

Convicting the Innocent: An Empirically Justified Wrongful Conviction Rate

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“That would make the error rate [in felony convictions] .027 percent—or, to put it another way, a success rate of 99.973 percent.”

—Justice Antonin Scalia, concurring in *Kansas v. Marsh*, June 26, 2006 (quoting Joshua Marquis).¹

Introduction

The news about the astounding accuracy of felony convictions in the United States, delivered by Justice Scalia and Joshua Marquis in the passage set out epigrammatically above, would be cause for rejoicing if it were true. Imagine. Only 27 factually wrong felony convictions out of every 100,000! Unfortunately, it is not true, as the empirical data analyzed in this article demonstrate.

I. Paleyites and Romillists

People who think about the problem of wrongful conviction often fall into two camps, which we might label Paleyites and Romillists. Paleyites, whom I have named after the early exponent of this position, the 18th-century proto-utilitarian Rev. William Paley, believe that, even though it is wrong to convict an innocent person, such

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¹ 126 S. Ct. 2516, 2538, 165 L. Ed. 429, 456–57 (2006), quoting a recent op-ed article by Joshua Marquis, District Attorney of Clatsop County, Oregon. See Joshua Marquis, *The Innocent and the Shammed*, N.Y. TIMES, Jan. 26, 2006, at A23 (reprinted in 40 JUN. PROSECUTOR 40 (2006)). The .027% figure will be referred to hereinafter as the “Marquis op-ed rate.” Lest anyone think that the quotation from Marquis was not a complete endorsement by Justice Scalia, please note that Scalia embraces and adopts the “.027% error rate” in his own next paragraph. *Id.* at 2538, 165 L. Ed. at 457. This statement and its justification *vel non* are discussed *infra* at note 16.

convictions are not only inevitable in a human system, but represent the necessary social price of maintaining sufficient criminal law enforcement to provide an appropriate level of security for the public in general. Hence, one should not be moved by the prospect of wrongful conviction to take actions that would reduce such convictions, no matter how common, at the cost of reducing convictions of the guilty to a dysfunctional level.²

Paleyites tend to be conservative, in the sense that any changes to current ways of conducting the criminal justice process that are proposed for their supposed effect on protecting the innocent, will be presumed so counterproductive in their effect on convicting the guilty that they will be opposed.

Romillists, whom I have named after the early 19th-century reformist Sir Samuel Romilly, have such a horror of convicting the innocent that they are willing to propose many changes to whatever system exists, on the ground that such changes in our way of criminal law enforcement will better protect the innocent.³ In so doing, it may be that some of the proposals might make the conviction of the truly guilty more difficult, perhaps significantly so. Whatever the actual effect, the Paleyites can be counted on to find even the potential effect abhorrent, and to label the proponents “soft-headed sentimentalists” or some such, while the Romillists in turn will label the Paleyites hard-

² Paley’s famous quotation on the subject is: “[H]e who falls by a mistaken sentence, may be considered as having fallen for his country, whilst he suffers under the operation of those rules, by the general effect and tendency of which the welfare of the community is maintained and upholden.” WILLIAM PALEY, *THE PRINCIPLES OF MORAL AND POLITICAL PHILOSOPHY* 443 (Joshua Belcher 1811) (1785). The passage is part of Paley’s attack on the maxim, “It is better that ten guilty persons escape than that one innocent man should suffer,” which was of course Blackstone’s version of the ratio image for giving the accused the benefit of a doubt in a criminal case. For a short history of the ratio image and its varying quantifications see D. Michael Risinger, *John Henry Wigmore, Johnny Lynn Old Chief, and “Legitimate Moral Force”*: *Keeping the Courtroom Safe for Heartstrings and Gore*, 49 HASTINGS L. J. 403, 442–443 (1998). For a more extended (and amusing) treatment see Alexander Volokh, *n Guilty Men*, 146 U. PA. L. REV. 173 (1997).

Here are two modern examples of explicit Paleyite justification:

In society, it too often happens that the innocent are wrongfully accused of crime. This is their misfortune, and the Government has no power to relieve them. It is part of the price which each individual may be called upon to pay for the protection which the laws give them. California Senate Committee on the Judiciary, quoted in 1941 Att’y Gen. Ann. Rep. 75

And: “[T]he state risks killing innocent people in all kinds of cases. The extreme case is when soldiers are sent into combat.” John McAdams, discussing the risks of the death penalty, in John McAdams, *It’s Good and We’re Going to Keep It: A Response to Ronald Tabak*, 33 CONN. L. REV. 819, 835 (2001).

³ Two of Romilly’s famous quotations in response to Paley are: “When guilty men escape, the law has merely failed; When an innocent man is condemned, it creates the very evil it was to cure, and destroys the security it was made to preserve,” and “Nothing is more easy than to thus philosophize and to act the patriot for others, and to arm ourselves with topics of consolation, and with reasons for enduring with fortitude the evils to which not ourselves but others are exposed.” Sir Samuel Romilly, *Observations on the Criminal Law as It Relates to Capital Punishments, and on the Mode in Which It Is Administered*, in 1 THE SPEECHES OF SIR SAMUEL ROMILLY IN THE HOUSE OF COMMONS 166 (1820).

hearted troglodytes, indifferent to the plight of the convicted innocent,⁴ with knee jerk opposition to reform.

What neither side has a good handle on, however, is the magnitude of the problem of wrongful conviction and wrongful acquittal. Partly this is due to the inherent difficulty of establishing the ground truth of guilt or innocence better than the trials (or plea bargains) that resulted in acquittals or convictions initially. But, at least in regard to convictions, it is also partly due to the fact that Paleyites by and large control the legal system, and see it as their duty to conceal any wrongful conviction. Of course, they don't exactly see it as concealment. They see it as upholding the integrity and finality of the results of criminal trials.⁵ Nevertheless, both post-conviction legal doctrines and those who administer them, prosecutors and judges alike, resist new evidence of innocence to such a degree that it often passes the bounds of rationality.⁶ And what but the word "concealment," albeit in the name of protecting the public legitimacy of the system, can explain the efforts undertaken to oppose DNA testing in regard to those already executed, where such DNA testing would conclusively establish guilt or innocence in fact.⁷

⁴ By "innocent" I mean actually innocent in fact, perhaps because no crime whatsoever was committed, but most often because the defendant had nothing to do with the crime that was in fact committed. See D. Michael Risinger, *Unsafe Verdicts: The Need for Reformed Standards for the Trial and Review of Factual Innocence Claims*, 41 HOUSTON L. REV. 1281, 1295–1301 (2004). As Daniel Givelber has pointed out, this definition of innocence excludes what might be called wrongful convictions based on jury misjudgments concerning mens rea, or other normatively charged determinations of the appropriate level of responsibility, including many affirmative defenses. Daniel Givelber, *Meaningless Acquittals, Meaningful Convictions: Do We Reliably Acquit the Innocent?* 49 RUTGERS L. REV. 1317, 1327–1328 (1997). I have tried to explain why we are justified in being less concerned (though not unconcerned) about such miscarriages than cases of actual factual innocence in Risinger, *supra*, at 1298–1307.

⁵ See, e.g., Ann-Marie Noyes, Note, *Assessing the Risk of Executing the Innocent: A Case for Allowing Access to Physical Evidence for Posthumous DNA Testing*, 55 VAND. L. REV. 954, 956–57 (2002) (discussing prosecution opposition to post-execution DNA testing). And see generally George C. Thomas III, Gordon G. Young, Keith Sharfman, and Kate B. Briscoe, *Is It Ever Too Late for Innocence? Finality, Efficiency, and Claims of Innocence*, 64 U. PITT. L. REV. 263 (2002). One notable consequence of the concern for finality is the view held by some members of the Supreme Court that the Constitution does not in fact protect an innocent person from conviction or even execution:

[As to the question whether it violates the Constitution] to execute a person who, having been convicted of murder after a full and fair trial, later alleges that newly discovered evidence shows him to be "actually innocent" . . . it is perfectly clear what the answer is: There is no basis in text, tradition, or even in practice (if that were enough) for finding in the Constitution a right to demand judicial consideration of newly discovered evidence of innocence brought forward after conviction.

Herrera v. Collins 506 U.S. 390, 427 (1993) (Scalia, J., concurring, joined by Thomas, J.).

⁶ See Keith A. Findley & Michael S. Scott, *The Multiple Dimensions of Tunnel Vision in Criminal Cases*, 2006 WIS. L. REV. 291, 348–353 (2006). See also Thomas, *supra* note 5, at 277–285.

⁷ The only case in which an executed defendant has been the subject of post-execution DNA testing is that of Roger Coleman, executed in Virginia in 1992, and shown (in the face of what some believed was weak evidence against him) to have been guilty by the DNA results in 2006. See Glenn Frankel, *Burden of Proof*, WASHINGTON POST MAGAZINE, May 4, 2006, at 8. It took years to persuade the State of Virginia to allow the testing to be done. The Coleman tests are to be celebrated, not so much because they established that Coleman was guilty (although the establishment of truth is generally to be celebrated in any context), but because they established a precedent for allowing such post-execution testing.

Traditionally, a certain stripe of Paleyite has also denied that wrongful convictions happen at all, or, that if they happen, they happen so rarely that worrying about them was like worrying about being struck by a meteorite.⁸ The reasons assigned

⁸ I originally attributed this position to “aggressive” Paleyites, but it now seems to me that this position is one commonly taken by both “timid” Paleyites, who need the comfort of this position to salve their consciences for their general support of capital punishment—John Stuart Mill comes to mind—and by “aggressive” Paleyites, who resist calls to reform with whatever argument comes to hand—the contemporary polemicist Joshua Marquis and Justice Scalia are examples. *See infra* note 16. Here are some sample quotations from Paleyites over the years:

“I think that the Complaints of the present Mode of administering the Criminal Law have little Foundation, for the Case in which the Innocent are improperly convicted are extremely rare.” Testimony of Baron Parke before the Select Committee of the House of Lords, considering a bill to authorize appeals in criminal cases, 1848, *quoted in* A.H. MANCHESTER, *SOURCES OF ENGLISH LEGAL HISTORY 1750–1870*, at 179 (1984).

We believe that in our Courts of Justice innocent men never are convicted. If at long intervals some singular exception occurs to this universal rule, it is only an exception, which by its extreme rarity proves the rule. Mr. Denman, in last night’s debate, declared, as a result of many years’ experience as a Sessions’ barrister, that, although he had defended many scores of prisoners, he had never seen one convicted of whose guilt he was not convinced.

Editorial, *TIMES* (London), Feb. 2, 1860 (commenting on yet another attempt to create a court of criminal appeal).

There is one argument against capital punishment, even in extreme cases, which I cannot deny to have weight—on which my hon. Friend justly laid great stress, and which never can be entirely got rid of. It is this—that if by an error of justice an innocent person is put to death, the mistake can never be corrected; all compensation, all reparation for the wrong is impossible. This would be indeed a serious objection if these miserable mistakes—among the most tragical occurrences in the whole round of human affairs—could not be made extremely rare.

The argument is invincible where the mode of criminal procedure is dangerous to the innocent, or where the Courts of Justice are not trusted. And this probably is the reason why the objection to an irreparable punishment began (as I believe it did) earlier, and is more intense and more widely diffused, in some parts of the Continent of Europe than it is here. There are on the Continent great and enlightened countries, in which the criminal procedure is not so favorable to innocence, does not afford the same security against erroneous conviction, as it does among us; countries where the Courts of Justice seem to think they fail in their duty unless they find somebody guilty; and in their really laudable desire to hunt guilt from its hiding places, expose themselves to a serious danger of condemning the innocent.

If our own procedure and Courts of Justice afforded ground for similar apprehension, I should be the first to join in withdrawing the power of inflicting irreparable punishment from such tribunals. But we all know that the defects of our procedure are the very opposite. Our rules of evidence are even too favorable to the prisoner; and juries and Judges carry out the maxim, “It is better that ten guilty should escape than that one innocent person should suffer,” not only to the letter, but beyond the letter. Judges are most anxious to point out, and juries to allow for, the barest possibility of the prisoner’s innocence.

