of those incentives would materially affect the result of the trial); *United States v. Agurs*, 427 U.S. 97, 103, 114 (1976) (applying *Brady*, but holding that nondisclosure of a witness’s prior criminal record was not material because “the arrest record was not requested and did not even arguably give rise to any inference of perjury [on the part of the witness with the record], . . . after considering it in the context of the entire record the trial judge remained convinced of respondent’s guilt beyond a reasonable doubt, and . . . [the trial judge’s] firsthand appraisal of the record was thorough and entirely reasonable”); cf. DARRYL K. BROWN, *FREE MARKET CRIMINAL JUSTICE: HOW DEMOCRACY AND LAISSEZ FAIRE UNDERMINE THE RULE OF LAW* 140–141 (2016) (“[T]he disclosure duty’s limitation to ‘material’ evidence, under a definition of materiality that means not merely ‘relevant’ but something that undermines confidence in a conviction[,] . . . leaves it to prosecutors to sort out, in private, what undisclosed information is meaningful enough to fall under the disclosure duty.”).

⁵⁶ *United States v. Ruiz*, 536 U.S. 622, 633 (2002) (“[T]he Constitution does not require the Government to disclose material impeachment evidence prior to entering a plea agreement with a criminal defendant.”). In U.S. district courts in 2001, there were 77,145 total defendants. Of the 68,533 defendants that were convicted, 64,894 pleaded guilty. HINDELANG CRIMINAL JUSTICE CENT., UNIV. AT ALBANY, *SOURCEBOOK OF CRIMINAL JUSTICE STATISTICS 2003*, at 418 tbl.5.17 (2003), <http://www.albany.edu/sourcebook/pdf/t517.pdf>.

⁵⁷ *Brady*, 373 U.S. at 86–88.

⁵⁸ *Id.* at 87.

⁵⁹ Spencer, *supra* note 55, at 1002.

Over the following five decades, this rule has been expanded or explained in a few key ways.⁶⁰ First, *Giglio v. United States* expanded the *Brady* disclosure rule to include evidence undermining witness credibility.⁶¹ Second, *Brady*'s materiality requirement was further elucidated to mean “when there is ‘any reasonable likelihood’ [given evidence] could have ‘affected the judgment of the jury.’”⁶² Materiality is not understood to mean that a defendant “‘more likely than not’ would have been acquitted had the new evidence been admitted,” but rather that the “new evidence is sufficient to ‘undermine confidence’ in the verdict.”⁶³

In addition, the Jencks Act requires that, *after* a witness for the prosecution has testified in open court, the prosecution disclose prior statements made by the witness, which may include contrary statements given prior to an incentive deal being reached.⁶⁴ The Jencks Act has a broader range than *Brady*, in that a party can request any statement that “relates to the subject matter as to which the witness has testified.”⁶⁵

The courts express resounding faith in the jury’s ability to use these mandated disclosures to calibrate its reliance on incentivized testimony. Consider the First Circuit decision, *United States v. Dailey*.⁶⁶ The district court found that the Government’s agreements with witnesses—that were explicitly contingent on the Government being satisfied with their testimony—were “so likely to induce perjurious testimony that to allow [the witnesses] to testify would be to violate defendant’s due process rights.”⁶⁷ The court of appeals reversed, expressing “concern and uneasiness . . . over the coercive potential” of the agreements but finding that the “traditional safeguards”—disclosing the agreements to the jury, allowing cross-examination of the accomplices about the agreements and a cautionary instruction regarding the risks of the agreements—were sufficient to protect the due process rights of the defendant.⁶⁸

Concomitantly with the requirement to disclose material evidence, due process protects a defendant against prosecutorial misconduct.⁶⁹ Justice Marshall, dissenting in *United States v. Bagley*, explained: “A deliberate effort of the

⁶⁰ See *Weary v. Cain*, 136 S. Ct. 1002, 1006 (2016) (outlining the developments of the *Brady* doctrine).

⁶¹ *Giglio v. United States*, 405 U.S. 150, 153–54 (1972) (clarifying that the rule stated in *Brady* applies to evidence undermining witness credibility).

⁶² *Weary*, 136 S. Ct. at 1006 (quoting *Giglio*, 405 U.S. at 154).

⁶³ *Id.* (quoting *Smith v. Cain*, 565 U.S. 73, 75 (2012)).

⁶⁴ 18 U.S.C. § 3500 (2012).

⁶⁵ 18 U.S.C. § 3500(b).

⁶⁶ 759 F.2d 192 (1st Cir. 1985).

⁶⁷ *Id.* at 193 (citation omitted).

⁶⁸ *Id.* at 196.

⁶⁹ See *United States v. Bagley*, 473 U.S. 667, 679 n.8 (1985) (explaining that “the *Brady* rule has its roots in a series of cases dealing with convictions based on the prosecution’s knowing use of perjured testimony”).

prosecutor to undermine the search for truth clearly is in the category of offenses antithetical to our most basic vision of the role of the state in the criminal process.”⁷⁰ In fact, some forms of prosecutorial misconduct might be deemed so egregious as to be beyond the scope of harmless error review.⁷¹ It is clear that a prosecutor commits misconduct by suborning perjury, but prosecutions against states’ witnesses for perjury are rare.⁷² Further, proving prosecutorial misconduct is difficult: a defendant must not simply show that the prosecutor was culpable of misconduct, but that the prosecutor’s misconduct created an unfair trial.⁷³ Finally, prosecutorial misconduct can be difficult to define in the first place. The Supreme Court has noted: “The line separating acceptable from improper advocacy is not easily drawn; there is often a gray zone.”⁷⁴ But it appears that incentivizing witnesses, short of clearly suborning perjury,⁷⁵ does not violate a prosecutor’s ethical duties.⁷⁶ To obtain relief under a prosecutorial discretion standard, a defendant would need to show, first, that a prosecutor knew the incentive would elicit false testimony, and even then, that the false testimony rendered the trial unfair. This is a high bar to expect of criminal defendants in order to vindicate their due process rights.

Overall, the use of incentivized testimony implicates the constitutional rights of defendants, and courts assume that the threat is largely mitigated by three imperfect solutions: disclosure by the prosecutor, cross-examination of the witness, and instruction of the jury. Whether these mechanisms suffice is the question remaining.

II. A FRAMEWORK FOR CAUSAL INFERENCE

A. *The Counterfactual of Non-Incentivized Testimony*

To understand the unique dangers posed by incentives, it is useful to carefully specify the counterfactual, i.e., the outcomes that would obtain but for a prosecutor’s offer of incentives. Counterfactual reasoning can explain both

⁷⁰ *Id.* at 704–05 n.6 (Marshall, J., dissenting).

⁷¹ *Id.*

⁷² *See* United States v. Williams, 504 U.S. 36, 61 (1992) (Stevens, J., dissenting) (noting that knowingly using perjured testimony can be deemed prosecutorial misconduct); Johnston, *supra* note 14, at 22 (“While it is common for the defense to claim that these witnesses commit perjury for rewards of money or leniency, there appears to be only one reported case in which an informer testifying as a government witness in a criminal case has been prosecuted for perjury.”) (citing United States v. Wallach, 935 F.2d 445, 455 n.2 (2d Cir. 1991)).

⁷³ Smith v. Phillips, 455 U.S. 209, 220 (1982) (quoting United States v. Agurs, 427 U.S. 97, 110 (1976)).

⁷⁴ United States v. Young, 470 U.S. 1, 7 (1985).

⁷⁵ *See Williams*, 504 U.S. at 61.

⁷⁶ *See generally* Johnston, *supra* note 14 (analyzing the extent to which prosecutors can compensate witnesses without violating 18 U.S.C. § 201(c)(2)).

why the prosecutor provides incentives, and how jurors should utilize incentivized testimony.

Our counterfactual analysis should begin with a recognition that witnesses have all sorts of reasons for which they may prefer not to testify or prefer not to testify in a way that helps the Government. They may want to avoid publicity, or they may have personal affinity for the defendant, or they may fear social opprobrium or retribution by the defendant's friends or family. To make witnesses overcome such resistance to testifying substantively, prosecutors have a range of tools, shown in Table 1. Most fundamentally, both prosecutors and defense attorneys enjoy the power to subpoena witnesses to testify in court.⁷⁷ Witnesses who refuse to testify can be jailed until they do so.⁷⁸ If the prosecutor perceives that a material witness is likely to flee, the prosecutor can detain her.⁷⁹

Witnesses can take the Fifth, refusing to testify. However, prosecutors can make a narrow grant of "use immunity," as the minimum necessary to overcome a witness's Fifth Amendment right not to incriminate himself or herself. Congress formalized this narrow immunity in 18 U.S.C. § 6002, which allows witnesses to be compelled to testify, but prohibits prosecutors from using anything they say against them.⁸⁰ Importantly, such immunized witnesses can still be prosecuted for their role in the crime to which they are testifying, if the prosecutor has sufficient other evidence.⁸¹ In this sense, the grant of use-immunity provides no real incentive for a witness to testify favorably to the prosecutor.⁸²

Similarly, prosecutors, defense attorneys, and civil attorneys can all pay a witness's bona fide expenses (e.g., travel to court).⁸³ If the witness fears retribution, the prosecutor can also pay for witness protection, including a

⁷⁷ FED. R. CRIM. P. 17.

⁷⁸ FED. R. CRIM. P. 17(g).

⁷⁹ See Wesley MacNeil Oliver, *Material Witness Detentions after al-Kidd*, 100 KY. L.J. 293 (2011) (discussing, *Ashcroft v. al-Kidd*, 563 U.S. 731 (2011) and 18 U.S.C. § 3144).

⁸⁰ 18 U.S.C. § 6002 (2012) ("Whenever a witness refuses, on the basis of his privilege against self-incrimination, to testify or provide other information in a proceeding . . . and the person presiding over the proceeding communicates to the witness an order issued under this title, the witness may not refuse to comply with the order on the basis of his privilege against self-incrimination; but no testimony or other information compelled under the order . . . may be used against the witness in any criminal case.").

⁸¹ *Id.* (limiting the immunity to the compelled testimony "or any information directly or indirectly derived from such testimony").

⁸² See Graham Hughes, *Agreements for Cooperation in Criminal Cases*, 45 VAND. L. REV. 1, 6 (1992) ("[T]he subject remains vulnerable to the possibility of a prosecution based on evidence not derived from the testimony compelled by the grant. So narrow a protection may be an insufficient inducement to secure full cooperation. The greater security of transactional immunity may be necessary to convince the subject to cooperate." (footnote omitted)).

⁸³ The bribery statute provides that compensation for time lost, travel, and subsistence are not forbidden. 18 U.S.C. § 201(d) (2012).

new home and job.⁸⁴ While useful tools for prosecutors, these also are not incentives, if they are carefully constructed to leave a witness at par, compared to the counterfactual in which the witness does not testify favorably.

Prosecutors can also go after the defendant or anyone else who tries to tamper with the witness's truthful testimony.⁸⁵ The Government can also attack changed or false testimony. If a witness makes a statement to a grand jury or federal investigator, but then threatens to testify to the contrary under oath at trial, the prosecutor (but not the defense attorney) can threaten him with a false statements prosecution.⁸⁶ A mere inconsistency with a prior statement to an investigator can be criminal, even if the prosecutor lacks independent evidence that the statement was false.⁸⁷ Finally, the prosecutor (but not the defense attorney) can threaten prosecutions for perjury, to discourage provably false testimony.⁸⁸

These powers, shown in in Table 1, form the backdrop for the use of prosecutorial incentives. A prosecutor can compel a witness to testify substantively, and hold her to facts that are otherwise provable.

⁸⁴ 18 U.S.C. § 3521(b) (2012) (authorizing the federal government to pay witnesses but only to the extent "necessary to protect the person involved from injury and otherwise to assure the health, safety, and welfare of that person"); *see also* *United States v. Albanese*, 195 F.3d 389, 397 (8th Cir. 1999) (Heaney, J., dissenting) (explaining that "the plain purpose of [the] statute is protection, not compensation").

⁸⁵ *See* 18 U.S.C. § 1510 (2012) (criminalizing obstruction of justice, including by bribery of an informant); *see also* 18 U.S.C. § 1512 (2012) (criminalizing tampering with a witness, victim, or informant); 18 U.S.C. § 1513 (2012) (criminalizing retaliating against a witness).

⁸⁶ *See* 18 U.S.C. § 1623 (2012) (criminalizing false statements made to grand juries); *see also* 18 U.S.C. § 1001 (2012) (criminalizing false statements generally); *United States v. Rodgers*, 466 U.S. 475, 477 (1984) (holding that 18 U.S.C. § 1001 applies to criminal investigations); *cf.* *Brogan v. United States*, 522 U.S. 398, 408 (1998) (holding that there is no Fifth Amendment right to lie to criminal investigators).

⁸⁷ *See* *United States v. Flowers*, 813 F.2d 1320, 1324 (4th Cir. 1987) ("Thus, under § 1623(c), the government had no burden to prove through extrinsic evidence the falsity of one of Flowers' declarations. Rather, the statute allows contradictory statements without more to form the basis of the perjury prosecution, and permits the jury to infer the falsity of a declaration from its inconsistency with another.").

⁸⁸ *See* 18 U.S.C. § 1621 (2012) (criminalizing false statements under oath).

TABLE 1

RANGE OF PROSECUTORIAL TOOLS

Situation	Prosecutor's Tool	Outcome
Witness refuses to testify	Subpoena	Witness compelled to testify
Witness is not near the court	Reimbursement of travel expenses	Witness appears in court
Witness is likely to flee	Detention as material witness	Witness appears in court
Witness invokes Fifth Amendment	Use-Immunity	Witness testifies substantively
Witness fears retribution or seeks benefits from defendants	Witness protection program; prosecution of whomever tampers or bribes	Witness not influenced by defendant
Witness will testify contrary to prior statements to officials or grand jury	Threat of false statements prosecution	Witness testifies consistently with prior statements
Witness will testify falsely, contrary to provable facts	Threat of perjury prosecution	Witness testifies truthfully
Witness will not testify favorably to prosecutor	Try case without the witness	Risk losing
Witness will testify unfavorably to prosecutor	Incentives (leniency, broad immunity, cash, other things of value)	Witness testifies as prosecutor prefers

The transition to the bottom row is particularly important. When the prosecutor finds that all of the foregoing techniques are insufficient, and the prosecutor feels insecure about her chances of proving the case without the recalcitrant witness, the prosecutor can turn to outright incentives instead. Let us put aside the possibility that some prosecutors are willing to use this power in bad faith to procure testimony that they believe to be false.⁸⁹ These sorts of cases are less interesting because they are so obviously wrong. Instead, let us presume good faith—the prosecutor believes that, without an incentive, the witness will feign ignorance or lie.

