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INNOCENTS CONVICTED: AN EMPIRICALLY JUSTIFIED FACTUAL 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]

To a great extent, those who believe that our criminal justice system rarely convicts the factually innocent and those who believe such miscarriages are rife have generally talked past each other for want of any empirically justified factual innocence wrongful conviction rate. This article remedies at least a part of this problem by establishing the first such empirically justified wrongful conviction rate ever for a significant universe of real world serious crimes: capital rape-murders in the 1980s.

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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 also* 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" or the "Scalia/Marquis 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. *Marsh*, 126 S. Ct. at 2538, 165 L. Ed. at 457. This statement and its justification *vel non* are discussed *infra* at note 17.

Using DNA exonerations for capital rape-murders from 1982 through 1989 as a numerator, and a 407-member sample of the 2235 capital sentences imposed during this period, this article shows that 21.45%, or around 479 of those, were cases of capital rape-murder. Data supplied by the Innocence Project of Cardozo Law School and newly developed for this article show that only two-thirds of those cases would be expected to yield usable DNA for analysis. Combining these figures and dividing the numerator by the resulting denominator, a minimum factually wrongful conviction rate for capital rape-murder in the 1980s emerges: 3.3%.

The article goes on to consider the likely ceiling accompanying this 3.3% floor, arriving at a slightly softer number for the maximum factual error rate of around 5%. The article then goes on to analyze the implications of a factual error rate of 3.3%-5% for both those who currently claim errors are extremely rare and those who claim they are extremely common. The article discusses extension of the 3.3-5% to other capital and non-capital categories of crime, and considers at length standards of moral duty to support system reform in the light of such error.

I. 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 Part III of this article show. Part IV then deals with the impact of an empirically derived factual innocence rate[2] for at least one important

[2] The term usually used is "wrongful conviction rate," and because it is so commonly used, I too have sometimes used it (usually qualified by the term "factual") interchangeably with "factual innocence rate." And in other contexts, when not attached to the word "rate," the term "wrongful conviction" simply cannot be comfortably avoided, but it must always be approached with caution, because it can easily lead to the conflation of three importantly different problems of justice. The first is the problem of convicting those who are factually innocent either because no crime was committed or, more commonly, because a crime was in fact committed, but by someone else (wrongful conviction in the factual sense). The second is the problem of convicting a person who has undoubtedly performed the actus reus of a crime for which they are not culpable, either because of insanity or the absence of some other required indicium of culpability, usually a particular required mental state (wrongful conviction in the culpability sense). The third is the conviction of persons who may very well be both factually guilty and culpable, but who were convicted in trials containing procedural errors not easily dismissed as harmless error (wrongful conviction in the procedural sense). When I speak of "innocence," "wrongful conviction," or "wrongful conviction rate" in this Article, I am referring to factual innocence, rather than innocence by

category of real world criminal convictions (capital rape-murders in the 1980s) on various participants in current debates on both the death penalty and the problem of convicting the factually innocent generally. Part V examines the problem of generalizing the factual innocence rate from capital rape-murder convictions in the 1980s to other times and other crimes. Part VI provides a lens through which to view the moral and policy implications of such a factual innocence rate. But first, some historical context:

II. 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 the Rev. William Paley, believe that, even though it is wrong to convict an innocent person, such convictions not only are 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.[3] Paleyites tend to be

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virtue of a mischaracterization of culpability, or a conviction rendered wrongful by procedural irregularities. *See* D. Michael Risinger, *Unsafe Verdicts: The Need for Reformed Standards for the Trial and Review of Factual Innocence Claims*, 41 HOUS. L. REV. 1281, 1295-1301 (2004). As Daniel Givelber has pointed out, adopting this definition of innocence excludes 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, 1327-28 (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* note 2, at 1298-1307.

[3] 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). This 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, 442-43 (1998). For a more extended (and amusing) treatment, see Alexander Volokh, *n Guilty Men*, 146 U. PA. L. REV. 173 (1997).

conservative, in the sense that any changes to current ways of conducting the criminal justice process, 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.[4] 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 the potential effect abhorrent, and to label the proponents "soft-headed sentimentalists" or some similar characterization, while the Romillists in turn will label the Paleyites hard-hearted troglodytes, indifferent to the plight of the convicted innocent, with knee jerk opposition to reform.