No human judgment is infallible; such sad cases as my hon. Friend cited will sometimes occur; but in so grave a case as that of murder, the accused, in our system, has always the benefit of the merest shadow of a doubt. And this suggests another consideration very germane to the question. The very fact that death punishment is more shocking than any other to the imagination, necessarily renders the Courts of Justice more scrupulous in requiring the fullest evidence of guilt. Even that which is the greatest objection to capital punishment, the impossibility of correcting an error once committed, must make, and does make, juries and Judges more careful in forming their opinion, and more jealous in their scrutiny of the evidence. If the substitution of penal servitude for death in cases of murder should cause any declaration in this conscientious scrupulosity, there would be a great evil to set against the real, but I hope rare, advantage of being able to make reparation to a condemned person who was afterwards discovered to be innocent.

In order that the possibility of correction may be kept open wherever the chance of this

for this assumed near-perfection in regard to false-positive error have generally been the numerous layers of filtration involved in the pre-trial system, and the general fairness of the trial itself, with its formal requirement that the prosecution prove guilt beyond a reasonable doubt.⁹

Such a position is very difficult to take in the era of DNA exonerations. Difficult—but not impossible. Paleyites such as Justice Scalia and Joshua Marquis still speculate about, and embrace, ludicrously low wrongful conviction rates. Such speculation has, however, become both untenable and obsolete, since, as I propose to

sad contingency is more than infinitesimal, it is quite right that the Judge should recommend to the Crown a commutation of the sentence, not solely when the proof of guilt is open to the smallest suspicion, but whenever there remains anything unexplained and mysterious in the case, raising a desire for more light, or making it likely that further information may at some future time be obtained.

John Stuart Mill, Speech in Favor of Capital Punishment Before the House of Commons, April 21, 1868 (opposing the Bill of Mr. Gilpin providing for its abolition).

“Our procedure has always been haunted by the ghost of the innocent man convicted. It is an unreal dream.” *United States v. Garsson*, 291 F. 646 (S.D.N.Y. 1923) (Hand, D.J.).

“Innocent men are never convicted. Don’t worry about it. It never happens in the world. It is a physical impossibility.” Unnamed District Attorney in Worcester County, Massachusetts, *quoted by* Edwin Borchard in the preface to EDWIN M. BORCHARD, *CONVICTING THE INNOCENT: ERRORS OF CRIMINAL JUSTICE* v (1932).

First, no sound reason exists for believing that there is currently an intolerable risk of executing an innocent person. Over the past fifteen years, procedural protections have been adopted to reduce as much as possible the likelihood that error will be committed or, if committed, will go undetected. More to the point, the authors present no credible evidence than any innocent person has been executed during this period; and they do no claim that any individual now awaiting execution is innocent.

Stephen J. Markman & Paul G. Cassell, *Protecting the Innocent: A Response to the Bedau-Radelet Study*, 41 STAN. L. REV. 121, 122 (1988). It should be noted that at the time Markman & Cassell wrote, eleven persons later exonerated by DNA evidence were on death row awaiting execution.

“The Myth of Innocence.” The article title says it all. Joshua Marquis, *The Myth of Innocence*, 95 J. CRIM. L. & CRIMINOLOGY 501 (2005).

“It should be noted at the outset that the dissent does not discuss a single case—not one—in which it is clear that a person was executed for a crime he did not commit. If such an event had occurred in recent years, we would not have to hunt for it; the innocent’s name would be shouted from the rooftops by the abolition lobby. The dissent makes much of the new-found capacity of DNA testing to establish innocence. But in every case of an executed defendant of which I am aware, that technology has *confirmed* guilt.”

Kansas v. Marsh, 126 S. Ct. 2516 (2006) (Scalia, J., concurring). (Note the “every case of which I am aware” language, which is followed by a discussion of the Roger Coleman case, discussed *supra* at note 7. This would seem to imply that there are others. However, there are no other cases of DNA testing on the executed, mainly as the result of prosecution opposition, *see* Noyes, *supra* note 5 at 956–57, a fact that one would think Justice Scalia would know.)

⁹ “Our society has a high degree of confidence in its criminal trials, in no small part because the Constitution offers unparalleled protections against convicting the innocent.” *Herrera v. Collins*, 506 U.S. 390, 420 (1993) (O’Connor, J., concurring). In fairness to Justice O’Connor, it must be said that she invoked the near-perfection theme in order to anticipate a floodgates argument against her plea to keep the door open to actual innocence as a Constitutional ground for relief from a criminal conviction. For an extended analysis of the contours and causes of this overconfidence in the accuracy of the criminal justice system, see Givelber, *supra* note 4, at 1328–1334.

demonstrate, the data and the elementary statistical tools necessary to arrive at a reliable minimum rate of wrongful convictions, at least in a certain significant subset of cases, are actually to hand; from this minimum rate other inferences may defensibly be drawn about the problem of wrongful conviction. Once Paleyites and Romillists are forced to agree on at least a partial description of the problem of wrongful conviction, they can then proceed to develop and set out their normative responses to the empirical reality.

II. An Empirically Justified Factual Innocence Wrongful Conviction Rate: The Case of Capital Rape-Murders in the 1980's

In order to derive a minimum wrongful conviction rate, we must, of course, have a numerator and a denominator. A numerator might be found in the number of exonerations that have taken place over a certain period of time, whether based on DNA evidence or not.¹⁰ I have chosen, however, to include only DNA exonerations as part of a numerator, in order to avoid the epistemic problems that could arise in regard to any rationally debatable exonerations,¹¹ since it is easiest to establish DNA exonerations as being close to bulletproof cases of wrongful conviction.¹²

¹⁰ A comprehensive compilation of cases qualifying as exonerations under the explicit objective criteria set out in the article occurring since 1989 has been done in Samuel R. Gross, Kristin Jacoby, Daniel J. Matheson, Nicholas Montgomery, & Sujata Patil., *Exonerations in the United States 1989 Through 2003*, 95 J. CRIM. L. & CRIMINOLOGY 523 (2005).

¹¹ Some of the most active Romillists compiling lists of the factually innocent have sometimes used criteria that were open to charges of being too soft or overinclusive. See Carol S. Steiker & Jordan M. Steiker, *The Seduction of Innocence: The Attraction and Limitations of the Focus on Innocence in Capital Punishment Law and Advocacy*, 95 J. CRIM L. AND CRIMINOLOGY 587, 597–598 (2005). For instance, it might have been better if some cases in the compilation by Gross et al., *supra* note 10, had been excluded (though to have done so would have compromised the objectivity of the criteria adopted). The case of Jay Smith, recounted by Justice Scalia in his concurrence in *Kansas v. Marsh*, 126 S. Ct. at 2537, 165 L. Ed. at 455, is one such case. So, to a lesser degree perhaps, is the case of Jeremy Sheets, dealt with in the same place. *Id.* By including weak non-DNA cases as cases of exoneration, Romillists may expose their enterprise to the charge of inflating their numerator through mischaracterization. Paleyites, erring in the other direction, have been known to use the rhetorically effective tactic of trashing one or two examples of claimed innocence in a study, implying, as Justice Scalia does, that this is a proper basis to reject any empirical concerns about conviction of the innocent. See *id.* at 1258. As an extreme example of this tactic, see John McAdams, *It's Good and We're Going to Keep It: A Response to Ronald Tabak*, *supra* note 2, at 827–834 (concluding, after criticizing the “exoneree” status of various executed persons claimed to have been innocent, that “that the system works. Not only are we not executing lots of innocent defendants, we are apparently executing none”).

The mischaracterization sometimes indulged in by Paleyites to undermine the true epistemic status of exonerees can be breathtaking. In attacking the case of Delbert Tibbs as one of “exoneration,” Justice Scalia reveals himself to be less than familiar with the actual facts of the case. See *Marsh*, 126 S. Ct. at 2538, 165 L. Ed. at 456. I confess a personal interest in this, since I spent quite a bit of time recounting and analyzing the facts of the Tibbs case in D. Michael Risinger, *supra* note 4, at 1321–1328. I invite all those interested (including Justice Scalia) to read the facts, and then ask themselves if there is much likelihood of Tibbs’s guilt on those facts. Perhaps Tibbs was not affirmatively “exonerated” beyond any doubt in some DNA-like sense, but there is very little reason to believe him guilty. The victim identification so relied upon by Justice Scalia is among the weakest on record, for a variety of reasons discussed in my article, not the least of which is that it was a cross-racial identification based on a three photo *show-up* using only pictures of Tibbs. The verdict against Tibbs was surely one of the unsafest of unsafe verdicts. In addition,

So let us look for our numerator somewhere in the statistical pool provided by the DNA exonerations, and then define the boundaries of the universe of cases they represent, in order to get a denominator and establish a minimum rate of wrongful conviction for that universe of cases. Then we can examine the question of what the DNA cases can tell us in general about rates of wrongful conviction.

To obtain a proper sample of DNA exonerations to work with, one must understand that the cases in which DNA exonerations occur are by definition not a random sample of all cases of criminal conviction. Virtually all such exonerations occur in cases of serious felony, often capital felony, where a trial resulted in a conviction. The DNA exonerations can usefully be divided into four groups: capital cases, non-capital

it should be noted that the quotation from the prosecutor who prosecuted Tibbs to the effect that Tibbs was guilty but lucky is set out in such a way as to make it seem that this opinion was shared by the Florida Commission on Capital Cases to whom the statement was given. *Marsh*, 126 S. Ct. at 2538, 165 L. Ed. at 456. This is untrue. All the quotations come from a section reserved for prosecution comment, and they establish only that the prosecutors involved continue to believe Tibbs guilty in spite of all (an unfortunately common circumstance in exoneration cases.) *See* www.floridacapitalcases.state.fl.us/publications/innocentsproject.pdf, at 136. The Commission itself took no position on the innocence of the twenty-four cases it examined, apparently viewing its role as dominantly informational, although the Commission did appear to accept only the four cases (out of twenty-four) in which the prosecution agreed with innocence as representing some form of exoneration. *Id.* at 5. Incidentally, the Commission Report also reveals that NCIC has no record (as of 2002) of Tibbs ever having been arrested for anything since his release in 1983. *Id.* at 138.

¹² There are still those who take issue with the reliability even of the DNA exoneration cases as cases of established factual innocence. It is often surprising the lengths to which prosecutors will go in exercising creative imagination in attempting to salvage a claim of guilt in the face of overwhelming proof of innocence, including exonerating DNA evidence. One can apparently hypothesize “bad fiction” scenarios in regard to almost any case—usually, I might add, inconsistent with the theory underlying the original conviction. *See, e.g., Hunt v. McDade*, 205 F.3d 1333 (4th Cir. 2000, *cert. denied*, 531 U.S. 945, 121 S. Ct. 344, 148 L. Ed. 2d 276 (2000) (defendant convicted of having raped and murdered the victim held not to have been exonerated by the DNA evidence excluding him as a semen contributor, because he might have been one of multiple assailants who happened not to leave DNA evidence at the scene). Hunt was subsequently exonerated and freed after twenty years of prison, after the perpetrator, having been identified through a cold DNA hit, confessed to being the sole attacker. Phoebe Zerwick, *Hunt Exonerated*, WINSTON SALEM JOURNAL, Feb. 6, 2004 (reproduced at <http://www.truthinjustice.org/hunt-exonerated.htm>). The tenacity with which prosecutors undertake such flights of fancy has been variously noted. “Among some prosecutors, the belief that even discredited convictions must be protected from challenge has forced them to take bizarre positions . . . the foreign semen is explained by . . . new parties to the crime, first mentioned years after the fact: the unindicted co-ejaculator.” BARRY SCHECK, PETER NEUFELD, & JIM DWYER, *ACTUAL INNOCENCE* 248 (2000). *See also* Hillary S. Ritter, *It’s the Prosecution’s Story, But They’re Not Sticking to It: Applying Harmless Error and Judicial Estoppel to Exculpatory Post-Conviction DNA Testing Cases*, 74 *FORDHAM L. REV.* 825, 844 (2005). Such remote possibilities, however, should not lead one to irrationally conclude that *none* of the exonerees are innocent. In fact, if one DNA exoneration in a hundred turned out to be false, that would seem to be a lot based on the kind of tortured alternative scenarios usually generated. The most bulletproof DNA exonerations are those where not only is the previously convicted person exonerated, but also where the true perpetrator is identified using the same DNA. To deal with the problem of residual doubt in other cases, it would be rational to impose some statistical discount on the study to represent residual doubt of innocence, but Paleyites never seem to think of doing this. We will have occasion to return to this point. *See infra* note 21 and accompanying text.

homicide cases, non-capital rape/sexual assault case, and others. The most obvious group to concentrate on in searching for a denominator is the capital cases. This is because there is an externally defined set of capital cases of finite and known number in the United States during the period of time since the reestablishment of the death penalty in 1976 from which such exonerations are drawn, specifically, the capital sentences imposed from the date of the first such conviction that finally culminated in a DNA exoneration, to the date of the latest trial of the case finally culminating in the capital DNA exoneration, roughly 1977 to 1999.¹³ There are 14 capital-case DNA exonerations so far in cases tried from 1977 to 1999. During that same period of time there 5968 capital sentences were imposed.¹⁴ These figures give an absolute minimum factual error rate in capital sentences imposed in that period of .23%.