This counterfactual analysis also shows that the primary function of prosecutorial incentives is to change the substance of what the witness will say, in the bottom row, where the prosecutor needs the testimony but the witness's likely testimony is unhelpful. The *other tools* allow the prosecutor to force the witness to appear and to testify, but she may say that she does not remember the key facts, or perhaps she will even exculpate the defendant. Those responses are not satisfactory to the prosecutor, who then offers the incentive. By offering incentives (even implicitly), the prosecutor can cause the witness to remember the key facts in a way that inculpates the defendant and helps the Government.⁹⁰ In doing so, the prosecutor's incentives may well have converted false testimony into true, or vice versa. The point here is merely that it has changed.

This point may be difficult for the factfinder to appreciate, since we only observe the actual situation (with the incentive), not the counterfactual situation (without the incentive) for this witness. A witness will insist that her inculpatory testimony is truthful.⁹¹ The witness will not generally concede that her testimony has changed because of the prosecutor's incentive, because that may suggest that she is unreliable as a witness, reduce the value of the testimony to the prosecutor, and thus reduce the prosecutor's willingness to pay for that testimony.

⁸⁹ See Stephen S. Trott, *Words of Warning for Prosecutors Using Criminals as Witnesses*, 47 HASTINGS L.J. 1381, 1381–92 (1996) (cautioning prosecutors about the ethical perils of using incentivized criminals as witnesses); Ellen Yaroshesky, *Cooperation with Federal Prosecutors: Experiences of Truth Telling and Embellishment*, 68 FORDHAM L. REV. 917, 942–43 (1999) (finding that prosecutors have confidence in their ability to detect lies). See generally DANIEL S. MEDWED, PROSECUTION COMPLEX: AMERICA'S RACE TO CONVICT, AND ITS IMPACT ON THE INNOCENT (2012) (exploring how even well-meaning prosecutors may contribute to wrongful convictions because of cognitive biases and an overly-deferential regime of legal and ethical rules).

⁹⁰ Cohen, *supra* note 13, at 820 (“From the moment a defendant enters the federal criminal justice system, if not before, he is told of the advantages of cooperation. It is a message that is delivered again and again by an array of friends and adversaries. It is a message that is delivered by law enforcement agents, by defense counsel, by co-defendants and, if incarcerated, by fellow inmates and jailers. The almost mystical qualities of cooperation—the prospect of receiving a substantially reduced sentence as a consequence of the filing of a letter by a prosecutor pursuant to Section 5K1.1 of the Guidelines—is known to every criminal defendant. To many defendants, cooperation has become synonymous with hope.”) (footnotes omitted).

⁹¹ Cf. CHARLES FRIED, RIGHT AND WRONG 67 (1978) (“Every lie necessarily implies—as does every assertion—an assurance, a warranty of its truth.”).

Nonetheless, if the factfinder assumes that both the witness and the prosecutor are rational, then the factfinder could *generally* assume that any incentivized witness *did* in fact change her testimony to secure the incentive. As a former prosecutor explains, “To most rational criminal defendants, and most criminal defendants are rational, there is really no choice at all.”⁹² Traditional economic analysis predicts that witnesses will testify favorably, when given an incentive to do so. Still, it is possible that witnesses are so altruistic in their concern for the truth that they do not behave as traditional economics would predict—an empirical question we explore below.

The Government’s choice about whether to give an incentive is typically rational too. If the witness would have testified favorably to the Government without the incentive, then the Government’s provision of the incentive would be an outright waste. These incentives are costly to the Government, whether it is an opportunity cost in deterrence for a witness granted immunity or leniency, or the money that is spent or foregone when the incentive is cash.⁹³ Assuming that the Government somehow internalizes the cost of the incentive, and the Government is both rational and competent as a negotiator (non-trivial assumptions, admittedly), then the Government will not provide such benefits to witnesses that would testify helpfully without those incentives.⁹⁴ Thus the juror who observes an incentive should assume that without the incentive, the testimony would have been to the contrary.

This method of reasoning should be familiar; we infer facts about the world from the rational behavior of actors in it. If we observe a litigant destroy a document, we assume it was unfavorable to his case.⁹⁵ This method of reasoning also works up and down the scale of potential incentives. If a prosecutor could have procured helpful testimony with merely a slight reduction of sentence, a competent and rational prosecutor would offer that rather than complete immunity.

From this analysis, we cannot say whether the prosecutor’s incentive has evoked true or false testimony. We can only say that the prosecutor caused

⁹² Cohen, *supra* note 13, at 819.

⁹³ See U.S. DEP’T OF JUST., UNITED STATES ATTORNEYS’ MANUAL § 9-27.420 cmt. B.2 (2017), <https://www.justice.gov/usam/usam-9-27000-principles-federal-prosecution#9-27.420> (“One of the principal arguments against the practice of plea bargaining is that it results in leniency that reduces the deterrent impact of the law and leads to recidivism on the part of some offenders.”).

⁹⁴ *But see* Ronald Wright & Marc Miller, *The Screening/Bargaining Tradeoff*, 55 STAN. L. REV. 29, 86 (2002) (explaining that line prosecutors may fail to internalize all the costs of granting leniency: “The problem is sometimes cast in terms of agency costs: The agent (the prosecutor) might sell the case to the defendant too cheaply while the principal (the public) is not paying attention. Chief prosecutors . . . worry that their assistants will negotiate poorly [to make their] job easier.”).

⁹⁵ See, e.g., *Baxter v. Palmigiano*, 425 U.S. 308, 319 (1976) (discussing silence as an indicator of guilt); Stephen A. Saltzburg, *A Special Aspect of Relevance: Countering Negative Inferences Associated with the Absence of Evidence*, 66 CAL. L. REV. 1011, 1020, 1022 (1978) (finding that juries make negative inferences from witness’s silence and are sometimes instructed by courts that they may do so).

the witness to testify as she did. The testimony may be completely true, but the epistemic point is that the truth of the matter did not cause the witness to testify that way. Instead, the incentive did so.⁹⁶ To emphasize: this is not to say that the witness is lying or that the prosecutor has suborned perjury. Only that the evidence lacks epistemic value.

B. Saving the Epistemic Value of Incentivized Testimony

From the foregoing analysis, one might conceive an incentivized witness to be like an actor in a theatrical play. When one watches Shakespeare's *Coriolanus*, and an actor comes upon stage playing the messenger to report that there was a battle raging at Corioli, and "spies of the Volsces held [him] in chase,"⁹⁷ we do not consider the testimony to have any epistemic value whatsoever for the question of whether in fact there was such a battle involving such spies. There may indeed have been such a battle and such spies (or not) but nobody supposes that a paid actor's utterance on stage is evidence as to the truth of the proposition uttered.

There are two potential paths of inference, which might save the epistemic value of incentivized testimony nonetheless. We could rely on the prosecutor's knowledge and ethics, or on the witnesses' ethics and an exogenous budget that prevents a deal between the prosecutor and witness.

The first path is to suppose that prosecutors would not offer an incentive for testimony unless it were true. Yet, a witness's "value increases in inverse proportion to the information in possession of the prosecutor."⁹⁸ Precisely in those cases where the prosecutor has little other evidence of the truth is the temptation greatest to pay a witness to reveal the truth. Indeed, prosecutors explain that they often must rely on a "gut reaction," about whether the witness's proposed testimony is truthful.⁹⁹

Prosecutors may also be biased by their role of being zealous advocates.¹⁰⁰

⁹⁶ Arguably, such testimony is irrelevant to a criminal case, in the strict legal sense. See, e.g., FED. R. EVID. 401 (defining relevance as having "any tendency to make a fact more or less probable than it would be without the evidence" where "the fact is of consequence in determining the action"); see also Richard A. Posner, *An Economic Approach to the Law of Evidence*, 51 STAN. L. REV. 1477, 1488 (1999) (explaining that the testimony a trial lawyer brings forth is framed in terms of potential profit rather than truth).

⁹⁷ WILLIAM SHAKESPEARE, *CORIOLANUS* act 1, sc. 6.

⁹⁸ Cohen, *supra* note 13, at 822.

⁹⁹ See *id.* at 822-23 ("[W]here limited information exists, it is oftentimes difficult to evaluate the veracity of a would-be cooperator and the methods used to conduct such an evaluation are inherently inadequate."); see also NATAPOFF, *supra* note 7, at 22 (describing the relationship between cooperators and prosecutors).

¹⁰⁰ See David Sklansky, *Starr, Singleton, and the Prosecutor's Role*, 26 FORDHAM URB. L.J. 509, 528 (1999) ("In the heat of litigation, facing zealous defense counsel, it can be hard not to think simply as an

As David Sklansky has observed, the official Department of Justice manual for federal prosecutors encourages them to consider whether the defendant's cooperation could have "value" for putting away other defendants.¹⁰¹ Sklansky notes, "The clear message is that credibility is important solely for determining how helpful the cooperation will be; the concern is less with truth than with forensic efficacy."¹⁰²

Finally, even if trusting the prosecutor were a useful heuristic, this form of inference is contrary to core institutional commitments of the American criminal justice system, which presumes innocence rather than defers to prosecutors.¹⁰³ Prosecutors are not allowed to vouch for a witness or serve as a witness.¹⁰⁴

A second route is to suppose that social norms against lying constrain witnesses. This behavior could also be due to a residual fear of perjury prosecution (as minimal as that may be when the prosecutor is offering to pay for the testimony). On this theory, even if incentivized, a witness is more likely to decline to testify favorably if the proposed testimony is false. If testifying "X shot Y" is more likely when X actually shot Y, then the testimony has some epistemic value.

Such a resistance to testifying falsely is understandable. But it can be overcome. The prosecutor has a wide range of potential incentives to offer. If a reduced sentence is not enough to procure "X shot Y" testimony, the Government can offer complete immunity, or add cash as well. In addition to raising the incentive for compliance, the Government can also raise the stakes for non-compliance, charging additional crimes, prosecuting members of the family, seeking asset forfeiture, etc.¹⁰⁵ Thus, the jury's observation that an incentivized witness says "X shot Y" merely supports an inference that

advocate. And when a witness seeks leniency in exchange for damning evidence against the defendant, it can be tempting to leave credibility assessments to the jury. Nor is this simply a matter of getting caught up in the competitive nature of trial work. Even in moments of detachment, many prosecutors may feel that it is not their job to judge the truth of testimony, only how it will play in the courtroom."

¹⁰¹ *Id.* at 528–29 (discussing UNITED STATES ATT'YS' MANUAL § 9-27.420).

¹⁰² *Id.* at 529.

¹⁰³ Coffin v. United States, 156 U.S. 432, 453 (1895); James Bradley Thayer, *The Presumption of Innocence in Criminal Cases*, 6 YALE L.J. 185, 188–89 (1897).

¹⁰⁴ MODEL RULES PROF'L CONDUCT r. 3.4(e) (AM. BAR ASS'N 2016) (explaining that a lawyer cannot allude to personal views about the credibility of a witness); *id.* r. 3.7 (prescribing rules for a lawyer as a witness); see also United States v. Prantil, 764 F.2d 548, 553 (9th Cir. 1985) ("This venerable rule is a necessary corollary to the more fundamental tenet of our adversarial system that juries are to ground their decisions on the facts of a case and not on the integrity or credibility of the advocates. Accordingly, adherence to this time-honored rule is more than just an ethical obligation of individual counsel; enforcement of the rule is a matter of institutional concern implicating the basic foundations of our system of justice.")

¹⁰⁵ See Bruce A. Green, "Package" Plea Bargaining and the Prosecutor's Duty of Good Faith, 25 CRIM. L. BULL. 507, 514–16 (1989) (discussing the ethics of threatening to charge family members of the actual targets of their investigations); Sklansky, *supra* note 20, at 523 (discussing the immunity deal Monica Lewinsky secured, which included immunity for her parents).

the Government succeeded in finding the right price that was sufficient to overcome whatever hesitancy that the witness had to say “X shot Y.” With a potentially unlimited range of incentives the Government can offer, a witness saying “X shot Y” has no epistemic value.

Suppose, however, that the Government is constrained in the amount of incentive that it can or will offer, and thus would sometimes fail to purchase the testimony it seeks. For example, the witness may simply not be important enough to the case, and her own criminal behavior may be too egregious to warrant full immunity. Or she might warrant full immunity, but not an allocation of cash, which may require additional bureaucratic hassles. At whatever the limit, the Government says, “take it or leave it.” This supposition is of little help to the factfinder, who does not know that limit, and thus does not know whether the given incentive is below or at that level. If the given incentive is below that level, then the hypothesized *de facto* limit is irrelevant, since the Government successfully bought the testimony regardless.

At best, the jury can speculate about whether the actual level of incentive would have been sufficient, in a world where X did *not* shoot Y, to nonetheless cause the witness to say “X shot Y” falsely. This behavioral question can be conceived in terms of probabilities. Suppose 100 similarly situated witnesses are given this same incentive, each in a world where X did *not* shoot Y. What percentage of them would nonetheless say that he did so, in order to secure the particular incentive? The larger this percentage is, the less weight the jury should give to the testimony. If jurors can accurately make that assessment, then they will be able to discount the testimony of incentivized witnesses proportionately.

Let us call this the “calibration hypothesis.” Alternatively, jurors could overreact to an incentives disclosure (ignoring the substantive testimony altogether, even though the incentive actually would cause no witnesses to lie) or underreact (believing the testimony even though a given incentive had a very large effect on witness’s willingness to lie). In the following Part we review observational and experimental evidence that can shed light on this question, as well as three novel experiments.