What neither side has a good handle on, however, is the magnitude of the problem of factually wrongful conviction and wrongful acquittal. Partly this is due to the inherent difficulty of establishing the ground truth of factual guilt or innocence better than the trials (or plea bargains) that resulted originally in acquittals or convictions. But, at least with regard to convictions, it is also partly due to the fact the legal system is structured to operate as if it were controlled by Paleyites, whatever the personal beliefs of individual participants. This is the result of rather extreme doctrines

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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, *It's Good and We're Going to Keep It: A Response to Ronald Tabak,* 33 CONN. L. REV. 819, 835 (2001) (discussing the risks of the death penalty).

[4] 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).

intended to uphold 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]

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 is like worrying about being struck by a meteorite.[8]

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[5] *See* Risinger, *supra* note 2, at 1313-16. *See generally* George C. Thomas III et al., *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." . . . [I]t 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, 427-28 (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, 348-53 (2006); *see also* Thomas et al., *supra* note 5, at 277-85.

[7] *See* 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). The only case in which an executed defendant has been the subject of post-execution DNA testing in the United States 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*, WASH. POST MAG., 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. (In Britain, a similar confirmation occurred in the case of James Hanratty, executed in 1962 for the notorious "A-6 murder." *See* Regina v. James Hanratty, Deceased [2002] EWCA Crim. 1141 CA (Crim. Div.)).

[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 17. As an umbrella term, "complacent Paleyites"

comes closest to the mark. Here are some sample quotations from complacent Paleyites over the years:

> "I think that the Complaints of the present Mode of administering the Criminal Law have little Foundation, for the Cases in which the Innocent are improperly convicted are extremely rare."

Testimony of Baron Parke before the Select Committee of the House of Lords (1848), *quoted in* A.H. MANCHESTER, SOURCES OF ENGLISH LEGAL HISTORY 1750-1870, 179 (1984) (considering a bill to authorize appeals in criminal cases).

> 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 . . .
>
> If our own procedure and Courts of Justice afforded ground for similar apprehension [to those on the Continent] 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.

John Stuart Mill, Speech in Favor of Capital Punishment Before the House of Commons, (Apr. 21, 1868), *available at* http://ethics.sandiego.edu/Mill.html (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, 649 (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 in* 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

The reasons assigned 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 adversary 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. As one can see from the epigram at the beginning of this Article, Paleyites such as Justice Scalia and Joshua Marquis still speculate about, and embrace, ludicrously low wrongful conviction rates. However, such speculation has become both obsolete and untenable, since, as I propose to demonstrate, the data and the elementary statistical tools necessary to arrive at a reliable minimum rate of factually wrongful conviction, at least in a certain significant subset of cases, are actually to hand. And from this specific minimum innocence rate other inferences may defensibly be drawn about the problem of factually

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> 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 that any innocent person has been executed during this period; and they do not 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 and Cassell wrote, eleven persons later exonerated by DNA evidence were on death row awaiting execution. *See infra* note 14.

"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, 2533, 165 L. Ed. 2d 429 (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* note 7. This would seem to imply that there are others. However, there are no other American cases of DNA testing on the executed, mainly as the result of prosecution opposition. *See* Noyes, *supra* note 7, at 956-57. One would think Justice Scalia would know this fact.)

[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*, 506 U.S. at 420 (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 overconfidence in the accuracy of the criminal justice system, see Givelber, *supra* note 2, at 1328-34.

wrongful conviction. Once Paleyites and Romillists are forced to agree on at least a partial description of the problem of factually wrongful conviction, they can then proceed to develop and set out informed normative responses to the empirical reality.

III. AN EMPIRICALLY JUSTIFIED FACTUAL WRONGFUL CONVICTION RATE: THE CASE OF CAPITAL RAPE-MURDERS IN THE 1980S

In order to derive a minimum factual wrongful conviction rate (a factual innocence rate), we must, of course, have a numerator and a denominator. The denominator would represent a certain reference set of convictions, and the numerator would represent the number of factually wrongful convictions in the reference set. We might look for our numerator 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 indisputable cases of factually wrongful conviction.[12]