Whether the imposition of a death sentence on a factually innocent person two or three times out of every thousand impositions of capital punishment is too high a rate is a heavy question. But of course this does not represent the actual rate of wrongful conviction. In fact, it is clear that it is grossly understated, because we are using the wrong denominator.¹⁵ The choice of the right denominator is what makes it empirically defensible to derive a wrongful-conviction rate from the DNA exonerations. We must therefore carefully define the boundaries of the universe of cases represented by the group of DNA exonerations chosen.¹⁶

¹³ The first such trial was that of Dennis Williams in Illinois. See the Innocence Project website, www.innocenceproject.org. He was tried in 1979. The latest such trial so far is that of that of Ryan Matthews in Louisiana. See *id.* for this and all details on the DNA exoneration cases not otherwise more specifically referenced here and throughout the article. Matthews was tried in 1999. The other capitally sentenced DNA exonerees, with the dates of their initial trials, are: Nicholas Yarris, 1982; Charles Irvin Fain, 1983; Earl Washington, 1984; Kirk Bloodsworth, 1985; Rolando Cruz, 1985; Alejandro Hernandez, 1985; Verneal Jimerson, 1985; Frankie Lee Smith, 1986; Ron Williamson, 1988; Robert Miller, 1988; Ronald Jones, 1989 and Ray Krone, 1992. Rolando Cruz, Alejandro Hernandez, Kirk Bloodsworth and Ray Krone also had reversals and new trials before the exonerating evidence (including, inter alia, DNA) was finally produced, but they were re-convicted and resented, Cruz and Hernandez to death, Bloodsworth and Krone to life. Likewise, Charles Fain had his death sentence vacated and remanded for re-sentencing, but again received a sentence of death, which was affirmed.

¹⁴ Bureau of Justice Statistics Bulletin, Capital Punishment 2000, app. tbl. 1.

¹⁵ It is, however, already nearly ten times the Marquis op-ed rate accepted by Justice Scalia. See *supra* note 1.

¹⁶ Partisans are sometimes less than careful about their choice of denominator, a phenomenon that is well illustrated by the method used by Joshua Marquis to derive the Marquis op-ed rate given in the NEW YORK TIMES article cited by Justice Scalia in *Kansas v. Marsh*. See Marquis, *supra* note 1. In that article Marquis took the position that the proper denominator for an asserted number of cases of factual innocence is the number of felony convictions in the time period represented by the alleged cases of innocence. Using this approach, Marquis asserts that, though he disputes the innocence of some of them, he can concede the number of cases of actual innocence listed in Gross et al., *supra* note 10, round them up to the nearest hundred, multiply them by 10, and still get a wrongful conviction rate of the factually innocent of only “.027 percent,” that is, 2.7 per ten thousand, or 27 per hundred thousand. Marquis, *supra* note 1. This is polemically effective, since it gives the appearance of generosity. But the appearance is false. As an approach to a meaningful wrongful conviction rate, it is ludicrous (although of course it does in a sense establish a kind of minimum number of little meaning). Most felony convictions result in dispositions of insufficient gravity to precipitate the kind of post-conviction investigation necessary to have any chance of

The DNA exonerations can only occur in the subset of capital convictions representing cases in which it is reasonable to believe that bodily sources of DNA might have been left in such a way as to provide the basis for including or excluding a defendant as the possible perpetrator. Generally, in the capital case exonerations, this has meant what can be called “rape-murders,” homicides where the victim is raped, then killed. In fact, thirteen of the fourteen DNA exonerations in capital cases involve rape-murders.¹⁷

Looking at these thirteen cases, two important points emerge about the window that the DNA exonerations opens on the problem of wrongful conviction rates in general. That window is closing. As DNA technology has become more sensitive, more accurate and more generally available and understood, the number of cases in which such testing is not done for the original trial shrinks. This is, of course, a great net benefit for the criminal justice system. Those who are guilty in the relatively small percentage of cases where DNA evidence is available will be convicted with much more confidence, and those who can be exonerated by DNA will be exonerated before or at trial. But it is extremely important to remember that the conditions that cause wrongful conviction in non-DNA cases—the vast majority of cases—remain unaffected by this development.¹⁸

establishing actual innocence. Most of the Gross examples were serious felonies, mainly murder and rape. Gross et al., *supra* note 10, at 551. Thus, using the full set of felony convictions as the reference denominator vastly understates the rate. This fairly obvious weakness did not apparently stop the Marquis piece from being rhetorically persuasive to some, and from convincing Justice Scalia, who, as already noted, cited it with approval in his concurrence in *Marsh*, 126 S. Ct. at 2538, 165 L. Ed. at 456–57. Incidentally, Marquis should have known the fallacy of this approach, since an earlier foray of his into potential numerators and denominators (*see* Joshua Marquis, *The Myth of Innocence*, 95 J. CRIM. L. & CRIMINOLOGY 501, 518 & 520 (2005)) was criticized on these specific grounds in Steiker & Steiker, *supra* note 11, at 588–589, an article in the same journal issue as Marquis’. (It is interesting to note that the factual wrongful conviction rate for capital cases yielded by the numbers adopted by Marquis in *The Myth of Innocence* is .35%, almost eight times higher than the Marquis op-ed rate cited by Justice Scalia.)

Some Romillists, on the other hand, have on occasion been perhaps too willing to embrace high numbers representing rates of factual wrongful conviction without decent empirical backing. The actual numbers put forth for wrongful conviction rates in the academic literature, however, tend to be in fact fairly conservative. Various such studies are collected and analyzed in Givelber, *supra* note 4, at 1336–1346. While none until the present study was backed up by really solid empirical justification (they all generated aggregate rates, and they all used various proxy measures like judge-jury agreement), all fall into a fairly narrow range (.8%–8%) not terribly inconsistent with the findings of the present study.

¹⁷ The one exception involved DNA obtained from saliva and hair left on a ski mask. This was the case tried in 1999 (Ryan Matthews) referred to in note 13 *supra*. It is truly an outlier in three regards: First, as stated, it did not involve rape-murder. Second, it was tried (at least) three years after the next most recent trial and capital sentence resulting in a DNA exoneration to date (that was the case of Ray Krone in Arizona, which was tried first in 1992 and retried in 1996). And third (probably accounting for the time factor), it was tried at a time when DNA testing was becoming commonly enough available for one to expect it to be done pre-trial, not post-trial, at least in a capital case.

¹⁸ An analysis of sixty-two DNA exonerations as of 2000 suggests that the main factors are (in order of their commonness) mistaken eyewitness identification, misleading pre-DNA serology, police misconduct, prosecutorial misconduct, defective or fraudulent science, visual hair comparison, bad lawyering, perjury by jailhouse snitches and others, false confessions, and other erroneous forensic inclusions. *See* SCHECK ET AL., *supra* note 12, at app. 1, tbl. 2 (factors leading to wrongful convictions in sixty-two U.S. cases).

We must use the post-conviction DNA exonerations wisely to throw light on the more general problem. Furthermore, the closing window has statistical implications for our study. Our choice of denominator must be chosen with care both with respect to the kind of defendants we are looking at and with respect to the time period chosen for examination.

The twelve trials of the thirteen capital rape-murder defendants that resulted in their factually wrongful convictions took place between 1979 and 1996.¹⁹ Two of the twelve trials are clearly outliers—the 1979 trial of Dennis Williams was three years before the next trial, and the first (1992) trial of Ray Krone was three years after the next earlier trial. The Williams case was unusually early for usable DNA evidence to have been preserved and discovered, but this is perhaps accounted for by the fact that the state in that case was still looking to prosecute a co-defendant, which they did not manage to do until 1985 (Verneal Jimerson, also later exonerated by DNA). The Ray Krone case in 1992/1996 is pretty late in the game for DNA not to have been utilized originally. At any rate, it seems clear that it is not either required or justified statistically to retain those two outlier examples.²⁰ So for purposes of looking at the wrongful conviction rate, we will limit ourselves to the eleven cases that were tried from 1982 to 1989 inclusive. In addition, we will reduce the number by half an exoneration, in order to give some cushion against the criticism that it is not beyond every doubt that every person exonerated by DNA was factually innocent. As noted earlier, there are the Paleyites of the world, such as Joshua Marquis, who will claim that these exonerations are not sufficiently absolute because it is possible to imagine (usually exceedingly unlikely) scenarios in which this or that exoneree might still be guilty. Nevertheless, even the most aggressive of these Paleyites would probably not argue that such exercises in creative imagination mean that *none* of the DNA exonerees is factually innocent.²¹ If we give an exceedingly generous probability of one in twenty to the factual guilt of an apparently exonerated defendant, then a statistical exclusion of one-half an exoneration covers it.²²

Absent from the list, but in my opinion at least as important, are the absence of effective discovery in many jurisdictions, and the tunnel vision of police and prosecutors that does not amount to official misconduct, but to what is looked upon merely as zeal. *See generally* Findley & Scott, *supra* note 6, and Daniel S. Medwed, *The Zeal Deal: Prosecutorial Resistance to Post-Conviction Claims of Innocence*, 84 B.U. L. REV. 125, 148–49 (2004).

¹⁹ Ray Krone was tried twice, once in 1992 and once in 1996 after an appellate reversal.

²⁰ The inclusion of the earliest case would drag with it three years' worth of denominator cases, clearly a statistically unwarranted result.

²¹ As noted *supra* note 12, the most bulletproof DNA exonerations are those where not only is the previously convicted person exonerated, but also where the true perpetrator is identified using the same DNA. This turns out to have been the case in seven of the eleven cases in the numerator set used in this study. As to the other four, in at least three of them the evidence seems to have been very weak to begin with.

²² Two exonerees (Ronaldo Cruz and Alejandro Hernandez) were co-defendants in a single prosecution. Here, the critics might claim that the right way to approach such cases is to look at the rate of miscarriage per prosecution, not at individual defendants. I am sure Cruz and Hernandez would disagree, and so do I. Each defendant should be treated as an individual instance in determining the accuracy of convictions. All

So we start with a numerator of 10.5. What, then, is the denominator? If we choose all death penalties imposed from 1982 to 1989 inclusive, we get a denominator of 2235.²³ That would yield a minimum wrongful conviction rate of .47%, or nearly five in a thousand (and more than double the figure arrived at when we used all capital DNA exonerations and all death sentences²⁴).

But that is still understating the wrongful conviction rate, because the denominator is still not right. The number of all death penalties imposed from 1982 to 1989 inclusive includes all sorts of capital cases that were not rape-murders.²⁵ A more proper denominator would be the number of capital rape-murder cases. An analysis of a sample of 406 capital convictions imposed in the period 1982–1989 inclusive²⁶ indicates

co-defendant rape-murder convictions in the sample have been included as separate capital sentences in the denominator figures. On the other hand, I have not counted second impositions of the death penalty after retrial as two erroneous capital rape convictions.

²³ Bureau of Justice Statistics table, *supra* note 14.

²⁴ But not that much higher than the rate derived from Joshua Marquis' numbers when writing in an academic context (.35%), as opposed to the more polemical Marquis op-ed rate of .027%. *See supra* note 16.

²⁵ A side effect of my reading the facts of the 406 cases examined in this study was the discovery (new to me at any rate) that at least in the 1980's, by far the most common way to get a death sentence was to invade the space of a stranger or strangers while they were minding their own business, in order to obtain money or property (home invasions, taxi robberies, armed robberies of retail stores such as convenience stores, gas stations, etc.), and then to kill those strangers in cold blood to eliminate witnesses. Nearly half the cases fit this general pattern.