III. AN EMPIRICAL APPROACH

A. *Prior Research*

We know that induced testimony is an important factor in wrongful convictions, but we have no reliable mechanism to estimate its scale. In an analysis of 250 cases of wrongful convictions where DNA eventually exonerated the defendant, Brandon Garrett found that in 21% of the cases, the conviction was secured through testimony by government informants—including jailhouse informants, codefendants, and confidential informants or cooper-

ating witnesses.¹⁰⁶ Among the 2130 exonerations registered by the University of Michigan, 1205 involved perjury or false accusations, though not all of these involved prosecutorial incentives, and most involved other factors as well.¹⁰⁷ These sorts of observational studies are powerful, but they are stymied by the exceeding rareness of finding a conviction to be wrongful due to the presence of physical evidence.

More generally, social science finds that individuals respond to incentives, including by lying if necessary. The “prisoner’s dilemma” is a classic thought experiment used in game theory to demonstrate how rational individuals can make choices about whether to testify, regardless of the truth.¹⁰⁸ Witness incentives can lead to suboptimal collective outcomes for defendants while serving the interests of prosecutors, who can construct the game. The basic structure of the prisoner’s dilemma game has been deployed in countless laboratory experiments.¹⁰⁹

In similar lab settings, social scientists have found it relatively easy to create incentive structures that induce lying or the giving of biased advice. For example, Sah and Loewenstein created a counting task, in which one party had better epistemic access to the truth than the other party (like a witness and a jury, schematically).¹¹⁰ When advisors were paid based on how high the advisee guessed, rather than based on the accuracy of the guess, the advice was dramatically inflated. When advisors thought that the advisees had other sources of evidence available to them, the advice became even more biased.

Research in the real world has found strong incentive effects. For example, companies successfully use incentives (“wages”) to get their employees to show up and work. More interestingly, a study found that pregnant women were more likely to quit smoking if rewarded.¹¹¹ Another found that, after lower-income families were given \$55 per month contingent on their children

¹⁰⁶ BRANDON L. GARRETT, CONVICTING THE INNOCENT: WHERE CRIMINAL PROSECUTIONS GO WRONG 124 (2011); see also BARRY SCHECK ET AL., ACTUAL INNOCENCE 126–57 (2000) (describing cases where a combination of forged DNA analysis and perjured witness testimony sent innocents to jail).

¹⁰⁷ UNIV. CAL. IRVINE NEWKIRK CTR. FOR SCI. & SOC’Y, MICH. STATE UNIV. COLL. OF L. & UNIV. OF MICH. L. SCH. & THE NATIONAL REGISTRY OF EXONERATIONS, <https://www.law.umich.edu/special/exoneration/Pages/Exonerations-in-the-United-States-Map.aspx> (start at initial page for total exonerations reported; then select “Present” for “Perjury/False Accusation”) (last visited Dec. 3, 2017).

¹⁰⁸ See Steven Kuhn, *Prisoner’s Dilemma*, THE STAN. ENCYCLOPEDIA OF PHIL. ARCHIVE (2014), <http://plato.stanford.edu/archives/fall2014/entries/prisoner-dilemma> (discussing the Prisoner’s Dilemma as created by Merrill Flood and Melvin Dresher in 1950).

¹⁰⁹ See, e.g., Joshua A.T. Fairfield & Christoph Engel, *Privacy as a Public Good*, 65 DUKE L.J. 385, 411–12 (2015) (describing the “informed prisoner’s dilemma” as a variant of the standard prisoner’s dilemma).

¹¹⁰ Sunita Sah & George Loewenstein, *Conflicted Advice and Second Opinions: Benefits, but Unintended Consequences*, 130 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 89, 93–94 (2015).

¹¹¹ David Tappin et al., *Financial Incentives for Smoking Cessation in Pregnancy: Randomized Controlled Trial*, BRITISH MED. J., Jan. 27, 2015, <http://www.bmj.com/content/350/bmj.h134>.

regularly attending school, drop-out rates decreased.¹¹² Incentives can also lead to bad outcomes. For example, studies have documented physicians changing their practice patterns to follow the money, even if it does not improve patient outcomes.¹¹³

Still, the evidence also shows that people are generally reluctant to outright lie, even when there is an incentive to do so. In one laboratory game, participants were divided into two groups (senders and receivers) and the senders had the option to either tell the truth or lie.¹¹⁴ In one scenario, if the sender chose to lie, both the sender and the receiver would receive more money, yet a third of senders refused to lie.¹¹⁵ In another study where the players' interests were adverse, almost half refused to lie.¹¹⁶ By manipulating the payoffs, the authors found that people are generally "sensitive to their gain when deciding to lie" and that individuals also care about "how much the other side loses."¹¹⁷ Another study found that the more substantial the lie, the less likely a person is to lie.¹¹⁸

There is also a broader literature on ethical behavior, finding that people will "behave dishonestly enough to profit but honestly enough to delude themselves of their own integrity. A little bit of dishonesty gives a taste of profit without spoiling a positive self-view."¹¹⁹ In six experiments, the respondents cheated when given the opportunity, but the level of cheating was relatively low compared to the total cheating opportunities.¹²⁰

The empirical literature on the reliability of eyewitness testimony has focused on the frailties of human memory, rather than on incentives to lie.¹²¹ Nonetheless, several articles have focused on "secondary confessions" where an informant testifies that the defendant confessed to him. In a study on a college campus, researchers gave a subgroup of participants an incentive to testify that they heard an accused individual confess, despite the fact that they heard the accused deny any wrongdoing.¹²² Nearly two-thirds (60%) were

¹¹² Uri Gneezy et al., *When and Why Incentives (Don't) Work to Modify Behavior*, J. ECON. PERSP., Fall 2011, at 5 (detailing effects of Mexico's PROGRESA program).

¹¹³ See generally Christopher T. Robertson et al., *Effect of Financial Relationships on the Behaviors of Health Care Professionals: A Review of the Evidence*, 40 J. LAW, MED. & ETHICS 452 (2012) (describing financial conflicts of interest in the healthcare context).

¹¹⁴ Sanjiv Erat & Uri Gneezy, *White Lies*, 58 MGMT. SCI. 723, 724–25 (2012).

¹¹⁵ *Id.* at 726.

¹¹⁶ Uri Gneezy, *Deception: The Role of Consequences*, 95 AM. ECON. REV. 384, 387–88 (2005).

¹¹⁷ *Id.* at 391.

¹¹⁸ Tobias Lundquist et al., *The Aversion to Lying*, 70 J. ECON. BEHAV. & ORG. 81, 90 (2009).

¹¹⁹ Nina Mazar et al., *The Dishonesty of Honest People: A Theory of Self-Concept Maintenance*, 45 J. MKTG. RES. 633, 633 (2008).

¹²⁰ *Id.* at 636.

¹²¹ See generally, e.g., ELIZABETH F. LOFTUS, EYEWITNESS TESTIMONY (7th prtng. 1996).

¹²² See Jessica K. Swanner & Denise R. Beike, *Incentives Increase the Rate of False but Not True Secondary Confessions from Informants with an Allegiance to a Suspect*, 34 LAW & HUM. BEHAV. 418, 422 (2010).

willing to testify falsely.¹²³ A study with mock witnesses found that an incentive to testify increased the rate of false but not true confessions, in situations where the witness and the suspect had allegiance.¹²⁴

Other studies have found that such secondary confessions can be impactful on juries.¹²⁵ One study found that mock juries did not discount jailhouse testimony when an incentive was offered.¹²⁶ Another study concluded that mock jurors were “unaffected by the explicit provision of information indicating that the witness received an incentive to testify.”¹²⁷ On the other hand, Maeder and Pica found that incentives did have an effect on verdict decisions, but the effect was not calibrated to the size of the incentive.¹²⁸

In criminal trials, of course, as noted above, prosecutors must disclose incentives paid to witnesses.¹²⁹ Disclosure is a more general regulatory device, which has enjoyed more use than success.¹³⁰ Empirical evidence suggests that using disclosures to help decision makers calibrate how much to rely on advice is no more promising.¹³¹

Even more, social science suggests that a disclosure mandate may also affect the behavior of the witnesses themselves. Cain and colleagues conducted an experiment involving a contrived game where individuals were put into the role of advisors (witnesses) versus estimators (factfinders), and the researchers also created a conflict of interest for the advisors, incentivizing them to give higher estimates regardless of whether they were true.¹³² The

¹²³ *Id.* at 424.

¹²⁴ *Id.* at 425–426; see also Jessica K. Swanner et al., *Snitching, Lies and Computer Crashes: An Experimental Investigation of Secondary Confessions*, 34 L. & HUM. BEHAV. 53, 60–61 (2010) (finding that incentives increased the rate of false secondary confessions in laboratory simulations in which participants either caused or witnessed a simulated vehicular accident).

¹²⁵ See Stacy Ann Wetmore et al., *On the Power of Secondary Confession Evidence*, 20 PSYCHOL. CRIME & L. 339, 354 (2014) (finding that jurors viewed secondary confessions as more persuasive than other evidence).

¹²⁶ See Jeffrey S. Neuschatz et al., *Secondary Confessions, Expert Testimony, and Unreliable Testimony*, 27 J. POLICE CRIM. PSYCHOL. 179, 185, 188–89 (2012) (discovering that jurors were more likely to deem a suspect guilty if exposed to secondary confessions, even if the jurors were aware the informant was receiving an incentive).

¹²⁷ Jeffrey S. Neuschatz et al., *The Effects of Accomplice Witnesses and Jailhouse Informants on Jury Decision Making*, 32 LAW & HUM. BEHAV. 137, 142 (2008).

¹²⁸ See Evelyn M. Maeder & Emily Pica, *Secondary Confessions: The Influence (or Lack Thereof) of Incentive Size and Scientific Expert Testimony on Jurors’ Perceptions of Informant Testimony*, 38 LAW & HUM. BEHAV. 560, 566 (2014).

¹²⁹ See *supra* text accompanying notes 57–63 (reviewing the *Brady* doctrine).

¹³⁰ See generally OMRI BEN-SHAHAR & CARL E. SCHNEIDER, *MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE* (2014).

¹³¹ See Christopher Tarver Robertson, *Biased Advice*, 60 EMORY L.J. 653, 669–70 (2011) (finding that laypersons with biased advisors who provided mandatory disclosures did worse than those with biased advisors who did not provide the mandatory disclosures).

¹³² Daylian M. Cain et al., *The Dirt on Coming Clean: Perverse Effects of Disclosing Conflicts of Interest*, 34 J. LEGAL STUD. 1, 9–11 (2005).

conflict of interest caused the advisors to provide self-servingly inflated advice (analogize to a witness being willing to lie when given an incentive to do so). When the advisors were required to disclose their conflict of interest, they gave even more biased advice, perhaps due to a sense that *caveat emptor* absolves any moral motivation to tell the truth.¹³³ Regrettably, the disclosure did not help the estimators make more accurate decisions; they worsened performance overall compared to the no-disclosure condition.¹³⁴ This finding was replicated in subsequent research.¹³⁵ Other studies have found similar effects in more realistic settings outside the lab.¹³⁶

This dynamic has not been specifically studied with regard to witness incentives in criminal trials, but the social science suggests that *Brady* disclosure mandates may perversely increase witnesses' propensity to lie, if the witnesses are aware that their incentives will be disclosed to the factfinder. This is just another factor a factfinder would then consider in trying to calibrate its reliance on an incentivized witness.

To test the doctrinal theory that juries can successfully discount credibility based on disclosures about incentives, the optimal experimental approach would allow observation of both the influence of the testimony on the factfinder, while at the same time observing the effect of any inducement on the witness's willingness to so testify. We present three experiments, two focusing on witness behavior, and a third that allows a direct test of the calibration hypothesis.

B. *Experiment One—Witness Behavior Conditional on Truth and Incentives*

1. *Design*

To approach these empirical questions, it is useful to have a context in which we can specify the truth or falsity of the proposed testimony, and manipulate the incentive. Only then can we estimate its effects.

¹³³ *Id.* at 3, 9–11.

¹³⁴ *Id.* at 13.

¹³⁵ See, e.g., Daylian M. Cain et al., *When Sunlight Fails to Disinfect: Understanding the Perverse Effects of Disclosing Conflicts of Interest*, 37 J. CONSUMER RES. 836, 845 (2011) (finding in experiment involving estimation of home sale prices that estimators earned over one-third less money per house when the advisor's conflicts of interest were disclosed than when they were not); Karim Jamal et al., *Does Disclosure of Conflict of Interest Increase or Decrease Bias?*, 35 AUDITING: J. PRAC. & THEORY 89, 97 (2016) (finding that disclosure increased bias when the interests of the advisor and estimator were aligned, but finding no increase in bias when those interests were misaligned); Robertson, *supra* note 131 at 669–70 (finding that laypersons provided with the mandated disclosure had worse outcomes than those who were not provided with the disclosure).

¹³⁶ See, e.g., Sunita Sah et al., *Effect of Physician Disclosure of Specialty Bias on Patient Trust and Treatment Choice*, 113 PROC. NAT'L ACAD. SCI. 7465, 7466–67 (2016) (finding that disclosure of physician bias toward surgery increased patient preference for surgery in both field and lab settings; physicians in the field also increased the strength of their recommendation when they disclosed their bias).

Accordingly, we designed a randomized vignette-based experiment, which manipulated the truth or falsity of proposed testimony between-subjects, and which sequentially offered four levels of incentives to give that testimony within-subjects. Our primary dependent variable was the respondent's willingness to provide the testimony sought by the Government.

We used vignettes of approximately 850 words each, in which respondents were asked to imagine themselves as an individual charged with a minor felony, which then created the predicate for the prosecutor to offer leniency. To reduce the difficulty that subjects may find imagining themselves as a criminal, we asked each respondent which of four felonies (state tax evasion, buying stolen car parts from a chop shop, drunk driving, or check kiting), they thought was most-often committed by otherwise law-abiding citizens. We then assigned them to imagine themselves in that situation, richly described. Respondents were told to imagine they were being charged with the crime, for which the penalties were a maximum of 3 years in prison and up to \$270,000 in fines and fees (modeled on Arizona state law). To further enhance subject engagement, each respondent was asked to write a few sentences describing how they would feel if this situation were to befall them.