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[10] A comprehensive compilation of cases qualifying as exonerations (both those based on DNA and those not so based) occurring since 1989, qualifying under the explicit objective criteria set out in the article, is set out in Samuel R. Gross et al., *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. & CRIMINOLOGY 587, 597-98 (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, also discussed in *Kansas v. Marsh*. *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 McAdams, *supra* note 3, at 827-34 (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 Risinger, *supra* note 2, at 1321-28. I invite all those interested (including Justice Scalia) to read the facts, and then ask themselves if there is really 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, 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 inference 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* LOCKE BURT, FLORIDA COMM'N ON CAPITAL CASES, CASE HISTORIES: A REVIEW OF 24 INDIVIDUALS RELEASED FROM DEATH ROW 136 (2002), *available at* http://www.floridacapitalcases.state.fl.us/publications/innocentsproject.pdf. 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 in which the prosecution agreed with innocence (out of twenty-four) 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 to exercise 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 in prison, after the perpetrator, having been identified through a cold DNA hit, confessed to being the sole attacker. Phoebe Zerwick, *Hunt Exonerated*, WINSTON SALEM J., Feb. 6, 2004, *available 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 these new parties to the crime, first mentioned years after the fact: the unindicted co-ejaculator." BARRY SCHECK ET AL., 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. 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, and this scenario is not uncommon. Even when the true perpetrator has not yet been identified, it seems unlikely that one DNA exoneration in a hundred is

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 these exonerations represent, in order to find a denominator and establish a minimum rate of factual innocence 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 and factual innocence.

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, in which a trial resulted in a conviction. The DNA exonerations can usefully be divided into four groups: capital cases,[13] non-capital homicide cases, non-capital rape/sexual assault cases, and others. The most obvious group to examine in searching for a denominator is the capital cases. This group consists of 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. These would be 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.[14] There

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actually a false exoneration, given the kind of tortured alternative scenarios usually generated and the kind of hurdles the exonerated have had to overcome to finally gain their freedom. *See generally* The Innocence Project, http://www.innocenceproject.org (last visited Apr. 11, 2007) (containing the case profiles of the 194 persons exonerated by DNA to date (Feb. 11, 2007)). To deal with the problem of residual doubt, it might be rational to impose some modest but generous (from the point of view of rational likelihoods) 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 22 and accompanying text.

[13] The term "capital cases" in this article refers to cases in which the death penalty was actually imposed. It is synonymous with "capitally sentenced cases," a locution also used on occasion for clarity later in the article. Hence some murder prosecutions may have been charged as capital, and tried to death-qualified juries, but if the death sentence was never in fact imposed, they are not "capital cases" as that term is used in this Article. This outcome seems to occur in about half of all capitally charged crimes. *See* Erik Lillquist, *Absolute Certainty and the Death Penalty*, 42 AM. CRIM. L. REV. 45, 55 n.49 (2005).

[14] The first such trial was that of Dennis Williams in Illinois. *See* The Innocence Project, http://www.innocenceproject.org (last visited Apr. 11, 2007). He was tried in 1979. *Id.* The latest such trial so far is that of that of Ryan Matthews in Louisiana. See the same website for more information on this trial 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:

are fourteen capital-case DNA exonerations so far in cases tried from 1977 to 1999. During that same period of time, 5968 capital sentences were imposed.[15] These figures give an absolute minimum factual error rate for capital sentences imposed during 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 of morality and policy. But of course this percentage does not represent the actual rate of factually wrongful conviction. In fact, it is clearly grossly understated, because we are using the wrong denominator.[16] The choice of the right denominator is what makes it empirically defensible to derive a factual innocence 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.[17]

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 resentenced—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.

[15] Tracy L. Snell, *Capital Punishment 2000,* BUREAU OF JUST. STAT. BULL. app. tbl.1 (Dec. 2001).

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

[17] 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. *Id.* 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 factually 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 establishing actual innocence. For instance, most of the Gross et al. 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 apparently did not stop the Marquis

The DNA exonerations can only occur in the subset of capital convictions 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 capital case exonerations, this has meant what can be called "rape-murders," generally homicides where the victim is raped, then killed. In fact, thirteen of the fourteen DNA exonerations in capital cases involved rape-murders.[18]

Looking at these thirteen cases, two important points emerge about the window that the DNA exonerations open on the problem of wrongful conviction rates in general. First, that window is closing. As DNA technology has become more sensitive, more accurate, and more generally