²⁶ Here is how this sample was derived. There is no single official data base listing the names of all persons who have had death sentences imposed upon them since the reinstatement of the death penalty. The Bureau of Justice Statistics receives statistical reports from the states and makes those results available, which is how we know the number of capital sentences imposed in a given period of time (within the limits of accuracy of bureaucratic reporting), but not the individual names. *See supra* note 13. Various sources of information are available in regard to individual cases, including legal case reports, lists of death row inmates maintained by the NAACP Legal Defense Fund, and others, but until fairly recently there was no attempt to combine these into a single comprehensive list. This James Liebman and his colleagues at Columbia Law School undertook to do for the period 1973–1995, completing the project in 2000. *See* James Liebman, Jeffrey Fagan, & Valerie West, *A Broken System: Error Rates in Capital Cases, 1973–1995*, <http://www.thejusticeproject.org>. The result was a number of data bases which Professor Liebman made publicly available on the International Consortium for Political and Social Research, a University of Michigan Database archive, <http://www.icpsr.umich.edu>.

My original intention was to derive a 10% random sample of the cases tried between from 1982 to 1985 inclusive (date restriction parameters were available on the software for addressing the data base) from the most comprehensive of the data bases, and then personally examine the facts of each case to classify it as “rape-murder” or not. However, due to a misunderstanding, the first set of cases I obtained was from a smaller data base restricted to habeas corpus cases only. I did not know this at the time, and proceeded to examine the facts of those cases. There were some technical problems, since the cases were not listed by name but by ID number. The data, however, included references to reporter citations for almost every case (three cases of the original 208 did not have usable citations, and two were reported twice under different reference numbers, leaving a set of 203 cases).

that only 21.45% of capital sentences involve a rape-murder. Thus, the proper denominator is 479,²⁷ and thus the wrongful conviction rate for capital rape-murders in the period 1982–1989 inclusive is *at least* 2.2%.

Under these conditions, deriving the names and the facts was tedious but not difficult. My stepdaughter, Anna Esteveao, cut and pasted the facts of each case into a single document and I read them, returning to the reports when any clarification was needed. I used a very generous definition of rape-murder, including cases, for instance, where a couple was attacked, the male was murdered and the female was raped but survived. (I did not include cases where there might possibly have been a rape, but no specific evidence of it existed, either because of decomposition or otherwise, and rape was not charged). That analysis revealed 47 rape-murders in 203 cases, or 23.15%. *See* Appendix 1. Then I discovered the limitations of the habeas corpus data base from which the sample was taken. While there was really no reason to suspect the sample was not random in regard to the variable examined (rape-murder *vel non*), I could not say affirmatively that it was, so I obtained another sample from the comprehensive data base. This data base listed 2221 entries within the time parameters, so that it was very close to the 2235 figure give by the Bureau of Justice Statistics. (Also, some of the entries were consolidated appeals involving two death sentences.) At any rate, the 10% sample spat out by the random number generator ended up reflecting 218 death sentences (some entries involved two people with death sentences, and a few entries had to be thrown out because the citations had been mistyped and could not be guessed). Analysis revealed that there were 44 rape-murders in that 218 case sample, or 20.44%. *See* Appendix 2. At this point the values of the two samples seemed sufficiently close to assume randomness for the first sample. In addition, it seemed that combining the two samples could hardly inspire criticism from Paleyites, since the first sample had a higher rate of rape-murders. So I combined the samples (excluding, of course, common members of the two sets). Here a slightly unexpected condition surfaced. One would expect the most likely overlap of the two sets to be 20 members (10% of the smaller set), including 4–5 rape-murders (21–23% of 20 common members). This would yield an expected value (assuming 5 common rape-murders) of 21.45%. In fact there were only 15 common members of the two sets, and 8 of the 15 were rape-murders. Excluding those yielded a combined set of 406, with 83 rape-murders, for a total percentage of 20.69 % (almost the same percentage reflected in the affirmatively randomized sample). So what number should be used? The least likely candidate is the 23.15% from the single, smaller, not formally randomized set. The other two real numbers (the 218-member random set and the combined set) were almost exactly the same (20.44% and 20.69% respectively). Still, in keeping with the policy of this article to err on the side of caution, I have used the expected combined value of the two sets (21.45%) instead of the real combined value.

²⁷ That is, 2235 capital sentences times .2145 equals 479.41. Here we must discuss confidence intervals. The numbers given in the text are always the most likely true values. However, any number derived by sampling carries with it the risk that the sample, though random and fairly large, was atypical. In order to deal with this, statistical tests have been developed that will tell you, for any given universe size and sample size, floor and ceiling numbers that define the range wherein the true value would lie *x* percent of the time, where *x* is a selected percentage level (such as 90, 95, or 99). Note once again that this does not mean that the true value is as likely to be one of the numbers at the margins as the number in the middle. The statistical distribution is a standard distribution, with the central number most probable and numbers at the margins least probable. The confidence interval for a 21.45% observed incidence in a sample of 406 out of a universe of 2235 at the 99% confidence level is plus or minus 5.25%, or 16.20% to 26.70%. While 95% is more conventionally selected, I have used 99% in order to guard against the criticism that the 30% rate of non-usable DNA derived from the Innocence Project data has an unknown confidence interval because it is impossible to determine the relationship between the number of cases in which requests were made and the size of the appropriate reference universe of cases, since they were not all capital cases. Applying the 99% confidence interval, then, the maximum expected number of rape-murder cases out of 2235 capital cases is 597 and the minimum number is 362. The raw wrongful conviction rate would be between 1.8% and 2.9% In that sense, 1.8% is the “minimum minimum” wrongful conviction rate for all capital rape-murders in the reference universe, but the figures in the text represent the most likely true wrongful conviction rate.

We have not finished yet with our denominator, however. It is still overstated. DNA exonerations can only occur in those rape-murder cases where usable DNA connected to the perpetrator is found to be available when requested for testing. The universe represented by the DNA exonerations, therefore, is defined by that condition. In what percentage of cases involving trials in the reference period is that condition present?²⁸

So far as I know, there is only one organization in the country, governmental or non-governmental, with records of sufficient experience to give a defensible answer to this question: the Innocence Project at Cardozo Law School. Established by Barry Scheck and Peter Neufeld in 1992, the Innocence Project has concentrated from the beginning on the exoneration of the convicted innocent through DNA. It has records of more requests for DNA evidence in more cases than any other entity. So in the summer of 2006 I contacted the Innocence Project and asked them to look at their records and determine in what percentage of cases tried in the reference time period for which requests for the discovery of DNA evidence had been made in which it was subsequently established that, either because it was never collected, because it was discarded or destroyed, or because it was degraded, no usable DNA survived. The Innocence Project itself has dealt with a limited number of capital cases, since those cases usually have other sources of post-conviction representation. However, the Innocence Project has dealt with many non-capital rape-murders, and even more non-murder rapes, and there seems no reason to believe that the percentage of “no surviving usable DNA evidence” for either of those categories would be significantly different than in capital rape-murders.

By a lucky coincidence, the Innocence Project had just begun a comprehensive file review in order to collect various data across its cases, and isolating the data on “no usable DNA” for its cases in the reference period was not too burdensome. They graciously agreed to do it. The results were that 77 of the 212 cases tried during the reference time period for which the Innocence Project made requests for DNA testing did not yield usable DNA, a rate of 36.3%. In that set of 212, there were 15 rape-murders, of which 5 (33.3%) yielded no useable DNA. Although the rape-murder set is smaller, I have elected to use the 33.3% rate in an abundance of caution, since it is lower than the rate associated with total number of cases for which requests were made²⁹

²⁸ As Charles Sullivan pointed out to me, if cases had been tested at random, the best indicator of the wrongful conviction rate would be the number of exonerations over the number of cases tested. However, clearly cases have not been tested at random. The number of tests requested has almost certainly not been random, but skewed toward the convictions most likely to be inaccurate. So even if we knew the number of cases tested, this (quite proper) cherry picking would undermine the suggested approach. However, since most testing in capital cases is done at the behest of private attorneys or other sources, and there is no available record of when such testing is done, this approach could not be undertaken practically at any rate, because the denominator is unknown.

²⁹ Figures derived from data spreadsheet supplied by Huy Dao of the Innocence Project, September 15, 2006, in author’s possession.

The denominator of 479 for rape-murder figure previously arrived at must, therefore, be reduced by 33.3% to account for the cases with no usable DNA available for testing, yielding a denominator of 319. Using 10.5 as the numerator as previously explained and 319 as the denominator yields a true minimum error rate for rape-murder from 1982–1989 inclusive of (*pace* Joshua Marquis and Justice Scalia) 3.3%.³⁰

So there we have it. A conservative minimum wrongful conviction rate for cases of actual, factual innocence, derived from a real, not insignificant, set of serious crimes, and capital crimes to boot. The question immediately comes to mind: What can this tell us about wrongful conviction rates in general?

Before addressing this important question, however, we must examine one more issue in regard to our initial reference set—capital rape-murders in the 1980's. We have derived a minimum wrongful conviction rate. What, if anything, can be said about the *maximum* wrongful conviction rate? We have a floor. What can we say about a ceiling?

As it turns out, I think we can say some pretty defensible things. We start off being reasonably sure that there are around 319 capital rape-murder cases (more or less) with potentially usable DNA evidence during that period. We also know both that a lot of them have had the DNA requested and analyzed. We don't know how many exactly, because there is no central data base of such information,³¹ but capital cases generally attract post-conviction aid from anti-death penalty advocates. Now in those 319 cases, to be sure, there are a few that are so clear on factual guilt that DNA analysis might not be requested. For instance, take the case of Charles McDowell. He broke into a house in his own neighborhood and attacked the maid, who was alone in the house at the time. As a result of the screams of the victim, he was confronted, as he was leaving the premises covered in blood, by a neighbor who knew him. He stabbed the neighbor, but police were called by other neighbors. The police followed the blood trail and found him hiding in some bushes at the other end of the blood trail within a short period of time. There was semen on the victim's panties, but DNA wasn't likely to help the defense.³²

³⁰ Applying the 33.3% exclusion to the confidence interval given, *supra* note 27, we get a “minimum minimum” rate of 2.7% and a “maximum minimum” of 4.2%. Given the conservative nature of the methodology adopted in this article, both numbers are almost certainly low.

³¹ A fortiori, some DNA testing actually undertaken confirms the guilt of the defendant, as happened in the post-execution case of Roger Coleman. *See supra* note 7. These confirmations are not advertised, perhaps partly because defense attorneys to whom the information comes may regard them as covered by attorney-client privilege, and partly because prosecutors have no interest in seeming to announce that the underlying conviction needed any confirmation, or in helping to institutionalize post-conviction DNA testing by seeming to rely on it.

³² *People v. McDowell*, 763 P. 2d 1269 (1988). Caution should be exercised, however, in determining which cases are so overwhelming that they definitively establish true factual guilt. The evidence against the four defendants in the murder of Lori Roscetti in Chicago (including a confession by one and his testimony against the others) seemed to be overwhelming, but DNA revealed it to be fraudulent (and resulted in the identification of the true perpetrator). *See* Maurice Possley and Steve Mills, *DNA Test Rules Out 4 Inmates*, CHICAGO TRIBUNE, Nov. 14, 2001, available at <http://www.truthinjustice.org/chicago-dna.htm>. This case was also covered by National Public Radio's THIS AMERICAN LIFE program in *Perfect*

But in most cases, which are not so clear as the McDowell case, DNA exclusion would help, and it would be worth requesting. It would be quite surprising if DNA capital post-conviction counsel had failed to request DNA testing in anything close to half the 319 cases. In addition, even in these cases, it is likely that the requests, if not universal, would be skewed toward being made in the otherwise more factually questionable cases. So I believe we can conclude without much doubt that the ceiling is not double the floor (which would give a maximum ceiling figure for actual innocence of 6.4%), but is in fact substantially less than this. I believe it is fair to put a reasonable maximum under these circumstances at 5%.

So we have an empirical minimum of 3.3% and a fairly generous likely maximum of 5%, for factually wrongful convictions in capital rape-murders in the 1980's.

III. Implications of a 3–5% Wrongful Conviction Rate for Both Paleyites and Romillists.

These figures are guaranteed not to make many people happy. Whatever the depth (or shallowness) of one's emotional or moral response to a 3–5% factual innocence error rate in a significant set of real-world capital cases, it is hard to characterize it as de minimis, or to fairly say that it represents a “remote” possibility of conviction of the innocent. Paleyites depend on the tenability of such assertions either to make themselves feel better, or to convince the general mass of people that there is no systemic problem of wrongful conviction to be considered, or both. When real data carefully considered destroy the tenability of such claims, one can depend on the Joshua Marquis and the Justice Scalias not to be happy with that result.