Respondents were asked whether they would incriminate another inmate in a murder. Although subjects were blinded, the facts of this crime were taken from the 1982 murder of Debra Sue Carter and subsequent prosecution and conviction of Ron Williamson, who was later exonerated.¹³⁷ That case turned on a witness who testified that Williamson confessed to the crime while in jail.¹³⁸ In our vignettes, the respondent was placed in a cell next to Williamson—renamed Fredrickson for the experiment¹³⁹—and detectives questioned the respondents about him. Our detectives explained they had a significant body of other evidence about the murder, but needed something more substantial to ensure a conviction over any “technicalities” that may be raised by the defense counsel.

In the next page of our experiment, subjects were randomized into one of two conditions. In the first condition (truth), subjects were informed that they had indeed heard Frederickson confess to the murder, including certain specific details regarding the motive and method of the murder. In our other condition (falsity), the subjects were informed that they did not hear any confession, but

¹³⁷ See JIM DWYER ET AL., ACTUAL INNOCENCE: WHEN JUSTICE GOES WRONG AND HOW TO MAKE IT RIGHT, 168–202 (2001) (discussing the *Williamson* case in detail); BRANDON L. GARRETT, CONVICTING THE INNOCENT: WHERE CRIMINAL PROSECUTIONS GO WRONG 129, 131 (2011) (summarizing same). We changed the name in the vignettes to minimize recognition.

¹³⁸ DWYER ET AL., *supra* note 137, at 175–76, 190 (noting the evidentiary issues in the case and highlighting the significance of the witness's false testimony that Williamson had admitted to committing the crime).

¹³⁹ We used the name Fredrickson rather than Williamson to avoid any subjects recognizing the facts of the historical case.

instead had the impression Frederickson was merely an older man with an alcohol dependence. They were also given the same details regarding the motive and method of the murder, gleaned from media coverage of the crime.

In both experimental groups, subjects were then presented with an increasing series of incentives to testify that there was in fact a jailhouse confession. At the first stage (Level 1), the prosecutor offered leniency, which would substantially reduce the maximum penalty of three years' prison-time to 12–24 months' prison time, in exchange for favorable testimony. Those that declined to testify moved to the second stage (Level 2), where the prosecutor offered a further reduction in prison time, and a complete reduction in fines or fees. At the third stage (Level 3), the prosecutor offered total immunity—a complete reduction in prison time and fees. Finally, at the fourth stage (Level 4) the prosecutor offered the subjects complete immunity, plus “a few thousand dollars a month” in financial support while the subjects testified for the state—an incentive that falls squarely within the realm of the incentives actually offered by prosecutors.¹⁴⁰

At each increasing stage, a defense attorney advised the subjects both that offering false testimony is a serious crime, as well as the practical implications of the offered deal. At certain stages, the prosecutor made attempts to convince the subjects to testify; at the third incentive level, for example, the prosecutor urged the subjects to prevent “a violent sexual predator” from going free. Further, the third incentive level was presented as a firm offer.

At each incentive level, our primary dependent variable was whether the subjects were willing to testify in a way that inculpated the defendant, favorably to the Government. To further enhance realism and maximize the discordance involved with giving false testimony, we also asked subjects to type out their exact testimony in as much detail as they could remember (or contrive in the falsehood condition).

2. Results

We recruited a diverse group of 440 respondents from an online pool.¹⁴¹ Respondents spent approximately ten minutes completing the experiment.¹⁴² As shown in Figure 1, in the false testimony group, 7% were willing to lie in exchange for the lowest level of incentive. The willingness increased with increasing incentive pressure, to 10%, 15%, and 20% for levels 2, 3, & 4, respectively. In the truthful testimony condition, a quarter of respondents refused to

¹⁴⁰ See *supra* note 7 and accompanying text; see also McKinley, *supra* note 5

¹⁴¹ We used Amazon Mechanical Turk, paying \$1.25 per response. This group was 49% male; 81% White; 7% Black; 6% Asian; and 6% Spanish, Hispanic, or Latino. In terms of education, 14% had a high school degree or less, 71% had at least some college credit but not advanced degrees, and 15% had advanced degrees.

¹⁴² Average time to complete was 10:21.

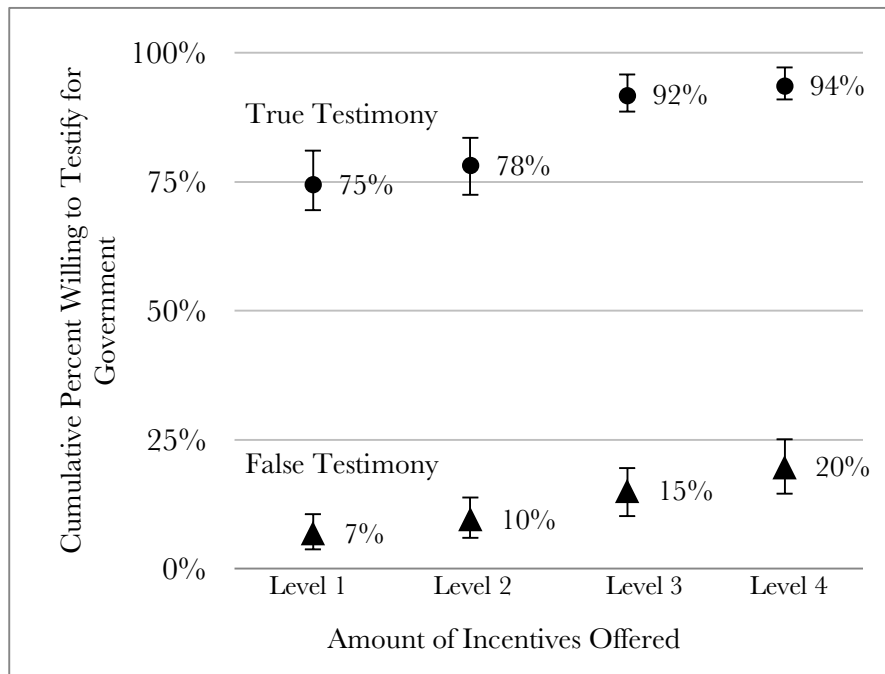
testify, even with a small incentive. Ultimately, a cumulative 94% of respondents were ultimately willing to testify when the proposed testimony was truthful.

Witnesses in our experiment were less likely to offer false than true testimony, even when incentivized. We can reject the null hypothesis and say that, to the extent our sample is ecologically valid, witnesses are less willing to give false testimony than true testimony ($p < 0.001$, 95% CI = .66 - .79).

Our results also suggest that witness testimony is affected by prosecutorial incentives. Incentives appear to elicit false testimony in a significant minority of respondents. And, the process of wearing down a witness by sequentially offering increasing levels of incentives is successful, nearly tripling the rate of false testimony.

FIGURE 1

WITNESSES' WILLINGNESS TO TESTIFY FOR GOVERNMENT, CUMULATIVE PERCENTAGE AT FOUR LEVELS OF INCENTIVES, BY TRUTH OF TESTIMONY, WITH 95% CONFIDENCE INTERVAL (EXPERIMENT 1)



Level 1 = Leniency by reducing the maximum penalty of three years prison time to 12–24 months prison time.

Level 2 = Further reduction in prison time and a complete reduction in fines or fees.

Level 3 = Total immunity.

Level 4 = Total immunity plus “a few thousand dollars a month.”

3. Discussion

Our study has strengths and limitations. On the one hand, we used an extensive vignette, including customizations to make it seem more realistic and a writing task to enhance engagement. Our use of a randomized design maximizes internal validity, as it distributes observable and non-observable covariates and allows causal inference.

On the other hand, ecological validity is the challenge for this sort of research: we used experimental vignettes, rather than real police interrogations of a witness facing real criminal jeopardy. Vignettes have become a common tool in a range of scientific and practical fields including sociology, psychology, business, and health sciences.¹⁴³ Vignette-based experiments are now published in the leading scientific journals, to predict real-world behaviors.¹⁴⁴

Our vignettes also focused on a particular fact pattern. A case putting the witness in greater criminal jeopardy could increase willingness to testify (or vice versa).

Nonetheless, one out of five respondents are willing to testify falsely in a case with profound consequences for the criminal defendant, including the death penalty. One would hope that this sort of behavior is extremely rare, comparable to the percentage of people who succumb to the temptation to rob a bank or to kill a relative to secure an insurance payout, presumably far less than 1% of the people that have the opportunity to do so. To the contrary, our data suggest that the human tragedy of the *Williamson* case is not an extreme outlier based on the aberrant behavior of an individual miscreant willing to testify falsely, but rather may be a relatively commonplace phenomenon of individuals willing to act rationally when put in a situation to do so. A 20% rate of individuals willing to lie for the Government is several orders of magnitude higher than one might hope for.

¹⁴³ See Jessica L. Collett & Ellen Childs, *Minding the Gap: Meaning, Affect, and the Potential Shortcomings of Vignettes*, 40 SOC. SCI. RES. 513, 513 (2011) (listing these fields in particular); see also Geert M.J. Rutten et al., *Measuring Physiotherapists' Guideline Adherence by Means of Clinical Vignettes: A Validation Study*, 12 J. EVALUATION IN CLINICAL PRAC. 491, 498 (2006) (concluding that vignettes are of acceptable validity for predicting guideline adherence in physiotherapy practice); D. Alex Winkelman et al., *An Empirical Method for Harmless Error*, 46 ARIZ. ST. L.J. 1405, 1417–18 (2014) (surveying this and other literature exploring the validity of vignette-based decision making to predict real world behavior, including jury behavior). See generally Rhidian Hughes, *Vignette Technique*, in THE SAGE ENCYCLOPEDIA OF SOCIAL SCIENCE RESEARCH METHODS 1184 (Michael S. Lewis-Beck et al. eds., 2011) (describing the form, purpose, applications, and criticisms of vignettes).

¹⁴⁴ See, e.g., Aaron S. Kesselheim et al., *A Randomized Study of How Physicians Interpret Research Funding Disclosures*, 367 NEW ENG. J. MED. 1119, 1120–24 (2012) (finding, in experiment using hypothetical scenarios involving the evaluation of new drugs to treat various disorders, that disclosure of industry sponsorship negatively influenced physicians' perceptions of a study's methodological rigor and their willingness to believe and act on trial findings).

Still, there is reason to believe that our experiment actually underestimates the rate at which jailhouse witnesses are willing to testify falsely for the Government. There are three reasons.

The first is a sampling error. The population of individuals sitting in jails are presumably more willing to commit criminal acts—including perjury—compared to our population of online workers.¹⁴⁵ Our population is also more highly educated, which predicts a lower incidence of future crime than the population of people sitting in jails.¹⁴⁶

The second reason is optimism, or a related phenomenon of over-prediction of moral behavior.¹⁴⁷ The vignette asked respondents to predict whether they *would* testify falsely if they someday found themselves in the given situation, but people often imagine themselves to be more honest and more altruistic than they really are.¹⁴⁸ For example, individuals were shown to overestimate their own voting behavior by about 24%.¹⁴⁹ Generally, individuals tend to see themselves in a positive light, and the suggestion that they would perjure themselves in the given situation creates cognitive dissonance.¹⁵⁰ It is easier to reject the minor premise (I would lie in this situation) than the major premise (I am a good person).

¹⁴⁵ See *What Is the Probability of Conviction for Felony Defendants?*, BUREAU JUST. STAT., <http://www.bjs.gov/index.cfm?ty=qa&iid=403> (last visited Sept. 23, 2017) (stating that most of those charged with felonies in the previous year were eventually convicted); *Recidivism*, NAT'L INST. JUST. (last updated June 17, 2014), <http://www.nij.gov/topics/corrections/recidivism/pages/welcome.aspx> (reporting statistics showing that a large percentage of released prisoners relapse into criminal behavior).

¹⁴⁶ See Lance Lochner & Enrico Moretti, *The Effect of Education on Crime: Evidence from Prison Inmates, Arrests, and Self-Reports*, 94 AM. ECON. REV. 155, 161–62 (2004) (finding “that an additional year of schooling reduces the probability of incarceration by 0.1 percentage points for whites and by 0.37 percentage points for blacks”).

¹⁴⁷ See Nicholas Epley & David Dunning, *Feeling “Holier Than Thou”: Are Self-Serving Assessments Produced by Errors in Self- or Social Prediction?*, 79 J. PERSONALITY & SOC. PSYCHOL. 861, 871–72 (2000) (“Participants overestimated how likely they were to buy a daffodil to support the American Cancer Society . . . , to cooperate in a prisoner’s dilemma . . . , to donate part of an experimental participation fee to charity . . . , and to shackle themselves rather than a partner to a longer and more unpleasant experimental task They also overestimated how sensitive their behavior would be to moral sentiments and underestimated how responsive they would be to self-interest concerns . . .”).

¹⁴⁸ See Nicholas Epley & David Dunning, *The Mixed Blessings of Self-Knowledge in Behavioral Prediction: Enhanced Discrimination but Exacerbated Bias*, 32 J. PERSONALITY & SOC. PSYCHOL. BULL. 641, 641–42 (2006) (reviewing the literature showing self-serving biases in predicting one’s own “socially or morally desirable behavior,” specifically that “[p]eople tend to overestimate, for example, how likely they are to donate time or money to charitable causes, complete important tasks ahead of schedule, and maintain their current romantic relationship”).

¹⁴⁹ *Id.* at 646 (finding that the actual voting rate of study participants in the upcoming presidential election was 66%, while 90% of participants had predicted they would vote).

¹⁵⁰ See generally SHELLY E. TAYLOR, *POSITIVE ILLUSIONS: CREATIVE SELF-DECEPTION AND THE HEALTHY MIND* (1989) (explaining many ways in which well-adjusted individuals rely upon sometimes illusory positive self-image in everyday life).

A third reason is social desirability bias. Some respondents may overcome optimism to realize that they would in fact lie for the prosecutors in the given situation, but may still be unwilling to admit that fact when answering our questions. Prior research has shown that people tend to respond to surveys in ways that are socially acceptable, for example under-reporting their propensity to engage in criminal activity or risky sexual behaviors.¹⁵¹ In one laboratory study for example, participants were surreptitiously observed as to whether they cheated on a test, and then later surveyed about whether they had done so within the last year.¹⁵² When guaranteed confidentiality, only 25% of the cheaters admitted on the survey to having done so, and when another group was allowed to respond anonymously only 74% of the cheaters admitted having done so.¹⁵³ The survey thus underestimated the actual rate of cheating by 26%. Here, although the anonymity we afforded to respondents likely facilitated some candor, a number of respondents who would in fact testify falsely in the given situation likely failed to honestly report their willingness to do so.