In addition, Paleyites will find little to comfort them in regard to claims that such exonerations are demonstrations of “the system working,” or that reversals through the ordinary appellate process take care of the problem of wrongful conviction.³³ In general, over two-thirds of all capital convictions are reversed, and more than half of defendants who initially receive capital sentences end up being taken off of death row (although less

Evidence: Hawks and Rabbits (National Public Radio broadcast, Apr. 19, 2002), available at <http://www.thislife.org/>. Apropos of that, I still do not understand how the actions of the police, the prosecutor, and the serological expert witness in that case were not criminal, but in the event no one was ever charged.

³³ See, e.g., Justice Scalia's view of how the system carefully winnows out the innocent:

[The dissent] speaks as though exoneration came about through the operation of some outside force to correct the mistakes of our legal system, rather than *as a consequence of the functioning of our legal system*. Reversal of an erroneous conviction on appeal or on habeas, or the pardoning of an innocent condemnee through executive clemency, demonstrates not the failure of the system but its success. Those devices are part and parcel of the multiple assurances that are applied before a death sentence is carried out.

Marsh, 126 S. Ct. at 2535–2536, 165 L. Ed. 2d at 455 (emphasis in the original).

than four in a thousand are acquitted on re-trial.)³⁴ However, of the eleven rape-murder exonerations in our numerator set, while five were the subject of reversals prior to the DNA evidence being developed, only one (or perhaps two, depending on how you count Verneal Jimerson) got off death row as a result.³⁵ Kirk Bloodsworth (who even Joshua Marquis concedes was factually innocent³⁶) was retried and again convicted, but sentenced “only” to life without possibility of parole. Verneal Jimerson was awaiting retrial when the DNA results came in. The other nine would all been executed if DNA evidence had not been invented. Thus, the results of procedural reversals do not appear to track actual innocence very well.³⁷

On the other hand, Romillists may also find themselves unhappy. We can usefully divide modern Romillists between anti-death penalty advocates and Innocence Network activists³⁸ (I count myself at least an honorary member of the latter³⁹). The anti-

³⁴ Liebman et al., *supra* note 26, at 3–6.

³⁵ Rolando Cruz and Alejandro Hernandez were given new trials, re-convicted, and again sentenced to death. Charles Fain was given a new sentencing hearing and again sentenced to death. *See supra* note 13.

³⁶ Marquis, *supra* note 8, at 517.

³⁷ “Indeed, sometimes the guilty are acquitted because of rules which work overwhelmingly to the advantage of those who have committed the crimes. Perversely, the fact that the guilty are regularly acquitted obscures the difficulties that the adjudicatory system poses for the innocent.” Givelber, *supra* note 4, at 1321.

Here, I must make a comment on the important work of Prof. Liebman and his colleagues on “Error Rates in Capital Cases.” If it were not for Professor Liebman’s work we wouldn’t have the data base that made this article possible. That said, I have some reservations about his and his co-authors’ decision to use reversible legal error as the measure of what is announced as “error rates in capital cases” in the title of their original publication (though of course, in one sense, the rate of legal error is an “error rate,” and an important thing to know), *see* Liebman et al., *supra* note 26. Nor is the rate of legal error a measure connected to “actual factual” innocence very directly or very strongly (never explicitly said in “Broken Systems,” but to my mind, implied in a number of places, *see, e.g.*, the sentence on the first page of the executive summary, which says that “...American capital sentences are... persistently and systematically fraught with error that seriously undermines their reliability”). Predictably, opponents have turned this around, pointing to the same data as evidence of extra care by appellate courts, care that reduces the risk of factually wrongful execution to a minimum. However, as the text points out, there is reason to believe both positions are wrong, as findings of legal error don’t appear to track actual innocence very well.

³⁸ The Innocence Network is the umbrella organization for various organizations devoted to freeing the convicted innocent around the country. Of course many individuals involved in such work may also be morally opposed to the death penalty on a personal level, but many are not.

³⁹ I am not morally opposed to the death penalty. In fact, after reading the details of the underlying episode in 406 capital cases in a fairly short period, I am even less opposed to it on moral grounds than I was before. On the other hand, I do favor the abolition of capital punishment on a number of grounds: first, because I do not think a 3–5% error rate is an acceptable price to pay, nor do I think we are ever likely to undertake the reforms to reduce that error rate significantly; second, because I do not believe that the death sentence can ever be evenhandedly administered given the current nature of sentencing hearings, third, because the existence of capital charges distorts the incentives in plea bargaining in such a way as to raise the number of factually wrongful convictions by guilty plea; and last, because the existence of capital punishment draws all attention to the death penalty and away from the systemic problems and injustices of wrongful conviction in the non-capital parts of the system.

death penalty people whose opposition is based upon a general pro-life moral position (“the state should not meet one murder with another,” etc.) are often only indirectly or supplementarily concerned with innocence. Some believe that emphasis on execution of the innocent may get in the way of global abolition of the death penalty for the case of the obviously (factually) guilty.⁴⁰ Many, however, will use innocence data as a tool, and to that end, they would like it to be as high as possible, high enough perhaps for a 10% error rate to be a credible claim (thus apparently meeting the Blackstone ratio threshold, a rhetorically attractive point to reach for purposes of persuasion).⁴¹ Real data that move that claim from more tenable to less tenable are unlikely to be welcomed.

On the other hand, Innocence Network people (those whose main horror is the conviction of the factually innocent in any context) are likely to be more conflicted. Some may regard the wrongful conviction figure as about what they suspected. Some may view empirical indications that the system works more accurately than their worst fears as good news, though they may have a queasy feeling that a 3–5% rate of conviction of the innocent is not high enough or dramatic enough to engage the conscience of the average citizen, or of the average politician. I will try to address these concerns later. But for now, I can only say to all sides, the facts seem to be the facts.

IV. The Factual Error Rate for Capital Rape-Murders in the 1980’s: Generalizing to Other Crimes and Other Times

I have just said that the facts seem to be the facts. Certainly for the actual reference set, that is, capital rape-murder in the 1980’s, the minimum figure has a strong claim to fact status, and the reasons for the upper limit seem pretty persuasive also. But can we generalize this rate to other sets of criminal convictions?

This question, of course, is a variation on the question raised earlier in the text, and deferred: What can this rate tell us about wrongful conviction rates in general? But one should not confuse the question of “wrongful conviction rates in general” with the question of a “general wrongful conviction rate.” The vastly understated Scalia/Marquis rate was a claimed “general wrongful conviction rate,” that is, an average wrongful conviction rate for all felonies.⁴²

⁴⁰ See, e.g., Steiker & Steiker, *supra* note 11, at 607–09 (discussing the notion that concern with innocence may overshadow other worries about the death penalty).

⁴¹ See, e.g., Thomas et al., *supra* note 5, at 271–72 (characterizing an 8% factual innocence rate in capital cases as unrealistically low).

⁴² Marquis might have gone further and included misdemeanors in his denominator, and then claimed to have a wrongful conviction rate for all criminal convictions; he could even have used the population of the United States and established a wrongful conviction rate for Americans, but pushing the argument that far might have made its methodological weakness obvious even to Justice Scalia (or his law clerk).

It is quite common for people who begin pondering the question of wrongful conviction to ask themselves questions like, “What do you suppose the number of wrongful convictions per thousand convictions is generally?” or similar questions. There are two reasons why we should resist the temptation to expend much effort in pondering such a general average wrongful conviction rate: first, we are unlikely to ever be able to derive it very specifically, and, second, it wouldn’t tell us anything very important if we knew it. Both facts are largely the product of a common reality, which is also intimately involved in the issue of what the capital rape-murder data from the 1980’s can tell us about other crimes and other times: The universe of criminal convictions is almost certainly heavily substructured in regard to wrongful conviction rates.

In order to make clear what substructuring⁴³ means and why it is important, we must spend a little time going back to basics. Human knowledge is easiest to gain in regard to universes of objects that are all the same relative to the inquiry of interest. When one deals with such fungible entities and conditions, then what is known locally will also be true globally, and what is true globally will also be true locally. This eliminates the hard issues of sampling bias, of statistical inference, of “external validity” (reasoning from data about parts of a universe to conclusions about other parts of the universe or the universe as a whole), and of deduction (reasoning from general data or propositions about the universe to conclusions about subsets or individuals within the universe). These conditions are most closely approached in classical physics and chemistry. They are clearly not commonly applicable to most biological or social phenomena, like the distribution of eye color, or, almost certainly, the distribution of wrongful conviction rates among different types of criminal convictions.

Let us stay with the case of the distribution of eye color in humans. If you knew that brown was the most common eye color in humans, and you were dropped from Mars into a randomly selected place on the planet and asked to guess the eye color of the first human you would meet, you would rationally guess brown. However, if you happened to

⁴³ The term “substructuring” comes from population genetics, and has gained its foothold in the legal arena as a result of its discussion in regard to the proper generation of random-match probabilities for DNA markers. An early example:

While it is of some concern that neither Dr. Kidd nor Dr. Budowle cite to any published studies to support these conclusions, the court finds their testimony credible and convincing. Moreover, the study largely relied on by Dr. Lewontin to show significant substructuring of Rh-blood typing genes was discredited by Dr. Conneally, a human population geneticist, who testified that the study is unreliable because it was undertaken in 1947 when the blood typing methods applied there were inaccurate. The court finds that to the extent that substructure may exist, it is very unlikely to be substantial for VNTRs. Consequently, at least with regard to the FBI methods, the existence of some substructure does not significantly affect the accuracy of VNTR frequencies. In other words, the court concludes that it is highly unlikely that the FBI’s frequency estimate of a specific genotype across four or five loci would be lower (prejudicial to the defendant) than the actual frequency of that genotype if in fact substructure existed and a less conservative fixed bin system was employed.

United States v. Jakobetz, 747 F. Supp. 256, 261 (D. Vt. 1990) (Billings, C.J.).

be dropped in Copenhagen, brown would perhaps not be the best statistical bet, (if you only knew). In your position, however, you have neither more particularized or localized information, nor any affirmative reason to believe the general statistic does not hold true everywhere. But let us assume that before being dropped onto Earth, you are told that the distribution of eye color is not even, but, for want of a better term, “lumpy,” that is, that there are a significant number of subsets of places where the distribution is substantially higher or substantially lower than the distribution for the Earth’s population as a whole. In making your bet, you would still bet “brown,” but you would now have affirmative reason to wish you had more particularized information about the structure of the subset distribution (the “substructuring” of the general universe). In fact, unless there is good reason to rule out substructuring, more particularized information is always preferable to more general information, even if both reflect the same probability number.⁴⁴

Now suppose before you are dropped, you are told that there is not only significant substructuring in the distribution of eye color, but that it is so distributed that few if any of the subsets have distributions near the average for the whole universe. Now when you bet, you may still bet “brown” as the best bet on what is known, but you will pretty well know that the average figure (which is the only one you know) is unlikely to represent what is in some sense your “real” chance of being right. This situation seems very likely to be the case in regard to rates of wrongful conviction for various kinds of crimes in various contexts. So just as one cannot jump from a 3–5% wrongful conviction rate in capital rape-murders in the 1980’s to a general wrongful conviction rate for crimes (the average figure may be more or less, and getting data to derive such an average figure reliably would be daunting), it is also true that one could not reliably reason from a known low average rate (if one were available) to the conclusion that the rate was similarly low for every kind of case. There still might be, and probably would be, contexts and kinds of crime where the rate of wrongful conviction was higher, perhaps shockingly so, and it would seem incumbent upon us is to develop more particularized information to discover those islands of trouble, not to salve our consciences with the average number, even if we had one.

So we will eschew speaking in terms of any global rate of wrongful conviction. But that does not prevent us from making some reasonably powerful claims in regard to generalizing the capital rape-murder rate established above to other crimes and other times.⁴⁵

⁴⁴ This insight may help explain our suspicions of so-called “naked statistical proof,” though humans seem to go overboard the other way and irrationally overvalue the illusory particularization of things like eyewitness identification.

⁴⁵ In regard to time effects, obviously the wrongful conviction rate for capital rape-murders is lower today than in the 1980’s, as a result of the availability of DNA evidence at trial in most cases. However, the general conditions that led to that rate of wrongful conviction are still present in cases not involving available and relevant DNA evidence. The only arguable time effect applicable generally might be that DNA exonerations may have given rise to more skepticism and care on the part of juries. Suffice it to say that there is as yet no good evidence of this.

First, in regard to other capital homicide prosecutions, there seems to be no strong reason to believe that the rate was (or is) significantly lower. Most if not all of the same forces would seem to be at work (death-qualified juries, horrendous facts, differences in resources between prosecution and defense). Richard A. Rosen has recently written that DNA exonerations should be viewed as providing “a random audit” of convictions because they vary from other convictions only by the fortuitous circumstance of the presence of testable DNA.⁴⁶ While this argument becomes weaker as the conviction sets become more different, it is fairly robust in regard to capital convictions generally, or at least those where perpetrator identity is the main contestable issue.

Second, in regard to non-capital, pre-DNA, rape cases (at least the stranger-on-stranger cases that are most troubling in regard to wrongful identification analogous to rape-murder cases),⁴⁷ it is true that in such cases there is often victim testimony of identification, but, given the vagaries of eyewitness identification, it is not clear which way this cuts. Heavy jury reliance on such identifications might actually raise the wrongful conviction rate, depending on what the rate of mistaken identifications in such circumstances is. There are no good data on this issue directly, but there is reason to believe that it may be high, indeed, higher than three or four percent under some conditions. Fortunately, DNA technology has reduced the problem in regard to rapes (but not in regard to murders and other crimes heavily dependent on eyewitness identification).

Which brings us to those non-capital homicides where the main issue is perpetrator identity. If the wrongful conviction rate in such capital homicides seems likely to be about the same as in capital rape-murders, can we generalize this rate to analogous non-capital homicides? We can hope, at least, that capital cases would be the cases where juries would regard themselves as especially obligated to be sure of guilt, given the jury’s role in the imposition of the death sentence itself. If that is the case, it seems reasonable to suspect that the wrongful conviction rate in other homicide cases might at least as high, if not higher, than in capital cases. On the other hand, capital juries are “death qualified,” which may give them a lower decision threshold on the issue of guilt.⁴⁸

⁴⁶ Richard A. Rosen, *Innocence and Death*, 82 N.C. L. REV. 61, 69–70 (2003).

⁴⁷ This is not the place to discuss the moral and epistemic difficulties of acquaintance rape. Suffice it to say that stranger rapes account for most clear cases of true factual innocence.

⁴⁸ See Claudia L. Cowan et al., *The Effects of Death Qualification on Jurors’ Predisposition to Convict and on the Quality of Deliberation*, 8 LAW & HUM. BEHAV. 53 (1984); Robert Fitzgerald & Phoebe C. Ellsworth, *Due Process v. Crime Control: Death Qualification and Jury Attitudes*, 8 LAW & HUM. BEHAV. 31 (1984). See generally *Hovey v. Superior Court*, 616 P.2d 1301, 1315–41 (Cal. 1980) and studies cited therein; see also *Grigsby v. Mabry*, 569 F. Supp. 1273 (E.D. Ark. 1983), *aff’d*, 758 F.2d 226 (8th Cir. 1985) (en banc), *rev’d sub nom. Lockhart v. McCree*, 476 U.S. 162 (1986). As the Supreme Court said in *Lockhart*:

[W]e will assume for purposes of this opinion that the studies are both methodologically valid and adequate to establish that “death qualification” in fact produces juries somewhat more “conviction-prone” than “non-death-qualified” juries. We hold, nonetheless, that the Constitution does not prohibit the States from “death qualifying” juries in capital cases.

In addition, many more of the non-capital homicides are the result of pleas. Pleas would, perhaps, be expected to represent less unsafe convictions than verdicts—except that many non-capital homicide convictions are guilty pleas negotiated in the shadow of a potential death sentence, or of a reduction in degree or a substantially lower sentence than would be received after trial, a reality which to some degree may be expected to undermine the reliability of these pleas in comparison to trial.⁴⁹ We know that some of these pleas took place in cases later resulting in exoneration by DNA.⁵⁰ All in all, there seems no good reason to believe that the factual wrongful conviction rates for murder and stranger-rape, when the central issue is the identity of the defendant as the perpetrator, are substantially lower than the capital rape-murder rate in the 1980's derived in this article, and it would seem incumbent on those who claim that it is, to proffer substantial particular reasons for the claimed differences, rather than simply invoking general problems of extension and external validity.⁵¹

What is true for homicide and stranger rape, however, may not necessarily be very persuasively true for other kinds of crime. I suspect that the wrongful conviction rate for many kinds of crimes of interpersonal violence (robbery, for example) may be at least as high, while that for white collar crimes may be much lower, and wrongful conviction rates for contraband possession crimes may be lowest of all. Since these represent a high percentage of people incarcerated, it is perhaps not true that three or four of every hundred people incarcerated are factually innocent.⁵² But even this, without more study, we don't really know for sure.

V. Why Should We Care About Factually Wrongful Convictions, and What (If Anything) Are We Morally Obligated to Do About Them?

Why should we care about wrongful convictions, anyhow, or perhaps more to the point, how much should we care?

Id. at 173.

⁴⁹ One argument for the abolition of capital punishment is to end such extreme counter-accuracy pressures in regard to plea bargains in homicide cases.

⁵⁰ John Dixon of New Jersey, for example, was exonerated of rape by DNA analysis after a guilty plea. See http://www.innocenceproject.org/case/display_profile.php?id=94.

⁵¹ Professor Gross has catalogued a variety of pressures which he sees as being especially in play in capital cases, and from which one might perhaps infer that capital cases are likely to have a higher factual wrongful conviction rate than other kinds of cases. See Samuel R. Gross, *The Risks of Death: Why Erroneous Convictions Are Common in Capital Cases*, 44 BUFF. L. REV. 469, 474–497 (1996). Most would seem applicable to many non-capital homicides and stranger rapes. Let us just say that I remain agnostic.

⁵² See Gross et al., *supra* note 10, at 532 n.21 (pointing out that the error rate is unlikely to be uniform over all kinds of cases).

On the one hand, just formulating this question seems callous. On the other hand, definitive answers are elusive.⁵³ I take it that no one would argue that a factually inaccurate conviction was a good thing in and of itself, or even morally neutral. Even those who comfort themselves with the idea that in many circumstances the wrongly convicted person probably did some other (similar) crime for which they were not caught, and therefore might count such a conviction as in some sense a net benefit, or at least morally inconsequential, would rarely argue that it would not be better, all other things being equal, to convict the person in question of crimes they actually did, rather than of crimes they did not commit (especially given the fact that in many if not most instances a factually wrongful conviction lets the true perpetrator escape without punishment). So I think we can take it as a given that every factually wrongful conviction is some sort of injustice

But how much of an injustice? There are plenty of people (I among them) who will assert that every factually wrongful conviction is a serious injustice. Indeed, anyone who recalls a personal episode of wrongful accusation merely in a social context, in school or otherwise in life, will begin to understand the intensity with which humans regard such things as outrages when they happen to themselves. When such accusations of wrongdoing result in wrongful decisions concerning guilt, by parents, by teachers, by others in authority, the injustice is generally seriously resented in ways that are not easily forgotten, and which can affect future adjustment, even by those who have done similar things for which they were never suspected (much less by those who have never done anything of the kind). When the wrongful conviction is the product of an official inquiry by a court even in a petty criminal or quasi-criminal context, it not only imposes pain that has a moral claim to our recognition, but it is also seriously corrosive to the respect for law of the wronged individuals, and all of those around them who believe the convicted were in fact innocent.

Nevertheless, it would be wrong to equate the injustice of every wrongful conviction with every other. There is no doubt that some are worse. Most people would probably rank factually wrongful capital convictions as the worst possible, since death is both absolute and uncorrectable. This is no doubt a powerful moral argument, generally right, but in my view the magnitude of the gap between factually wrongful capital convictions and others is easily overstated and overemphasized. At least in regard to non-capital convictions of extreme crimes like murder and stranger rape, emphasizing the difference in kind of the death penalty can undervalue the daily pain of prison life and the daily felt outrage that one has been found guilty of a truly heinous and shameful crime that one had nothing to do with. This can easily lead to an inappropriate concentration on the abolition of capital punishment to the exclusion of efforts to reform the criminal justice system in ways that will reduce the number of factually inaccurate convictions generally. Nevertheless, the instinct that some types of factually wrongful conviction are substantially worse than others needs to be carefully and seriously taken into account in any analysis of the moral problem of wrongful conviction.

⁵³ For a discussion of these issues in slightly different terms, concentrating on capital punishment (and coming perhaps to slightly different conclusions) *see* Steiker & Steiker, *supra* note 11, at 596–607.

Many people probably think that, all other things being equal, the injustice of a wrongful conviction should be measured by the seriousness of the charged crime, or more specifically, by the seriousness of the sentence imposed, to the extent that these may not always be the same. In comparing two individual cases, this is a powerful argument, but caution is called for. Collateral effects on given individuals may substantially exceed the effects reflected by the formal sentence. In addition, the social problem of wrongful convictions can, under some circumstances, exceed the sum of the individual injustices. If the rate of wrongful conviction in regard to some kinds of petty crime were to be high enough,⁵⁴ the resulting social corrosion might be substantially worse than the individual combined effects on the wrongfully convicted alone. We should not be too quick to accept truncated procedures for the processing of lesser charges, or practices that might lead to this effect.

So what should be our response to factually wrongful convictions? All are bad, some are worse, but what should we do about them? An absolutist might say that we should never convict anyone without absolute proof of guilt. On reflection, however, such an absolutist would have to admit that this would mean convicting no one, since we live in a world of probabilities and imperfect knowledge. Human systems cannot eliminate all risk of error and still function, though it is important to note that this does not mean that we cannot get significantly better and still be functional. It depends on what you mean by functional, and what cost you are willing to pay.

I believe that it is here that the Blackstone ratio, or some version of it, comes into play. You will recall that the Blackstone ratio is the name for the version of the moral assertion “it is better that _____ guilty men go free than that one innocent person be convicted.” The number Blackstone chose was ten, though Alexander Volokh has rather amusingly shown that various thinkers over the centuries have put the number at various places between one and a thousand.⁵⁵ In general, it is fair to say that the ratio image is meant as a general declaration that, for any given crime, the relative disvalue of a wrongful acquittal is less, perhaps significantly less, than the disvalue of a wrongful conviction. It was not conceived of by statisticians, and it was never meant, nor should it be used, in my opinion, to announce the acceptability of a system of criminal justice as long as no more than ten percent of those convicted are innocent. In fact, it would seem that if we knew that ten percent of the prison population was factually innocent, we should believe that our efforts at accurate apprehension and conviction, with their various layers of investigatory and trial filtering, had suffered a significant failure. Even the 3–5% rate for capital rape-murder cases in the 1980’s, generalized to the entire prison population, would be shockingly high in the eyes of many. After all, there is nothing about a 10% failure rate, or a 1% failure rate, that makes a system *prima facie* successful. If one in every hundred commercial airplane flights (never mind one in ten) crashed

⁵⁴ My colleague Mark Denbeaux argues, based on his years of experience, that the highest factual innocence rate (and this as the result of guilty pleas to boot) may be in the common circumstance of petty street crime where the defendant cannot make bail, and is finally offered a plea to time served. Personal communication (lots of times in the last thirty-four years).

⁵⁵ See Volokh, *supra* note 2.

before arrival at its destination, I guarantee that no one would regard this as an indicator of the success of commercial aviation (nor would most people elect to fly).

I have said that a 3–5% failure rate applied across the board would be shockingly high in the eyes of many, but even this has to be heavily qualified by context and circumstance, whether we like it or not. Consider honestly your responses to the following, gentle reader:

Hypothetical A

1. Unimpeachably reliable information establishes that at the Northern State Prison there are a thousand men incarcerated for (pick one of the following—possession of drugs with intent to distribute; receiving stolen goods; mugging). The sentences range from two to five years.
2. Of those thousand convicted men, thirty-two are factually innocent of the crime for which they were convicted (by either trial or plea).
3. Of those thirty-two factually innocent men, all had multiple convictions for, and had in fact committed, crimes similar in kind and degree before.

Your reaction? I suspect that most people will not become too upset. Maybe they should, but they won't.

Hypothetical B

Next, consider this variant:

All conditions are as above, except, of the thirty-two factually innocent people, half of them have no criminal records at all, other than this conviction.

Unrealistic, you might say—virtually no one gets jail time for a first offense of this kind. But in some states, such as New York, jail time would be either practically or legally mandated for the distributional drug crime, so it is not so unrealistic. I suspect that your evaluation of the intensity of the injustice is affected by whether or not, to use one of Marquis' favorite phrases, you are dealing with "doe-eyed innocents."⁵⁶ Whether it should be is a different question.