All three of these biases would point in the direction of a greater effect, making conservative our estimates of the likelihood that an incentivized witness would lie. The real rate at which witnesses behave rationally when put in the situation to do so may be much larger than the 20% we observed.

In our true testimony condition, we see that incentives still play a role in increasing willingness to testify. Our results suggest that potential witnesses have some predisposition against testifying, even when incentivized and in the face of legal jeopardy. It is possible that this result is affected by the same biases as our untrue condition. It is possible that our sample was more willing to testify truthfully than those actually facing criminal jeopardy would be in a similar circumstance. It is likewise possible that our respondents are overly optimistic about their willingness to testify in court against someone charged with murder; those actually facing criminal charges might be less likely to testify truthfully in light of their impending term in a correctional facility. Finally, social desirability bias could have potentially inflated the rate of true testimony; the social and economic burdens of being a state's witness might discourage more individuals in a real situation.

¹⁵¹ Thea F. van de Mortel, *Faking It: Social Desirability Response Bias in Self-Report Research*, AUSTL. J. ADV. NURSING, June–Aug. 2008, at 42 (2008) (reviewing 14,275 studies where socially desirable responding (SDR) might be a factor and finding that of those that used a social desirability scale, 43% found SDR to be a factor); see also Cindy M. Meston et al., *Socially Desirable Responding and Sexuality Self-Reports*, 35 J. SEX RES., 148, 156 (1998) (finding that the results of anonymous sexuality self-reports are influenced by social desirable responding).

¹⁵² Anthony D. Ong & David J. Weiss, *The Impact of Anonymity on Survey Responses to Sensitive Questions*, 30 J. APPLIED SOC. PSYCHOL. 1691, 1697–99 (2000).

¹⁵³ *Id.* at 1699.

From the perspective of a juror, the task of correctly discounting incentivized testimony is even more difficult, because of a multiple-selection problem. A particular criminal defendant who is jailed may have the opportunity to interact with several, perhaps even dozens, of potential witnesses for the prosecution. If the prosecution offers a deal to each one, and the real-world chance of eliciting false testimony is remotely similar to the effect we observed, the Government is almost guaranteed to find one witness willing to testify in an inculpatory way, regardless of the truth. For example, even assuming our conservative estimate that one out of five (20%) of individuals would be willing to lie, if the prosecutors ask a dozen people who interacted with the defendant, there is a 93% chance that at least one of them will fail to resist the temptation to testify falsely for the Government.¹⁵⁴

C. Experiment Two—The Effect of Mandatory Disclosure of Witness Incentives on Witness Behavior

In a second experiment, we move beyond jailhouse snitch scenarios to test a case in which the witness potentially faced jeopardy in the same case as the defendant, and again test whether willingness to lie is sensitive to the amount of incentive offered. We also sought to explore the effect of *Brady*'s mandatory disclosure of witness incentives on witnesses' willingness to lie.

Accordingly, we conducted a 2 x 2 between-subjects experiment, manipulating whether the witness was offered a small incentive (leniency leading to a guilty plea with probation) versus a large incentive (outright immunity from prosecution), and whether the respondents were reminded that any incentive would be disclosed to the jury versus no such reminder. In all conditions, the respondents knew that the Government's proposed testimony would be false.

1. *Design*

We again put respondents in the role of a potential witness in a criminal case, with vignettes of approximately 900 words each, this time modelled on the actual criminal case of former Alabama Governor Don Siegelman.¹⁵⁵ This case largely turned on the testimony of a single witness, the Governor's top aide, who testified that a corporate CEO's \$500,000 contribution to a political action committee advocating for a state lottery to fund education was actually a bribe of the Governor, in exchange for reappointment to a state board.¹⁵⁶

¹⁵⁴ This result is calculated by subtracting the 20% rate of willingness to lie from 100%, to find a refusal rate of 80%. That proportion raised to the 12th power, is 7%, which reflects the chance that 12 out of 12 of the prisoners offered the deal would reject it. 100% minus 7% is the chance that at least one would accept the deal.

¹⁵⁵ *United States v. Siegelman*, 640 F.3d 1159, 1164 (11th Cir. 2011).

¹⁵⁶ *Id.*

We changed the names and simplified other case facts, for example, by excluding a motorcycle, which was also alleged to be part of the bribery conspiracy.

After Siegelman was convicted, a whistleblower named Tamara Grimes alleged that the prosecutors had used a wide range of tactics to incentivize witnesses, even coaching the particulars of their testimony.¹⁵⁷ The prosecutors met over 70 times with one key witness—the Governor’s key aide, Nick Bailey—who ultimately provided the damning testimony linking the political contribution to the board appointment.¹⁵⁸ A group of 52 former attorneys general asked Congress to investigate the case, and 116 supported Siegelman’s unsuccessful appeals.¹⁵⁹ So the case is of particular interest for the question of prosecutors using inducements for and pressure on witnesses.

In all our experimental conditions, respondents were told that the FBI’s theory that there was an explicit exchange agreement was *false*. (As researchers, we do not know the truth of the actual *Siegelman* case; we stipulated falseness for experimental purposes only.) Contrary to the FBI’s theory, the vignette provided that the witness did not hear the Governor tell a lobbyist that the CEO needed to pay up; he did not meet privately with the CEO on multiple occasions; and when the check came in, he did not explicitly acknowledge that it was “for” the board seat.¹⁶⁰ The vignette reiterated the falseness of the Government’s theory at some length a second time.¹⁶¹

The experiment manipulated the inducements offered and the salience of disclosure. The actual inducements that prosecutors offered to the key witness, Nick Bailey, were complicated. For the purpose of our vignette, we simplified them in one condition to be simply an offer of complete immunity: he would not be prosecuted for his involvement in the case. In another randomly-assigned condition, the witness was offered the opportunity to plead guilty to reduced charges, with a recommendation that he or she would serve no prison time but would pay a fine and serve probation. To get either deal, the witness would have to waive any Fifth Amendment rights and testify in a way that inculpated his boss in bribery. In both conditions, the respondent’s attorney explained that declining the deal was a perilous proposition:

¹⁵⁷ Exhibit III-K at 2, *United States v. Scrusby*, 237 F.R.D. 464 (M.D. Ala. 2006).

¹⁵⁸ *Id.* at 3.

¹⁵⁹ Brief of Former Attorneys General as Amici Curiae in Support of Petitioner, *Siegelman v. United States*, 136 S. Ct. 798 (2016) (No. 15-353), 2015 WL 6445856; *Did Ex-Alabama Governor Get a Raw Deal?*, CBSNEWS (Feb. 21, 2008), <http://www.cbsnews.com/news/did-ex-alabama-governor-get-a-raw-deal/>.

¹⁶⁰ “Thinking back on all of this, it is true that the CEO made the contributions, and the Governor gave him the appointment. But, you never thought this was a bribe! In your line of work this sort of behavior happens all the time—officials and donors simply build goodwill, since they have to work together. You never would have participated in anything like a bribe!”

¹⁶¹ “You know that the FBI’s theory is false. You heard those conversations, and the Governor never told the lobbyist that the CEO needed to spend money to get the board seat. There was no secret meeting. And when the checks came in, the Governor did not say they were for the board seat. Instead, this was all just politics. You are absolutely sure there was no bribe.”

If you do not help the Government, you may become a target. They will assume that you are just trying to help your boss. The Government may give immunity to somebody else to testify against you both, and they are suggesting that the CEO may testify for the Government. Keep in mind that the Government wins over 85% of its trials, and you are facing 20 years or more if convicted. Your attorney tells you to think of your family and what a trial will put them through. Your attorney emphasizes that only you really know whether there was an explicit agreement to exchange the money for the board seat. So you should choose your words carefully.

All respondents were then asked, “What would you most likely do in this situation” and given two choices: (1) “Agree to testify for the FBI that the CEO and the Governor made an explicit agreement to exchange \$500,000 for an appointment to the board,” or (2) “Refuse to testify for the FBI that the CEO and the Governor made an explicit agreement to exchange \$500,000 for an appointment to the board.”

To increase the realism and engagement with the case, in all conditions, those that declined were given a second chance:

Your attorney reminds you that if you do not testify, you will almost certainly be prosecuted by the FBI for bribery. Your attorney again reminds you that the government will likely win the case it brings against you.

We hypothesized that the *Brady* rule’s mandatory disclosure of witness incentives may actually increase witnesses’ willingness to lie. Accordingly, half of the respondents were randomly assigned to be told:

Your attorney also informs you that if you testify under a deal with the prosecutor, it will be fully disclosed to the jury. The Governor’s attorney will ask you questions about whether or not you are giving biased or untrue testimony because of the deal, all of which the jury will see.

In the disclosure condition, those that initially declined to testify were further prompted, “Your attorney also reminds you that testifying and accepting the deal will be fully disclosed to the jury, who will then decide what to believe.” To ensure the salience of this point we also asked, “Do you understand that accepting your deal with the prosecutor will be fully disclosed to the jury?”

Across all those who initially declined in both conditions, the second chance was posed as, “Now, are you willing to testify for the FBI in exchange for the deal?” Options were “yes” or “no.”

As a secondary dependent variable, respondents were also asked, “How certain are you about your choice?” Responses were on a six-point Likert scale,¹⁶² with anchors defined as “certainly would testify for the FBI” to “certainly would not testify for the FBI.”

¹⁶²

Named after psychologist Rensis Likert, the Likert scale is a common survey method that asks respondents to measure the strength of their reactions to a number of statements. Presented with a statement, respondents choose between a scaled range of responses—

We fully crossed the two variables (incentive: high | low and disclosure: salient | not). Thus, there were four conditions and each respondent answered one vignette, which had one value for each variable.

2. Results

For this second experiment, we recruited a diverse group of 209 respondents from an online population.¹⁶³ As shown in Figure 2, we found substantial willingness to lie for the Government in order to secure the offered incentive. Overall, on the initial offer, across both incentive levels, 41% of respondents said that they would agree to testify falsely that the CEO and the official had made an explicit bribery agreement. After being reminded of the risks the witnesses faced if they refused (and reminded of the disclosure mandate in that condition), another 14% agreed to testify falsely. This very brief iterative process shows how a witness can be ground down over time. Together then, more than half (55%, CI: 48–62%) of respondents were willing to testify falsely in this second experiment.

We also split our sample by the two manipulated variables—size of incentive and salience of disclosure. At the first stage, we found that the willingness to lie was higher (46%) when the Government offered full immunity than when the Government offered mere fine and probation (37%), though we cannot rule out the null hypothesis ($p = 0.11$). By the second phase, the difference shrinks slightly ($p = 0.18$).

We found that reminding the witnesses twice that any deal would be disclosed to the jurors made no difference ($p = .82$, CI: -13–16%). In fact, the observed 2% insignificant difference was in the opposite direction of that hypothesized.

We found no substantial trends in the six-point Likert scale dependent variable. We also found no interesting interaction between the two variables.

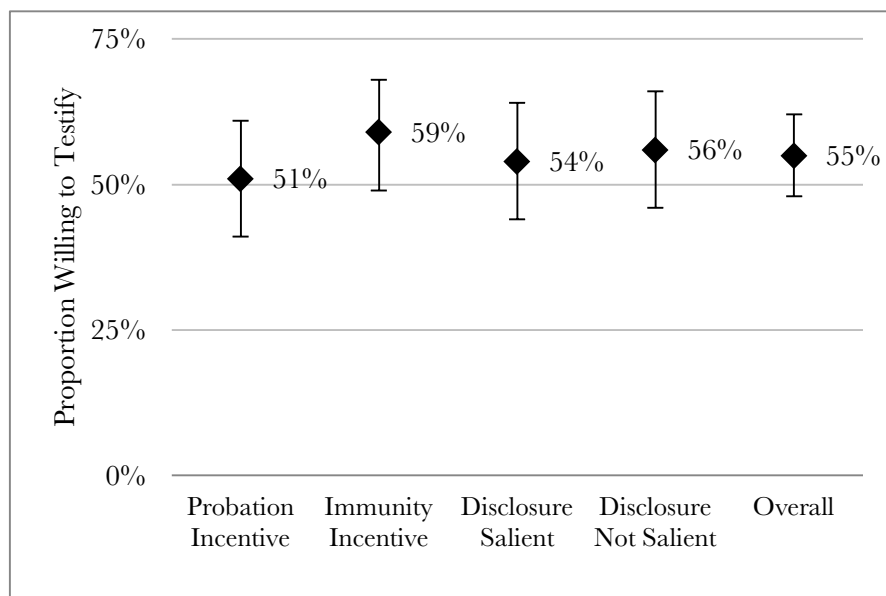
generally, strong disagreement, disagreement, uncertainty, agreement, and strong agreement (or some equivalent). The responses are assigned ordinal numbers, which make possible analytical methods such as comparison on narrow issues, correlation between issues, and individual or group tallies that reveal information about larger blocks of attitudes or behavior.

Likert Scale, DICTIONARY OF THE SOCIAL SCIENCES (Craig Calhoun, ed., 2002).

¹⁶³ We again used Amazon Mechanical Turk, paying \$1.25 per person. Respondents were 65% male. In terms of ethnicity, 75% identified as White; 8% Black/African-American, and 12% Asian. Separately, 7% identified as Spanish, Hispanic, or Latino. In terms of education, 17% had a high school degree or less, 70% had at least some college credit but not advanced degrees, and 14% had advanced degrees.

FIGURE 2

WILLINGNESS TO GIVE FALSE TESTIMONY BY SIZE OF
INCENTIVE AND SALIENCE OF DISCLOSURE MANDATE, WITH 95%
CONFIDENCE INTERVAL (STAGE 2, EXPERIMENT 2)



3. Discussion

We acknowledge the same limitations as for Experiment One. This was a vignette-based experiment. It likely underestimates the risk that witnesses will give false testimony when incentivized to do so, for many of the same reasons discussed above. Real incentives will be even more salient, and our respondents likely succumb to optimism and social desirability biases.