⁵⁶ Marquis regularly trivializes the problem of the conviction of the factually innocent by serving up for easy rebuttal the notion, whose origin he attributes to vehicles of popular culture such as TV shows, that our prisons are "chock-full" of "doe-eyed innocents." *See, e.g.*, Marquis, *supra* note 1; *see also* his testimony before the House Subcommittee on Crime and Terrorism, June 30, 2005, <http://judiciary.house.gov/media/pdfs/marquis063005.pdf>.

Hypothetical C

1. There are a thousand first offenders convicted of (pick one on the list in Hypothetical A) and put on probation for five years, gaining a criminal record and losing the right to vote.
2. Of those thousand, thirty-two are factually innocent.

Your reaction? Though the punishments are not severe compared to imprisonment, the first offender status of the wrongfully convicted makes their convictions perhaps especially corrosive to them and their future life choices.

Hypothetical D

1. There are a thousand persons in prison serving twenty-five years to life for non-capital murder or stranger rape (or, having been charged with capital crimes, have been spared the death sentence and sentenced to twenty-five years to life).
2. Of those, thirty-two are factually innocent (although thirty of them had previous records of burglary or drug crime, which got their mug shots in the system, which is how they ended up being wrongfully convicted of a very bad crime unlike anything they ever actually did).

Your reaction? Here I believe the disgrace of the conviction and the fact that, although in some sense not “doe-eyed innocents,” the wrongful convictions were different and much more severe in kind and degree from the person’s previous record, should intensify one’s feeling of discomfort and injustice. The two “doe-eyed innocents” just make matters that much worse.

Hypothetical E

1. There are a thousand persons on death row.
2. Of those, thirty-two are factually innocent of the crime they were sentenced to death for. Of the thirty-two, one or two are “doe-eyed innocents.”

Your response? According to the data, as demonstrated in this article, that is almost certainly close to the case in regard to the current occupants of present death rows in the United States.

There are, of course, other variants we could consider, and I do not propose to suggest any particular failure threshold where those worried more about being the victims of crime than about being the victims of the criminal justice system ought morally to feel justified in ignoring the wrongful conviction problem. Perhaps in some contexts, a 3.3%

factual wrongful conviction rate wouldn't be so horrible—if *there were nothing that could be done about it*.⁵⁷

And here is where I believe the moral rubber meets the road for every citizen, much less every police officer, prosecutor, judge, or legislator. Even if we might not be horrified at a 3.3% wrongful conviction rate in the abstract, I take it we would all admit that if we could identify the wrongfully convicted cost-free, we would be morally obliged to release them. And if there were reforms that could be made to the system that would better filter out the innocent to begin with, with no associated cost, we would be obliged to make those reforms. Beyond this, I take it we would also be morally obliged to take such actions if the costs were not prohibitive. How are we to approach the question of what constitutes a prohibitive cost? I will set aside issues of monetary cost, not because they might not be relevant under some circumstances, but because monetary costs and other social costs, primarily reduced efficiency in punishing the guilty, are incommensurate, and thus not easily discussed together. Instead, I will concentrate on actions that do not empty the prisons, but instead exonerate one factually innocent person at the cost of the release of, or failure to convict, some number of the guilty.

Here the perceptive reader will hear an echo of the Blackstone ratio, but not a ratio to be used as an image to attempt to norm judges and jurors to a high decision threshold for individual cases. Rather, it is to be used as an approach to taking reformatory actions that will improve the performance of a system-in-being at the margins.

Let us go back to some of our earlier hypotheticals. Take the one that is probably the least morally compelling: the case of the thousand convicted burglars or drug dealers where thirty-two of the convicts are truly factually innocent of the crime they were convicted of, but had long records of similar crimes. Again, I take it as given that if we could identify the wrongly convicted thirty-two accurately, we would be morally obliged to release them. And, more importantly, I take it this would be true if the numbers were thirty-two out of a hundred thousand, even though the general performance of the system would strike one as very good. Thus, even if the Scalia/Marquis op-ed rate were true (which it isn't), it wouldn't necessarily or properly let us off the moral hook

Now assume that we cannot identify the 32 exactly, but we know of a criterion that can be applied (call it the “unsafe verdict” criterion) which will pretty certainly allow us to release 30 of the 32 if we release the 90 people to whom the criterion applies. In other words, we would have to release 60 guilty people (out of 965) in order to insure the release of 30 of the 32 factually innocent. Is the cost of releasing the 60 guilty too high to save the 30 factually innocent? What are the costs? The accelerated recidivism costs of

⁵⁷ This is similar to Jerome and Barbara Frank's observations in regard to Paley's original position: “That excuse would serve were every such blunder inescapable. Then an innocent convicted man, if he were enough of a philosopher, would accept his plight with resignation, as he would an attack of polio or coronary thrombosis—one of life's unavoidable hazards. But such an excuse is brutally callous when the erroneous conviction was avoidable.” JEROME FRANK & BARBARA FRANK, NOT GUILTY 69 (1957).

the 60 guilty, plus any diminution in deterrence coming from the 6% reduction in the rate of punishing the guilty. There are of course, no good ways to measure those marginal effects, but it seems to me that at two to one, the taking of those steps (by reforming the system to allow judges to apply an unsafe verdict criterion to the results of cases, post-trial, perhaps) has a very strong moral claim. Perhaps the moral claim would be even stronger for the death sentence situations.

Hence I offer what I call the Reform Ratio:

Any wrongful conviction that can be corrected or avoided without allowing more than one or two perpetrators of similar crimes to escape, ought to be corrected or avoided; in addition, system alterations (reforms, if you will) that there is good reason to believe will accomplish this ought to be embraced.

You will note that in setting out the first principle, I have been very conservative in my “Reform Ratio.” For reforms working a marginal saving in wrongful convictions, I only propose doing them when an innocent saved by the reform is counterbalanced by no more than one or two wrongful acquittals or reversals. However, in my second principle, I have placed a rather low standard of proof concerning the effects of reform onto the proponents, and a correspondingly high standard of proof for those opposing such reform. Reforms that are undertaken that have counterproductive effects can be undone when this becomes apparent from life. But reforms that are never undertaken based on remotely likely and conjectural effects invoked by opponents who simply are satisfied with the current way of doing things because it generates conviction rates they like, at costs they are currently perfectly happy with (since the costs don’t fall on them), are simply never undertaken.

There are many reforms currently proposed that fit the above criteria, but which have not been adopted, or at any rate widely adopted, due to cobbled-up and unpersuasive opposition resulting from Paleyite preference for the status quo at all costs. Some of these proposals, indeed, would seem to be what one might refer to as “chicken soup” proposals,⁵⁸ presenting no risk of costing any defensible convictions of the guilty. The best examples, to my mind, are the calls for blind testing protocols in forensic science practice, and for similar masking procedures in the administration of line-ups and photo-spreads. There is no rational argument that can establish a way in which the criminal justice system loses any relevant, reliable, or otherwise defensible information concerning guilt by the adoption of such changes. Yet the calls for the former reforms have fallen on deaf ears, and for the latter reforms have been met by adoption in but a small number of jurisdictions, and stiff resistance in the majority (even though the experience in the adopting jurisdictions confirms the workability of such blind identification procedures).

I do not intend to attempt a complete listing of reforms which would appear to meet the obligations of the “reform ratio,” though there is a remarkable catalogue of

⁵⁸ The son comes down with a cold. The mother prescribes chicken soup. The son asks, “Will it help?” To which the mother replies, “It can’t hurt.”—Ancient Borscht Belt Joke.

them.⁵⁹ Only the hostility or inertia of the main players in our criminal justice system has prevented these from being generally adopted. Perhaps faced with hard numbers, and a reground moral lens, they can be gotten to approach such reforms more positively.

Conclusion

I have tried to give some informed discussion concerning likely wrongful conviction rates for various types of crime, and also to set out my position on the moral person's obligations when facing the undoubted and non-trivial phenomenon of such convictions. However, such arguments about the implications of, and extensions from, the 3.3% minimum factual wrongful conviction rate for rape-murders in the 1980's are necessarily subject to both further reflection, and further research. But now at least one such wrongful conviction rate has been established. Archimedes famously said, "Give me a lever long enough and a place to stand, and I will move the world." Further reflection will give us longer and better levers, but at least now we have a place to stand.

⁵⁹ For example, among many others, the proposals in Givelber, *supra* note 4 at 1378–1396, the proposals in Michael J. Saks et al, *Toward a Model Act for the Prevention and Remedy of Erroneous Convictions*, 35 NEW ENG. L. REV. 669 (2001) and Michael J. Saks et al., *The Model Prevention and Remedy of Erroneous Convictions Act*, 33 Ariz. State L. J.665 (2001). the proposals in Findley & Scott, *supra* note 6, at 354–396, and the more structural changes proposed in Risinger, *supra* note 4, at 1311–1316.

Appendix 1

The 203-member sample of capital sentences imposed between January 1, 1982 and Dec. 31, 1989. Rape-Murders are marked RM.

1. Adams, Sylvester Lewis		24. Burden, Jimmie Jr.	
2. Albanese, Charles		25. Bush, John Earl	
3. Alderman, Jack		26. Buxton, Lawrence Lee	
4. Allridge, Ronald Keith		27. Byrd, Maurice Oscar	
5. Anderson, Johnny Ray		28. Byrne, Edward R. Jr.	
6. Anderson, Larry Norman	RM	29. Callins, Bruce Edwin	
7. Andrade, Richard	RM	30. Campbell, Charles R.	
8. Andrews, Maurice		31. Cantu, Ruben	
9. Antwine, Calvert Leon		32. Card, James Armando	
10. Atkins, Phillip Alexander	RM	33. Carriger, Paris Hoyt	
11. Bannister, Alan Jeffery		34. Cave, Alphonso	
12. Baxter, Norman Darnell		35. Celestine, Willie Lawrence	RM
13. Beam, Albert Ray	RM	36. Chambers, James Wilson	
14. Bell, Walter Jr.	RM	37. Clanton, Earl Jr.	
15. Bennet, Baby Ray		38. Clark, David Michael	
16. Bertolotti, Anthony		39. Clark, Herman Robert Charles Jr.	
17. Black, Robert V. Jr.		40. Clisby, Willie Jr.	
18. Blanco, Omar		41. Clozza, Albert J.	RM
19. Blanks, Kenneth	RM	42. Cochran, James Willie	
20. Boggs, Richard T.		43. Coleman, Roger Keith	RM
21. Brecheen, Robert A.		44. Cordova, George	RM
22. Brogdon, John E.	RM	45. Cordova, Jose Angel	
23. Bunch, Timothy Dale		46. Coulter, David Leroy	

47. Crank, Denton Alan		93. Huffstetler, David Earl	
48. Creech, Thomas Eugene		94. Ingram, Nicholas Lee	
49. Cuevas, Ignacio		95. Jacobs, Jesse Dewayne	
50. Davis, James Carl Lee	RM	96. James, Johnny	RM
51. Davis, John Michael		97. Johnson, Curtis Lee	
52. DeLuna, Carlos		98. Johnson, Elliott Rod	
53. DeMouchette, James		99. Johnston, David Eugene	
54. Deputy, Andre Stanley		100. Jones, Andrew Lee	RM
55. Derrick, Mikel James		101. Jones, Arthur Lee	
56. Deshields, Kenneth Wesley		102. Jones, Willie Leroy	
57. Devier, Darrell Gene	RM	103. Julius, Arthur James	RM
58. Dobard, Percy Leo		104. Kenley, Kenneth Lee	
59. Doyle, Daniel Lee		105. Kight, Charles	
60. Drew, Robert N.		106. Kinnamon, Raymond Carl	
61. Duest, Lloyd		107. Kirkpatrick, Frederick	
62. Dufour, Donald William		108. Knox, James Roy	
63. Dunkins, Horace Franklin Jr.	RM	109. Kwan Fai Mak	
64. Edmonds, Dana Ray		110. Kyles, Curtis L.	
65. Ellis, Edward Anthony		111. Lackey, Clarence Allen	RM
66. Eutzy, William		112. Lafferty, Ronald Watson	
67. Fairchild, Barry Lee	RM	113. Landry, Raymond	
68. Flowers, James	RM	114. Lane, Harold Joe	
69. Foster, Emmitt		115. Lashley, Frederick	
70. Franklin, Donald Gene		116. Lincecum, Kavin Wayne	RM
71. Fugitt, John Thomas		117. Lindsey, Michael	
72. Gardner, Billy Conn		118. Lowenfield, Leslie	
73. Gardner, John Sterling		119. Loyd, Alvin Scott	RM
74. Garrett, Johnny Frank	RM	120. Macias, Federico Martinez	
75. Gaskins, Donald Henry		121. Madden, Robert	
76. Gilmore, George Clifton		122. Mann, Fletcher Thomas	RM
77. Glass, Jimmy L.		123. Mann, Larry Eugene	RM
78. Gore, David Alan	RM	124. Marquez, Mario	RM
79. Grubbs, Ricky Lee		125. Martin, Nollie Lee	
80. Guinan, Frank J.		126. Mathenia, Charles Lee	
81. Hamblen, James William		127. May, Justin Lee	
82. Hance, William Henry		128. Mayo, Randy Dale	RM
83. Harding, Donald Eugene		129. Mays, Noble D.	
84. Harich, Roy Allen	RM	130. McCoy, Stephen Albert	RM
85. Harris, Benjamin James III		131. Montoya, Ramon	
86. Harris, Curtis Paul		132. Motley, Jeffery Dean	
87. Harris, Danny Ray		133. Murray, Robert Anthony	
88. Henderson, Robert Dale		134. Neuschafer, Jimmy	
89. Henderson, Wilburn Anthony		135. Nevius, Thomas	RM
90. Herrera, Leonel Torres		136. Nichols, Joseph Bernard	
91. Hill, Steven Douglas		137. O'Neal, Robert	
92. Holland, David Lee		138. Osborn, Kevin Winston	RM