It is striking that we observe much greater willingness to lie in Experiment Two compared to Experiment One. It is possible that the stakes of refusing to lie were perceived to be higher in the second experiment, where the respondent was in the role of an innocent person who faced 20 years imprisonment on a crime he did not commit, versus the first experiment where the respondent was in the role of a person guilty of a minor felony.¹⁶⁴ Alternatively, respondents may have viewed the facts in the bribery case to be sufficiently odious that they were willing to inculcate the defendants, even if they were not technically guilty of the crime.

¹⁶⁴ But see Avishalom Tor et al., *Fairness and the Willingness to Accept Plea Bargain Offers*, 7 J. EMPIRICAL LEGAL STUD. 97, 106 (2010) (finding that innocents are less willing to accept plea offers than guilty defendants).

This second experiment is consistent with our earlier finding that willingness to lie is sensitive to the amount of incentive offered. Unsurprisingly, bigger incentives cause more lying.

We were surprised to find that the disclosure reminders did not increase the willingness to lie, as prior social science research suggests. The prior literature tests this phenomenon in a domain where respondents are assigned a conflicting interest and are required to provide advice to a factfinder. There the decision is just about what advice to give. Furthermore, the advisors themselves generally had uncertainty about the true value and gave the advice in a scalar way (e.g., “there is \$3.72 worth of coins in the jar”). Here, in contrast, the choice is distinct: will you accept an incentive and give a particular sort of binary information to the jury? This setting bundles the question of whether to accept an incentive with the binary question of whether to give the advice. Prior research shows that a disclosure mandate can cause individuals to decline financial relationships that may be perceived as biasing them.¹⁶⁵ This effect points in the opposite direction as the hypothesized “moral licensing” effect¹⁶⁶ and may have washed it out in the legal context that we simulated.

Another possible difference between this setting and the classic lab experiments is that we did not actually have a no-disclosure condition. Instead, we simply notified respondents in one condition that their incentive would be disclosed, and we were silent on the question in the control condition. It is possible that our respondents were tacitly aware of the disclosure norms in U.S. criminal law, even without our reminder. Thus our experimental design is not a perfect test of the counterfactual world in which disclosure is actually not required at all.

D. Experiment Three—Comparing Witness Behavior and Jury Evaluations

We sought to again test the ubiquitous situation in which the witness potentially faces jeopardy as a codefendant in the same case as the defendant, and we sought to explore the jury calibration hypothesis more directly, by testing both the witness perspective and the jury perspective in the same case. We sought to observe the counterfactual, of what the witness would do without the incentive, and to then also observe what a jury would do without the witness having the

¹⁶⁵ Genevieve Pham-Kanter et al., *Effect of Physician Payment Disclosure Laws on Prescribing*, 172 ARCHIVES INTERNAL MED. 819, 820 (2012) (finding that physicians were slightly more likely to decline financial relationships with the drug industry when state laws required disclosure); Sunita Sah & George Loewenstein, *Nothing to Declare: Mandatory and Voluntary Disclosure Leads Advisors to Avoid Conflicts of Interest*, 25 PSYCHOL. SCI. 575, 583 (2014) (finding that disclosures can motivate advisors to avoid conflicts of interests).

¹⁶⁶ See generally Anna C. Merrit et al., *Moral Self-Licensing: When Being Good Frees Us to Be Bad*, 4 SOC. & PERSONALITY PSYCHOLOGY COMPASS 344 (2010) (describing the phenomenon under which “past moral behavior makes people more likely to do potentially immoral things without worrying about feeling or appearing immoral”).

incentive, and compare these to “actual” outcomes for each decision maker, with the incentive. The difference is the causal effect of the incentive.

1. *Design*

We used the same fact pattern as in the second experiment, but this time had respondents participate in either the role of witness or juror. Table 2 shows a schematic of five experimental conditions in two arms.

The first arm had respondents in the role of the witness. The primary dependent variable was again binary: whether the witness agreed or refused to give the false testimony that inculcates the defendants. We did not manipulate the truth of the testimony, but instead focused on the worrisome cases of false testimony. For simplicity in this experiment (since we were manipulating other things described below), we offered immunity as a single level of incentive (or not), and did not include subsequent offers or reminders to grind down the potential witness.

In the first condition (W-I), the witness was in criminal jeopardy (a potential 20 year sentence and loss of his life’s savings defending himself) but offered immunity that was conditioned on whether he gave favorable (but false) testimony inculcating the CEO and the Governor: “For your attorney to get you an immunity deal, you will have to testify favorably to the Government, to confirm the FBI’s theory of the case.”¹⁶⁷ In the second condition (W-N), there was no such incentive: the witness was offered unconditional immunity regardless of whether the testimony would be favorable.¹⁶⁸ Thus, in the second condition, the witness had no incentive to lie. (Part IV below explores whether this situation could be created in the real world as a practicable reform.)

In the second arm, the subjects served as jurors deciding the same case, and the primary dependent variable was whether they convicted the CEO and the Governor. The vignette included legal definitions of the relevant crime, instructions about the presumption of innocence and the beyond a reasonable doubt standard, eight stipulated facts, and additional contested facts.

¹⁶⁷ “Your attorney says that in other cases, he has successfully arranged for important witnesses to get a deal for complete immunity. Immunity would mean that you cannot be prosecuted for any crime related to your testimony. For your attorney to get you an immunity deal, you will have to testify favorably to the Government, to confirm the FBI’s theory of the case. Both the attorney and the FBI also emphasize the potentially severe criminal sanctions.”

¹⁶⁸ “Fortunately, the FBI says that you are not their target. So even before questioning you, they have made arrangements to grant you full immunity. The order of immunity has already been finalized, and signed by a judge and the prosecutors. They just want the truth; they do not want you to feel any pressure either way. You hire an attorney who you know through your family. The attorney reviews the documents and confirms that, regardless of what you saw and regardless of what you say, you face no criminal charges.”

There were three experimental conditions in the Juror Arm. In the control condition, the witness did not appear at all; the Government simply asked the jury to convict on the remainder of the evidence. In the second condition (J-I, corresponding to W-I), the witness testified and inculpated the defendants, but the jury was notified that he received a traditional immunity deal that was effectively conditioned on him giving testimony that favors the Government.¹⁶⁹ In the third condition (J-N), the witness testified and inculpated the defendants, but had received an unconditional grant of immunity prior to even being interviewed by the FBI (as in W-N), thus ensuring that his testimony was not incentivized.¹⁷⁰

TABLE 2
FIVE EXPERIMENTAL CONDITIONS IN TWO ARMS

	Witness Arm	Juror Arm
Incentive	W-I	J-I
No Incentive	W-N	J-N
No Witness	N/A	N-W

2. Results

We recruited a diverse group of 351 respondents.¹⁷¹ Respondents spent approximately nine minutes completing the experiment.¹⁷² In the Witness arm, as shown in Figure 3, we found that 28% of respondents were willing to testify falsely, even when given unconditional immunity. That rate nearly doubles to 51%, when prosecutors offer immunity conditionally on them providing favorable testimony ($p < 0.01$).

¹⁶⁹ “On cross examination, you learn that the Aide was granted immunity from prosecution in exchange for her testimony The attorneys for the Defendants argue that this immunity deal created a huge incentive for the Aide to make up a false story. If she had not promised to help the Government, then she likely would have been prosecuted too, facing a threat of jail time. Thus, the attorneys suggest that her testimony is fabricated and you should ignore it. The only real evidence of guilt comes from this Aide, whose testimony was purchased by the Government.”

¹⁷⁰ “On cross examination, you learn that the Aide was granted immunity from prosecution in exchange for her testimony You also learn that because the prosecutor wanted to prevent the Aide from having any reason to lie, the prosecutor granted immunity to the Aide before finding out what the Aide had to say. Thus, the Aide had no incentive to testify by the threat of jail time. The Aide was thus free to testify for either side, depending on what he saw and heard.”

¹⁷¹ We used Amazon Mechanical Turk, paying \$1.25 each. This group was 52% male. In terms of ethnicity, 77% identified as White, 6% Black or African-American, 11% Asian, 1% American Indian or Alaskan Native, and 1% Native Hawaiian or Pacific Islander. Separately, 8% identified as Spanish, Hispanic, or Latino. In terms of education, 15% had a high school degree or less, 75% had at least some college credit but not an advanced degree, and 10% had advanced degrees.

¹⁷² Average time to complete was 9:03.

In the Jury arm, shown in Figure 4, we find that only 25% of respondents vote to convict on the basic case, when no witness testifies. An incentivized witness substantially raises the rate of convictions to 44% ($p < 0.01$). If we assume, for a moment, that the witness is testifying truthfully, and would not do so without the incentive, then this comparison demonstrates the systematic value of prosecutorial incentives for reducing false negatives (exoneration of the guilty) in the criminal justice system. On the other hand, if we assume that the witness is testifying falsely, then this comparison shows the risk of false convictions created by incentives.

Comparing the conviction rates in the conditions in which the witness appears with conditional incentive (44%) versus an unconditional incentive (50%), we find them statistically indistinguishable. Nonetheless, the trend is as one might hypothesize—jurors may give more weight to testimony whose substance is not bought by the prosecutors.

In the jury condition with an incentivized witness, after rendering a verdict (and unable to go back), respondents were asked: “Assume for a moment that a defendant is not guilty, but that a witness is given an immunity to testify for the government. What percentage of the time do you think a witness in this situation would be willing to testify falsely to get immunity from prosecution himself?” On average, jurors estimated that a witness would be willing to testify falsely 40% of the time (SD: 25.16).

FIGURE 3

WITNESSES' WILLINGNESS TO TESTIFY FALSELY BY PRESENCE OF INCENTIVE, WITH 95% CONFIDENCE INTERVAL (EXPERIMENT 3)

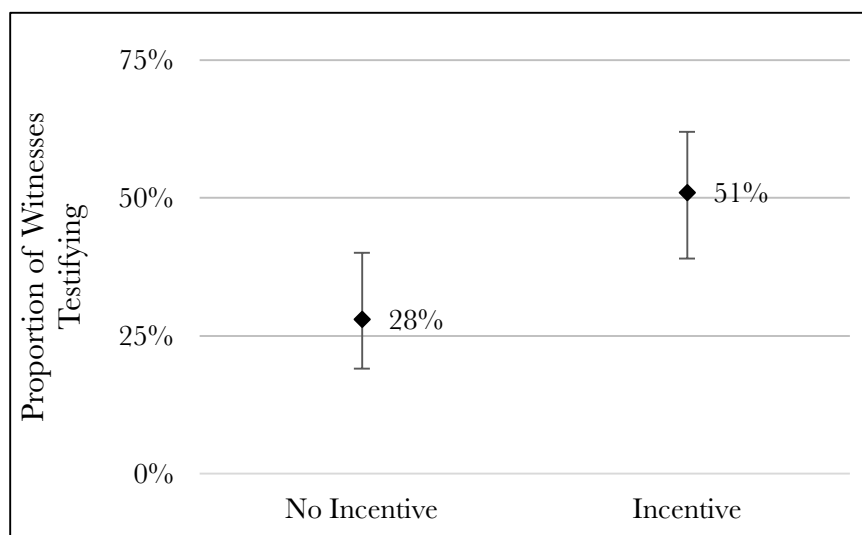
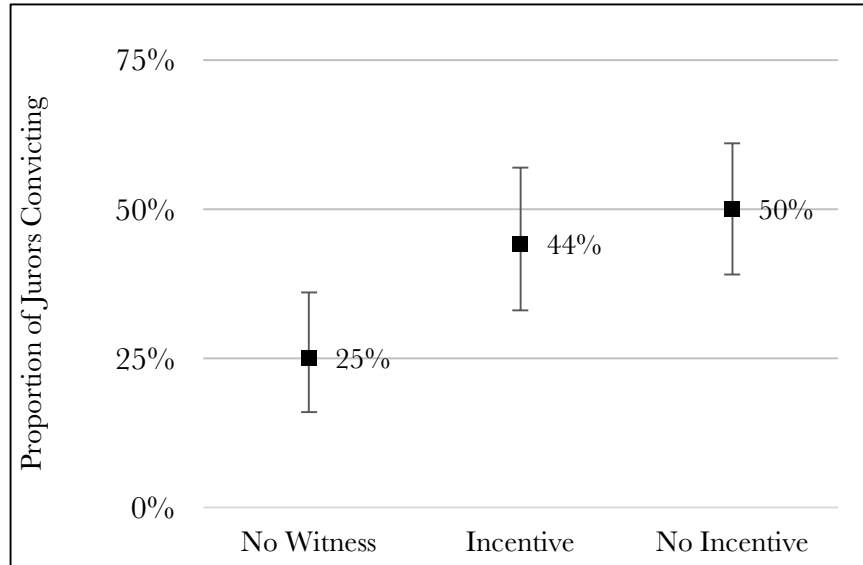


FIGURE 4

JURORS' WILLINGNESS TO CONVICT BY PRESENCE OF WITNESS
AND WITNESS INCENTIVES, WITH 95% CONFIDENCE
INTERVAL (EXPERIMENT 3)



We acknowledge the same limitations of our study described for the first and second experiments. This third experiment connects to a larger literature on jury behavior, which shows that the verdicts of both mock jurors and real jurors tend to track the strength of the evidence presented.¹⁷³ A leading study suggests that neither “stimulus case realism” nor “study population” dampen the applicability of mock jury research to real-world scenarios.¹⁷⁴

One might be particularly concerned that our written vignette did not allow jurors to evaluate the demeanor of witnesses. Perhaps the demeanor

¹⁷³ See DENNIS J. DEVINE, JURY DECISION MAKING: THE STATE OF THE SCIENCE 122–23 (2012) (reviewing this literature). For a direct (but extremely limited) test of the validity question, see David L. Breaux & Brian Brook, “Mock” Mock Juries: A Field Experiment on the Ecological Validity of Jury Simulations, 31 LAW & PSYCHOL. REV. 77, 89–90 (2007) (finding that the results of disciplinary hearings in which jurors knew the proceedings were mock did not predict the results of the same disciplinary hearings in which jurors were misled into believing that the proceedings were genuine); see also Neil Vidmar, *The Performance of the American Civil Jury: An Empirical Perspective*, 40 ARIZ. L. REV. 849, 898 (1998) (reviewing various studies that involve both surveys of real jurors and mock jury experiments, finding that juries do not decide cases any less competently than judges).

¹⁷⁴ Robert J. MacCoun, *Comparing Legal Factfinders: Real and Mock, Amateur and Professional*, 32 FLA. ST. U. L. REV. 511, 512 (2005) (citing Brian H. Bornstein, *The Ecological Validity of Jury Simulations: Is the Jury Still Out?*, 23 LAW & HUM. BEHAV. 75 (1999)).

of the incentivized lying witness would have cued the jury to disbelieve him? As the Supreme Court has said, “A fundamental premise of our criminal trial system is that ‘the *jury* is the lie detector.’”¹⁷⁵ However, it is unlikely that a richer stimulus—even a video or a live actor attempting to reproduce the demeanor of a lying witness—would have actually helped jurors detect the lies more often.¹⁷⁶ As Dan Simon explains the prior literature:

To the extent that liars behave differently from truth tellers, they do so in ways that are diverse, idiosyncratic, and barely perceptible Numerous studies have found consistently that people’s judgments of deceit from demeanor are barely better than flipping a coin [J]udgments of deceit that are based on . . . audiovisual presentations . . . and transcripts of the testimony share similar levels of accuracy.¹⁷⁷

In fact, if we had provided a richer stimulus and the jurors then focused on the witness’s demeanor rather than focusing on his incentive to lie, overall accuracy may have been even worse.

A related limitation of our study is that we did not allow jurors to deliberate together to reach collective verdicts, but rather we observed only individual juror preferences. The prior literature shows that the votes of individual jurors are predictive of collective jury outcomes, as the minority-voters going into deliberation are likely to be eventually persuaded by the majority voters.¹⁷⁸ Thus individual juror responses are meaningful.

Notwithstanding the limitations, these results are disconcerting. In the Witness arm, the incentive had a very large effect on the substance of the witness’s testimony. The 51% finding in Experiment Three is a near-replication of the 55% of witnesses willing to testify falsely when given conditional immunity in Experiment Two.

It is worrisome (although not surprising) that individuals would behave in ways that are consistent with profound incentives. The epistemic value of such testimony is quite poor, since the same testimony would probably be given, regardless of whether it is true. Given the optimism and social desirability biases described above, the true rate may be quite high.

In the W-N conditions, we were surprised to find nearly one-fourth of

¹⁷⁵ United States v. Scheffer, 523 U.S. 303, 313 (1998) (quoting United States v. Barnard, 490 F.2d 907, 912 (9th Cir. 1973)).

¹⁷⁶ See ADAM BENFORADO, UNFAIR: THE NEW SCIENCE OF CRIMINAL INJUSTICE, 139–145 (2015) (reviewing the scientific literature on lie detection based on demeanor cues).

¹⁷⁷ DAN SIMON, IN DOUBT: THE PSYCHOLOGY OF THE CRIMINAL JUSTICE PROCESS, 166–68 (2012).

¹⁷⁸ See Shari Seidman Diamond & Jonathan D. Casper, *Blindfolding the Jury to Verdict Consequences: Damages, Experts, and the Civil Jury*, 26 LAW & SOC’Y REV. 513, 545–46 (1992) (“[T]he median [individual juror award pre-deliberation] is the best single predictor of the jury’s final verdict.”); see also Marla Sandys & Ronald C. Dillehay, *First-Ballot Votes, Predeliberation Dispositions, and Final Verdicts in Jury Trials*, 19 LAW & HUM. BEHAV. 175, 175 (1995) (“Interview data from respondents who had served on felony juries indicate that first ballots do predict jury verdicts at a high level.”).

respondents willing to testify falsely even in the condition where they had no incentive do so. This may be an effect of individuals simply deferring to Government's determination that the defendants were corrupt. Indeed, prior research has found that merely when one side summons a bystander witness to testify, the testimony tends to be swayed in a favorable direction.¹⁷⁹ Some may have felt a sense of reciprocity for receiving the gift of immunity, even if it was not conditional on the giving of favorable testimony.

Given that we observed a very large effect of incentives in the witness condition, we hoped to also see a very large effect of disclosed witness incentives on the jury's decision. Such a finding would indicate that the current legal doctrine of mandatory disclosure (i.e., *Brady*) is working effectively, and that prosecutorial incentives may not be a primary cause of wrongful convictions. Unfortunately, we did not see that concordance. Although we cannot rule out a modest-sized effect, we did not see any statistically significant effect of an incentives disclosure on the jury, even though the presence of incentives had a huge effect on the substance of the witness's testimony. Although the witness was willing to lie more than half the time, the presence of the unreliable witness nearly doubled the chance that a juror would convict. This is a recipe for false convictions.

How can such findings be explained? One possibility is that jurors succumb to the fundamental attribution error ("FAE").¹⁸⁰ Human behavior is shaped by both character (including values such as honesty) as well as situations (including incentives), but the FAE is a tendency of people to underestimate the importance of situational factors when evaluating the behavior of others.¹⁸¹ In classic experiments, subjects were asked to evaluate an essay to determine whether the author was sincere in the beliefs described, while the researchers manipulated a cover story as to whether the author wrote the essay voluntarily or was ordered to do so.¹⁸² Respondents tended to believe the essayist's behavior must correspond to an underlying true belief, discounting the situational factors. Our findings, that jurors are not sensitive to the presence of even profound incentives that likely affected the witness's testimony, are consistent with this phenomenon.¹⁸³

Jurors may have difficulty imagining what they would do if put in the shoes of the witness. The incentives will be more salient to the witness than

¹⁷⁹ Neil Vidmar & Nancy MacDonald Laird, *Adversary Social Roles: Their Effects on Witnesses' Communication of Evidence and the Assessments of Adjudicators*, 44 J. PERSONALITY & SOC. PSYCHOL. 888, 895 (1983); see also Christopher Tarver Robertson, *Blind Expertise*, 85 N.Y.U. L. REV. 174, 185 (2010) (describing "affiliation bias" of expert witnesses, and compiling sources).

¹⁸⁰ See Edward E. Jones & Victor A. Harris, *The Attribution of Attitudes*, 3 J. OF EXPERIMENTAL SOC. PSYCHOL. 1, 23 (1967) (describing FAE).

¹⁸¹ Daniel T. Gilbert & Patrick S. Malone, *The Correspondence Bias*, 117 PSYCHOL. BULL. 21, 22 (1995).

¹⁸² Jones & Harris, *supra* note 180, at 4.

¹⁸³ See generally DAN SIMON, IN DOUBT 152–53 (2012) (collecting sources for the proposition that, "people are largely insensitive to the factors that make identifications more or less accurate.").

the juror, making it unsurprising that a juror underestimates their effect. Our finding that 51% of witnesses would testify falsely, compared with an estimate of 41% given by jurors, is consistent with this explanation.

IV. SOLUTIONS

Our empirical studies add to our epistemic analysis and a body of prior research, all of which shows that incentivizing witnesses creates a severe risk of wrongful convictions, and disclosure fails to curb that risk. In our three experiments, prosecutors appear able to procure favorable testimony, regardless of whether it is true. We are unaware of any evidence that the current regime of disclosure allows jurors to reliably determine the truth on the basis of incentivized testimony.

There is a range of potential solutions. First, David Sklansky has argued, “It is bad enough to run the risk of perjury; it is even worse to run the risk only in favor of one side.”¹⁸⁴ Accordingly one solution would be to permit defendants to give incentives to witnesses too.¹⁸⁵ Yet, prosecution is a public function representing public values; criminal defendants would abuse the power to immunize fellow criminal defendants. And judicial oversight of any such system would raise separations of powers problems, since the executive alone holds the power to prosecute.¹⁸⁶

Less radically, one could hope that with additional training, prosecutors become more discerning so as to only give incentives for true testimony.¹⁸⁷ At best this is a solution for the outlier cases; not a solution to the fundamental epistemological problem. Human attorneys are fundamentally limited in their own abilities to discern the truth, even if they were not biased by their adversarial roles.

Or, judges can become more aggressive in instructing jurors to be wary of such testimony, or allow them to hear framework testimony from experts to put the disclosure in context.¹⁸⁸ Yet, an amplified disclosure strategy

¹⁸⁴ Sklansky, *supra* note 20, at 525. Similarly see, SIMON, *supra* note 183, 210 (2012) (“The process is deemed fair if the playing field is roughly level . . .”).

¹⁸⁵ H. Richard Uviller, *No Sauce for the Gander: Valuable Consideration for Helpful Testimony from Tainted Witnesses in Criminal Cases*, 23 CARDOZO L. REV. 771, 782–83, 792–93 (2002) (contending that defendants should be entitled to the benefit of witness compensation, on the basis of the compulsory process clause of the Sixth Amendment and the Due Process Clause of the Fifth Amendment); see also C. Blaine Elliott, *Life’s Uncertainties: How to Deal with Cooperating Witnesses and Jailhouse Snitches*, 16 CAP. DEF. J. 1, 10 (2003) (discussing these proposals).

¹⁸⁶ *United States v. Nixon*, 418 U.S. 683, 693 (1974) (“[T]he Executive Branch has exclusive authority and absolute discretion to decide whether to prosecute a case . . .”).

¹⁸⁷ Cohen, *supra* note 13, at 825–27 (proposing that prosecutors get additional training).

¹⁸⁸ See Mark W. Bennett, *Unspringing the Witness Memory and Demeanor Trap: What Every Judge and Juror Needs to Know About Cognitive Psychology and Witness Credibility*, 64 AM. U. L. REV. 1331, 1373–75 (2015) (proposing revised jury instructions); Harris, *supra* note 2, at 4–5 (proposing to “make that process

simply tells factfinders who they (maybe) should *not* believe. It tells them that (maybe) they should distrust a given witness that may have ulterior motives. But it does not give them a clearer view of the truth.¹⁸⁹

We believe that two particular solutions demand further study: exclusion and blinding. To assess these solutions, it is useful to draw on Dan Simon's concept of criminal trials having "diagnosticity," the accurate sorting of guilty from the non-guilty defendants, similar to how a medical test is supposed to sort those that do have a given disease from those who do not.¹⁹⁰ A criminal trial can instead fail, returning a false negative (exonerating a guilty person) or a false positive (convicting an innocent person). The rate of true positives and true negatives, versus these false positives and false negatives, is the diagnosticity of criminal trials.

A. Exclusion

One solution is to exclude incentivized testimony from trial.¹⁹¹ Such incentivized testimony is arguably more prejudicial than probative, and thus unhelpful to the factfinder.¹⁹² Our findings that prosecutors can often procure favorable testimony from rational witnesses, regardless of whether it is true, suggests that such incentivized testimony is not very reliable.

Importantly, this solution would not bar prosecutors from giving incentives to informants. For example a member of a criminal conspiracy could be given immunity to wear a recording device or to lead the investigators to physical evidence, which is then sufficient to convict the primary defendant.

[of selecting, preparing, and compensating witnesses] more fully discoverable and, therefore, more accessible to assessment by triers of fact"); *see also* United States v. Allen, 716 F.3d 98, 105–06 (4th Cir. 2013) (affirming a trial court's refusal to put on an "expert criminal defense attorney to explain the legal significance of [government requests for leniency for cooperating defendants]"); David Alan Sklanksy, *Evidentiary Instructions and the Jury as Other*, 65 STAN. L. REV. 407, 456 (2013) (arguing that "[e]videntiary instructions probably do work, although imperfectly and better under some circumstances than others"). *But see* Neuschatz et al., *supra* note 126, at 188 (finding framework expert had no effect on mock jury's view of informant); *see also* Maeder & Pica, *supra* note 128, at 566 (finding similar).

¹⁸⁹ See Athan P. Papailiou et al., *The Novel New Jersey Eyewitness Instruction Induces Skepticism but Not Sensitivity*, PLOS ONE, Dec. 9, 2015, at 8–9 (finding that New Jersey's enhanced jury instruction for eyewitness testimony reduced reliance on both faulty and trustworthy eyewitness testimony); *see also* Robertson, *supra* note 131, at 696 (suggesting the necessity of an intervention that increases the amount of reliable evidence, rather than merely labeling more evidence more emphatically as unreliable).

¹⁹⁰ Dan Simon, *The Limited Diagnosticity of Criminal Trials*, 64 VAND. L. REV. 143, 144, 146 (2011); *see also* SIMON, *supra* note 177, at 144 (describing the "diagnostic task" of "reach[ing] a factual determination whether the defendant did or did not commit the crime, that is, to distinguish between guilty and innocent defendants" as the criminal justice system's "essential objective").

¹⁹¹ Hollis, *supra* note 21, at 456 (arguing that contingent plea agreements should be disallowed).

¹⁹² *See* FED. R. EVID. 403 (establishing that courts may exclude relevant evidence when the evidence is substantially more prejudicial than probative).

Still, the proposed remedy of exclusion would prevent an incentivized witness from herself testifying as to the defendant's guilt, based on her own *ipse dixit*.

Some jurisdictions require that prosecutors corroborate some forms of incentivized testimony before offering it to jurors.¹⁹³ Yet, the witnesses' testimony is offered for its marginal value on top of the corroborating evidence. Thus, the fact of corroboration does not explain how much marginal value it should be given. Even worse, the corroboration may itself be tainted by the purchased testimony.¹⁹⁴

Doing without incentivized witnesses would likely reduce wrongful convictions. Whether it increases the diagnosticity of trials overall depends on how much it reduces the power of prosecutors to secure true convictions, and thus achieve the deterrence and retribution functions of the law. It is possible that the police will soon develop, or already have developed, alternative forms of evidence (e.g., wiretaps, video surveillance, GPS tracking, DNA testing), which obviate the need for human witnesses in many cases.¹⁹⁵ At some point, thus, the balance may tip and criminal trials become more diagnostic when incentivized witnesses are excluded. These are empirical questions.

If a complete ban on incentivized testimony is too radical, courts could instead attempt to screen the least reliable incentivized testimony, while permitting other seemingly more reliable testimony. This mechanism would be similar to the "*Daubert*" screening courts already use for expert witnesses, to ensure that it is reliable and helpful to the jury.¹⁹⁶ Similarly, for every incentivized witness the trial court could hold a hearing in limine to determine

¹⁹³ See James C. Steffes, *Immunity Given to the Accomplice Witness*, 21 DRAKE L. REV. 331, 332 (1972).