139. Otey, Harold Lamont	RM	172. Stringer, James R.	
140. Palmer, Charles Jess		173. Summit, Wilby Frank	
141. Paradis, Donald M.		174. Terry, Benjamin	
142. Parker, Robert Lacey		175. Thomas, Wallace Norrell	
143. Paster, James Emery	RM	176. Thomas, Wallace Norrell	RM
144. Peterson, Derick Lynn		177. Thomas-Bey, Donald	RM
145. Phillips, Clifford X.		178. Thompson, John Russel	
146. Pickens, Edward Charles		179. Tichnell, Richard Danny	
147. Pollard, Roosevelt Jr.		180. Troedel, Donald Walter	
148. Poyner, Syvasky Lafayette		181. Turner, Willie Lloyd	
149. Pruett, David M.	RM	182. Wade, Melvin Meffery	
150. Pruett, Marion Albert		183. Ward, Thomas L.	
151. Rault, Sterling	RM	184. Washington, Earl Jr.	RM
152. Rector, Ricky Ray		185. Watkins, Johnny Jr.	
153. Roberts, Rickey Bernard	RM	186. Watson, Willie Jr.	RM
154. Roberts, Victor		187. Webb, Freddie Lee	
155. Rogers, James Randall	RM	188. Weeks, Varnall	
156. Romero, Jesus	RM	189. Welcome, Herbert	
157. Rougeau, Paul		190. White, Jerry	
158. Rushing, David		191. White, Vernon Lamar Sattie	
159. Sawyers, John Christopher		192. Whitmore, Jonas Hoten II	
160. Schlup, Lloyd		193. Wilcher, Bobby Glen	
161. Shippy, John Charles		194. Wilcher, Bobby Glen	
162. Sidebottom, Robert T.		195. Wiley, William L.	
163. Singleton, Cornelius		196. Wilkerson, Richard James	
164. Siripongs, Jaturun		197. Williams, Harold Glenn	
165. Smith, Ronald Allen	RM	198. Williams, Michael Allen	
166. Snell, Richard Wayne		199. Williams, Walter Key	
167. Spencer, Timothy W.	RM	200. Willie, Robert Lee	RM
168. Squires, William M.		201. Wingo, Jimmy C.	
169. Starr, David Lee	RM	202. Wise, Joe Louis	
170. Stockton, Dennis Waldon		203. Woods, Ronald	
171. Streetman, Robert S.			

Appendix 2

The 218-member sample of capital sentences imposed between January 1, 1982, and December 31, 1989. Members in common with the 203-member sample are marked with an asterisk. Rape-Murders are marked RM

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|--------------------------|----------------------------|
| 1. Adams, Thomas Mark | 4. Alvin, Eddie Eugene |
| 2. Allen, Clarence Ray | 5. Amaya-Ruiz, Jose Jacobo |
| 3. Allen, Timothy Lanier | 6. Amrine, Joseph |

7.	Anderson, Richard Harold		52.	Comer, Robert Charles	
8.	Aragon, Mark Emilio		53.	Compton, Joel Lee	
9.	Ashford, James B.		54.	Cooper, Kamathene A.	
10.	Atkins, Phillip A.*	RM	55.	Copenhefer, David C.	
11.	Bacon, Robert Jr.		56.	Correll, Michael Emerson	
12.	Barnes, Elwell		57.	Cosby, Teddy Lee	
13.	Barnett, Larry Floyd		58.	Crittenden, Steven Edward	
14.	Bean, Harold		59.	Cruse, William Bryan Jr.	
15.	Beaver, Gregory Warren		60.	Davis, James Carl Lee*	RM
16.	Berry, Earl Wesley		61.	Davis, Steven Raymond	
17.	Beuke, Michael		62.	Deaton, Jason Thomas	
18.	Billa, Louis	RM	63.	DeLong, Wayne Kenneth	
19.	Black, Robert V. Jr.*		64.	Diddlemeyer, Gerald Michael	
20.	Boggs, John Edward		65.	Dufour, Donald William	
21.	Bounds, Frank	RM	66.	Dyer, Alfred	
22.	Bowers, Marselle Jerome	RM	67.	East, Wayne	
23.	Boyd, Charles Anthony	RM	68.	Eaton, Winthrop Earl	RM
24.	Boyde, Richard		69.	Edwards, Richard Lee	
25.	Bradley, Danny Joe	RM	70.	Elmore, Edward Lee	
26.	Bridle, James M.		71.	Eperson, Roger Dale	
27.	Brisbon, Henry		72.	Evans, Johnnie Lee	RM
28.	Broaddrick, Thomas Elmer		73.	Ferall, Dallas	RM
29.	Brown, Jesse Keith		74.	Ferguson, John Erroll	RM
30.	Brown, John G.		75.	Ford, Pernel	
31.	Brown, Morris		76.	Foster, Lafonda Fay	
32.	Brown, Willie A.		77.	Franklin, Donald Gene*	RM
33.	Browning, Paul Lewis		78.	Frazier, Richard	
34.	Brownlee, Virgil Lee		79.	Fuller, John F.	
35.	Buell, Robert A.	RM	80.	Gallego, Gerald Armond	RM
36.	Cabello, Frank J.		81.	Garceau, Robert Frederick	
37.	Cam Ly		82.	Garcia, Enrique	
38.	Campbell, Kenneth Wayne		83.	Gardner, Mark Edward	RM
39.	Canaan, Keith B.		84.	Garrett, Daniel Ryan	
40.	Carter, Antonio M.		85.	Gilmore, George C.*	
41.	Carter, Lincoln L.		86.	Green, Alphonso	
42.	Celestine, Willie Lawrence*	RM	87.	Griffin, Milton	
43.	Chaffee, Jonathan	RM	88.	Hain, Scott Allen	
44.	Champion, Steve Allen		89.	Hamm, Doyle Lee	
45.	Cherry, Roger Lee		90.	Harris, James	
46.	Chester, Frank		91.	Hatcher, Ricky Dane	
47.	Clayton, Willie		92.	Hawkins, Don Wilson	RM
48.	Cochran, James Willie*		93.	Hensley, Robert	
49.	Cockrum, John		94.	Hernandez, Alejandro	RM
50.	Combs, Ronald Dean		95.	Herrera, Mickel William	
51.	Comeaux, Adam	RM	96.	Herrera, William Diaz	
			97.	Hightower, Bobby Ray	

98. Hinchey, John Albert		144. Memro, Harold Ray	RM
99. Hodge, Benny Lee		145. Messiah, Keith E.	
100. Hodges, George M.		146. Miller, David Earl	RM
101. Hoke, Ronald Lee	RM	147. Milner, Lynn Bernard	
102. Holloway, Allen Earl		148. Moon, Larry Eugene	
103. Hooker, John Michael		149. Morgan, Derrick	
104. Howell, Michael Wayne		150. Muhammad, Askari Abdullah	
105. Huffman, Richard		151. Murray, Robert Anthony*	
106. Hunt, Henry Lee		152. Murry, Paul Edward	
107. Jacobs, Jesse Dewayne*		153. Nevius, Thomas*	RM
108. Jennings, Bryan F.	RM	154. Nicolaus, Robert Henry	
109. Jimenez, Jesus Rodriguez		155. O'Connell, Barry Gilbert	
110. Johnson, Bobby Ray Jr.	RM	156. O'Shea, Ronald G.	
111. Johnson, Caesar Lamont		157. Owen, Duane Eugene	RM
112. Johnson, James Willis		158. Payne, Randy Joe	RM
113. Johnson, Mitchell		159. Peterkin, Otis	
114. Johnson, Ricky Lee		160. Petrocelli, Tracy	
115. Joyner, Richard Wayne		161. Poggi, Joseph Carlos	RM
116. Kaurish, Jay Charles	RM	162. Powell, Tina Hickey	
117. Keeton, Perry		163. Quesinberry, Michael Ray	
118. Kenley, Kenneth Lee*		164. Ramseur, Thomas C.	
119. Kennedy, Stuart S.		165. Reilly, Michael Glenn Patrick	RM
120. Lagrand, Karl Hinze		166. Riggins, David E.	
121. Lagrand, Walter Burnhart		167. Robinson, Fred Lawrence	
122. Laird, Richard		168. Robinson, Timothy Alexander	RM
123. Lee, Larry		169. Rogers, James Randall*	RM
124. Lindsey, Jack Russell		170. Rogers, Jerry Layne	
125. Long, David Martin		171. Rose, James Franklin	
126. Long, Michael Edward		172. Ross, Craig Anthony	RM
127. Lord, Thomas Russell		173. Rouster, Gregory	
128. Loyd, Alvin Scott	RM	174. Ruiz, Paul	
129. Lucas, Harold Gene		175. Rupe, Mitchell	
130. Lucas, John W.		176. Ryan, Michael W.	
131. Lynn, Frederick		177. Sanchez, Teddy Brian	
132. Mackall, Tony Albert		178. Scire, Anthony	
133. Madison, Vernon		179. Simms, Darryl	RM
134. Mahaffey, Jerry		180. Skaggs, David Leroy	
135. Marquez, Howard C.		181. Smith, Bernard	
136. Marshall, Robert O.		182. Smith, Clarence	
137. Mathers, Jimmy Lee		183. Smith, David	
138. Mattson, Michael Dee	RM	184. Smith, Kenneth Eugene	
139. May, Justin Lee*		185. Snow, John Oliver	
140. McDonnell, Michael Martin		186. Sosa, Pedro	
141. McDowell, Charles E.	RM	187. Spencer, Timothy Wilson*	RM
142. Melock, Robert	RM	188. Spivey, Herbert Lander Jr.	
143. Melton, James Andrew		189. Sterling, Gary	

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| 190. Stewart, Richard | RM |
| 191. Stiles, Russell Gene | |
| 192. Stokes, Freddie Lee | |
| 193. Szuchon, Joseph Thomas | |
| 194. Tassin, Robert | |
| 195. Thompson, John* | |
| 196. Tillman, Gary Leonard | |
| 197. Troy, Larry | |
| 198. Turner, Melvin | |
| 199. Van Denton, Earl | |
| 200. Victor, William Keith | |
| 201. Walker, Gary Alan | |
| 202. Walls, Christopher Charles | |
| 203. Washington, Theodore | |
| 204. Webb, Dennis Duane | |
| 205. West, Paul | |
| 206. White, Derrick Quinton | |
| 207. Whitehead, John E. | RM |
| 208. Whitney, Raymond | |
| 209. Whitt, Charles Edward | |
| 210. Williams, Andrew | |
| 211. Williams, Darnell | |
| 212. Williams, Donald | |
| 213. Williams, Roy | |
| 214. Willis, James Earl | |
| 215. Wilson, Ronald Bernard | RM |
| 216. Wilson, Zachary | |
| 217. Wright, Bronte Lamont | RM |
| 218. Zook, Robert Peter Jr | |