¹⁹⁴ See William C. Thompson, *Determining the Proper Evidentiary Basis for an Expert Opinion: What Do Experts Need to Know and When Do They Know Too Much?*, in BLINDING AS A SOLUTION TO BIAS: STRENGTHENING BIOMEDICAL SCIENCE, FORENSIC SCIENCE, AND LAW 133, 144–45 (Christopher T. Robertson & Aaron S. Kesselheim eds., 2016); Itiel E. Dror & Greg Hampikian, *Subjectivity and Bias in Forensic DNA Mixture Interpretation*, 51 SCI. & JUST. 204, 205 (2011) (giving an example of an adjudicated criminal case where an incentivized witness inculpated the defendant, and DNA scientists aware of this testimony then opined that the physical evidence could not exclude the defendant; seventeen independent DNA scientists reviewed the same evidence without exposure to the purchased testimony, and only one agreed with the trial experts).

¹⁹⁵ See ADAM BENFORADO, UNFAIR: THE NEW SCIENCE OF CRIMINAL INJUSTICE, 261 (2015) (“[T]echnologies already exist that can reduce our dependence on fallible human faculties With a proliferation of security cameras, an army of private citizens armed with smartphones, and more recording in interrogation rooms, squad cars, and prisons, the need to rely on the vagaries of human memory is greatly reduced. And the less dependent we are on eyewitness identifications and testimony, the less we have to place our trust in the ability of jurors to assess credibility Improved forensic analysis may also play an important role.”).

¹⁹⁶ *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592–93 (1993); see also Sandra Guerra Thompson, *Daubert Gatekeeping for Eyewitness Identifications*, 65 SMU L. REV. 593, 594 (2012) (“[I]t is especially appropriate for courts in criminal trials to engage in gatekeeping for evidence fraught with reliability issues because it is highly prone to misleading the jury and causing a wrongful criminal conviction.”); Suedabeh Walker, Comment, *Drawing on Daubert: Bringing Reliability to the Forefront in the Admissibility of Eyewitness Identification Testimony*, 62 EMORY L.J. 1205, 1234 (2013) (proposing a

whether the testimony is more probative than prejudicial.

The doctrinal test could require the trial judge to make a finding on the record that, even with the given type and amount of incentives actually paid for favorable testimony, the witness would be unlikely to give such testimony if it were false. This counterfactual test is the appropriate epistemological question, because it is what makes the testimony reliable as an evidentiary signal of the truth. If, instead, the incentive would be likely to cause rational witnesses to give favorable testimony regardless of whether it is true—likely quite often—then the testimony lacks probative value, and is thus more prejudicial.¹⁹⁷ Of course, such counterfactual reasoning will be difficult and prone to speculation. But ignoring that difficulty is no way to solve it.

Admittedly, it is not clear that judges are any better at lie detection than are jurors.¹⁹⁸ At the very least, however, this process would give defendants two chances to challenge an incentivized witness, first as to admissibility with the judge, then arguing the weight of the evidence with jurors. As in the expert witness context, the judge has a gatekeeping obligation to ensure that unreliable evidence does not reach the jury at all.¹⁹⁹ In this way, the gatekeeping function would rebalance the scales that currently unjustifiably favor the prosecution.

B. Blinding

A second, novel solution is to retain leniency, immunity, and other incentives, and retain the prosecutor's unilateral power to grant those deals, but restructure the deals in a way that eliminates their propensity to create false testimony. We piloted such a concept in the unconditional transactional immunity deal offered by the prosecution in one condition of Experiment Three above, where the prosecutor granted broad immunity to the potential witness before even learning whether the witness would testify favorably to the Government. In this way, the prosecutor does not create an incentive that is conditional on that testimony favoring one side.

Blinding is a mechanism that has been successfully used in many domains, from biomedical science to the anonymous voting booth.²⁰⁰ Ben

Daubert-like standard for the admissibility of eyewitness identification testimony).

¹⁹⁷ See FED. R. EVID. 403.

¹⁹⁸ See Robertson, *supra* note 179, at 196 (reviewing sources for the proposition that judges also have difficulty with scientific evidence).

¹⁹⁹ *Daubert*, 509 U.S. at 597 (“We recognize that, in practice, a gatekeeping role for the judge, no matter how flexible, inevitably on occasion will prevent the jury from learning of authentic insights and innovations. That, nevertheless, is the balance that is struck by Rules of Evidence designed not for the exhaustive search for cosmic understanding but for the particularized resolution of legal disputes.”).

²⁰⁰ See generally BLINDING AS A SOLUTION TO BIAS: STRENGTHENING BIOMEDICAL SCIENCE, FORENSIC SCIENCE, AND LAW (Christopher T. Robertson & Aaron S. Kesselheim eds., 2016).

Franklin conducted the first known blinded experiment in his own living room to disaggregate the theatrics of a medical charlatan from claimed healing powers.²⁰¹ One of us (CTR) has elsewhere argued that the biases of expert witnesses could be ameliorated by the blinding of litigants (in the selection of experts) and experts (in rendering opinions on cases), to help jurors get a clearer view of the truth.²⁰² Similarly, here in the context of eyewitness testimony, it is useful to disaggregate materiality from favorability—two distinct functions currently performed by prosecutorial incentives.

First, prosecutors' deals provide information to the prosecutors and to the factfinder, by overcoming whatever resistance a witness may have to providing substantive testimony. It can be onerous to be a witness in a criminal case. An incentive allows the prosecutor to overcome feigned ignorance or lack of memory; the witness must bindingly show that she will testify substantively before getting the benefits of that deal. These stated intentions are reliable for the prosecutor because they can be locked down as sworn statements and/or statements to an official, which then give rise to various theories of criminal jeopardy if a witness later offers contrary testimony.²⁰³ In this way, incentives procure material information.

Second, incentives also tend to cause witnesses to signal that they will give testimony that is favorable to prosecutors, since prosecutors have the legal monopoly on giving such incentives. A witness who would give unfavorable testimony is much less likely to receive the incentive. This second function is the worrisome one, which has the prospect of causing the witness to provide false testimony, when the truth happens to be unfavorable to the prosecution, even if the prosecution does not know that is the case.

Can these two functions be disaggregated so that incentives produce material information for trial, without producing an incentive to lie? Could prosecutors irrevocably decide whether to grant the benefit without knowing whether the witness's testimony is likely to be favorable?

In deciding whether to offer an incentive, a prosecutor must be able to determine whether the testimony will be relevant and material (e.g., whether the witness was present at the scene, whether he saw who committed the crime). However, the prosecutor arguably does not need to know whether the relevant, material testimony will be favorable towards a verdict of guilt

²⁰¹ *Id.* at 25–26, 46–47.

²⁰² See Robertson, *supra* note 179, at 179 (developing the concept and showing how it could be implemented in civil settings in particular); Christopher T. Robertson & David V. Yokum, *The Effect of Blinded Experts on Juror Verdicts*, 9 J. EMPIRICAL LEGAL STUD. 765, 770 (2012) (testing the efficacy of using blind experts as a trial strategy).

²⁰³ See discussion surrounding *supra* notes 86–88.

or innocence. Either sort of testimony would serve justice, and the prosecutor is an officer of the court with a special duty beyond that of an advocate.²⁰⁴

Importantly, the federal law that formalizes immunity deals already requires the decision to be made from a senior Department of Justice official, rather than by line prosecutors.²⁰⁵ The material given to this official could thus be manipulated so he or she decides whether to offer the incentive with knowledge of the materiality of the testimony, but without knowing its favorability to the Government.

There are precedents for these sorts of interventions, where one set of lawyers knows information that is withheld from others, even on the same side of the case. For example, different prosecutors are assigned to “taint teams” to review material that is potentially attorney-client protected.²⁰⁶ The Department of Justice also uses a blinding procedure to ensure that ultimate decisions about whether to pursue the death penalty are not biased by knowledge about the race of the defendant.²⁰⁷

This proposal would blind senior decision makers, but not the line prosecutors who submit proposed incentives to them. Of course, line-prosecutors will selectively submit applications to the senior officials, only recommending incentives when the testimony is likely to be favorable, and witnesses will thus have an incentive to shape their testimony accordingly. One solution would be to lock down testimony that the witness will testify substantively (perhaps in a carefully-written sworn affidavit), but allow cheap talk about the content of the testimony at this preliminary stage. Defense attorneys could facilitate

²⁰⁴ MODEL RULES OF PROF'L CONDUCT r. 3.8 cmt. 1 (AM. BAR ASS'N 2016) (“A prosecutor has the responsibility of a minister of justice and not simply that of an advocate.”); Russell M. Gold, *Beyond the Judicial Fourth Amendment: The Prosecutor's Role*, 47 U.C. DAVIS L. REV. 1591, 1635 (2014) (reiterating the special ethical duties of prosecutors); accord *United States v. Agurs*, 427 U.S. 97, 110–11 (1976) (stating that prosecutors should ensure that “justice shall be done”); *Berger v. United States*, 295 U.S. 78, 88 (1935) (“It is as much [the prosecutor's] duty to refrain from improper methods calculated to produce a wrongful conviction as it is to use every legitimate means to bring about a just one.”); NAT'L PROSECUTION STANDARDS § 1-1.1 (NAT'L DIST. ATT'YS ASS'N 2009) (“The prosecutor is an independent administrator of justice. The primary responsibility of a prosecutor is to seek justice”); STANDARDS FOR CRIMINAL JUSTICE: PROSECUTION FUNCTION AND DEF. FUNCTION § 3-1.2(c) (AM. BAR ASS'N 1993) (“The duty of the prosecutor is to seek justice, not merely to convict.”).

²⁰⁵ 18 U.S.C. § 6003(b) (2012) (“A United States attorney may, with the approval of the Attorney General, the Deputy Attorney General, the Associate Attorney General, or any designated Assistant Attorney General or Deputy Assistant Attorney General, request an order under subsection (a) of this section”).

²⁰⁶ *United States v. Taylor*, 764 F. Supp. 2d 230, 234–35, 238 (D. Me. 2011) (holding suppression of e-mails and related information was not warranted because a filter agent, or taint team member, removed all privileged e-mails).

²⁰⁷ Sunita Sah et al., *Blinding Prosecutors to Defendants' Race: A Policy Proposal to Reduce Unconscious Bias in the Criminal Justice System*, BEHAV. SCI. & POL'Y, Dec. 2015, at 70–71 (finding that race plays a significant role in a convicted felon's sentencing, and that the Justice Department therefore has reiterated its commitment to blind sentencing).

this sort of agreement by preventing the witness from speaking on the record in a way that binds his substantive testimony. Alternatively, the agreement to testify substantively would include the Government waiving any prosecution for inconsistent prior statements (though they could be used as impeachment on cross-examination). This sort of waiver is routine in deals with prosecutors—recall that the primary function of incentives, even under the status quo, is to change the testimony that the witness has otherwise signaled that she would give if not incentivized.²⁰⁸

Let us set aside the practicalities of how blinding would be implemented. Regardless of those details, one should worry that defendants will use such deals opportunistically. There are two forms of such opportunism.

First, the potential witness could claim that he has material, relevant information and secure an incentive, but then either refuse to actually testify at trial or testify to the contrary, saying that he does not in fact have material, relevant information. This first form of opportunistic behavior can be policed in the same way that incentive deals are currently policed—the benefit can be withheld conditional on there being substantive testimony.

Second, concededly, the blinding of incentives does not eliminate the incentive for witnesses to feign that they have material information, since only those claiming to have material information will receive an incentive to testify. Such incentivized testimony will thus produce some information for the jury that is untrue, by witnesses who would have otherwise simply remained silent or forgetful (if given no incentive) or testified for the Government (if given a conditional incentive). With blinded incentives, such false testimony will be noise—not systematically biased towards conviction of the innocent, as with conditional incentives. That would seem to be progress.

CONCLUSION

It is an odd and disturbing system of criminal justice that, without hyperbole, depends on legalized bribery.²⁰⁹ Given that prosecutors have other tools that can be used to compel a witness to testify, our analysis has shown that the causal effect of incentives is to change what the witness actually says on the stand, converting it to something that the prosecutor prefers.²¹⁰

Empirically, witnesses appear willing to testify favorably to the Government when incentivized to do so, regardless of the truth. Juries fail to sufficiently discount for this risk of false testimony.

²⁰⁸ See *supra* the Introduction.

²⁰⁹ See *supra* the Introduction (showing that courts have held that the giving of condition incentives to witnesses would be bribery, except that prosecutors are not persons for the purpose of the federal bribery statute).

²¹⁰ See *supra* Part II (reviewing other tools available to prosecutors).

There are several potential reforms, which can work together to reduce the risk of wrongful convictions, while maintaining prosecutors' ability to secure correct convictions. For example, if blinded (unconditional) incentives are proven to be feasible, that may strengthen arguments for excluding testimony bought in contingent deals.

Such reforms will change the relative power of prosecutors and defendants to produce favorable outcomes. If criminal trials presently include a systematic bias in favor of prosecutors, such reforms may increase diagnosticity overall.²¹¹ Blinding or exclusion may remove one thumb that is now on the scale of criminal justice.

There are a number of grave constitutional questions raised by the current system of incentivized testimony. First, the high potential for perjured testimony we saw in the presence of incentives suggests that a defendant's due process rights may be threatened. It is difficult to obtain a fair trial in the face of perjury, and this is more troublesome given that the perjury is in some cases caused by the actions of the prosecutor. Second, the inability of jurors to properly discount incentivized testimony suggests the current incentive regime prevents defendants from obtaining a full and fair jury trial, or an effective cross examination. When these constitutional issues are considered in light of the significant number of false convictions related to incentivized disclosure, it serves as a significant condemnation of the current regime.

²¹¹ See, e.g., David S. Caudill, *Professional Deregulation of Prosecutors: Defense Contact with Victims, Survivors, and Witnesses in the Era of Victims' Rights*, 17 GEO. J. LEGAL ETHICS 103, 103 (2003) (noting that defense attorneys are sometimes unable to even talk to witnesses). See generally Alex Kozinski, Preface, *Criminal Law 2.0*, 44 GEO. L.J. ANN. REV. CRIM. PROC. iii (2015) (surveying a range of systematic factors benefitting the prosecution).