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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, 518-20 (2005)) was criticized on these specific grounds in Steiker & Steiker, *supra* note 11, at 588-89, an article in the same journal issue as Marquis' own. (Notably, 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 such wrongful conviction rates in the academic literature, however, tend to be fairly conservative. Various such studies are collected and analyzed in Givelber, *supra* note 2, at 1336-46. While none until the present study was backed up by thoroughly solid empirical justification (these studies typically generated aggregate rates, and they almost universally used various proxy measures like judge-jury agreement), all results fall into a fairly narrow range (.8%-8%) not terribly inconsistent with the findings of the present study. The single example with a well defined denominator and a well defined (though easily contested) numerator is found only in a footnote in an article otherwise devoted to the question of why judges who are personally morally offended by abortion or the death penalty do not resign. *See* Bruce Ledewitz, *An Essay Concerning Judicial Resignation and Non-Cooperation in the Presence of Evil*, 27 DUQ. L. REV. 2, 21 n.33 (1988). In that footnote, Prof. Ledewitz recounted that he had examined the first hundred cases of execution under the restored death penalty and found four convicts (identified by name) whom he regarded as having "significant claims of innocence." Again, the methodology is exceedingly soft, but the 4% resultant is not very different from that arrived at in this study. (Thanks to Edward Hartnett for pointing out the Ledewitz footnote.)

[18] The one exception involved DNA obtained from saliva and hair left on a ski mask. This was the Ryan Matthews case tried in 1999 and referenced *supra* note 14. This case is truly an outlier in three regards. First, as stated, it did not involve rape-murder. Second, it was tried three years after the next most recent trial and capital sentence resulting in a DNA exoneration to date (the case of Ray Krone in Arizona, 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.

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 greater 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.[19] We must use the post-conviction DNA exonerations wisely to throw light on the more general problem. Second, 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 examining 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.[20] Two of the twelve trials are clearly outliers—the 1979 trial of Dennis Williams took place three years before the next later trial, and the first trial of Ray Krone (1992) occurred 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 prescience 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 remarkably belated for DNA not to have been utilized originally. At any rate, it seems clear that it is neither required nor justified statistically to retain these two outlier examples in the numerator set.[21] So

[19] 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). A later analysis of an 86-case reference set of exonerations came to broadly similar results. *See* Michael J. Saks & Jonathan J. Koehler, *The Coming Paradigm Shift in Forensic Identification Science*, 309 SCI. 892, 895 fig.1 (2005). Absent from the list, but in my opinion at least as important, are both the lack of effective discovery in many jurisdictions, as well as the tunnel vision of police and prosecutors that does not amount to official misconduct, but is instead considered to be mere zeal. *See generally* Findley & Scott, *supra* note 6; Daniel S. Medwed, *The Zeal Deal: Prosecutorial Resistance to Post-Conviction Claims of Innocence*, 84 B.U. L. REV. 125, 148-49 (2004).

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

[21] The inclusion of the earliest case and the latest case would drag with each outlier three years' worth of denominator cases, clearly a statistically unwarranted result. As it is, the

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.[22] 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.[23]

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.[24] That denominator would yield a minimum factual innocence rate of .47%, or nearly five in a thousand (and more than

earliest included case (Nicholas Yarris) and the latest (Ronald Jones) were both tried mid-year. *See* Commonwealth v. Yarris, 549 A.2d 513, 518 (Pa. 1988) (noting Yarris's jury trial took place on July 1, 1982); Jones Clemency Petition, http://www.law.northwestern.edu/macarthur/documents/compensation/JonesClemencyPet.pdf (noting Jones was convicted on July 17, 1989). Hence, the inclusion of the full year's worth of convictions for both 1982 and 1989 gives a proper margin to avoid statistically inappropriate bookending.

[22] See the extensive discussion *supra* note 12 concerning the small likelihood that even one percent of the current 194 DNA exonerees are factually guilty, given what they have had to go through to be released by the system after conviction. As further noted in 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.

[23] 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 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 disparate erroneous capital rape convictions.

[24] Snell, *supra* note 15, at app. tbl.1.

double the figure arrived at when we used all capital DNA exonerations and all death sentences).[25]

But that denominator is still understating the factual innocence rate, because it is still incorrect. The number of all death penalties imposed from 1982 to 1989 inclusive includes all sorts of capital cases that were not rape-murders.[26] The proper denominator is the number of capital rape-murder cases. An analysis of a sample of 406 capital convictions imposed in the period 1982-1989 inclusive indicates that only 21.45% of capital sentences involve a rape-murder.[27] Thus, the proper denominator is 479,[28] and thus

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[25] But not that much higher than the rate derived from Joshua Marquis's numbers when writing in an academic context (.35%), as opposed to the more polemical Marquis op-ed rate of .027%. *See supra* note 17.

[26] An interesting sidelight 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 1980s, 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.

[27] Here is how this sample and the resultant percentage were derived: there is no single official database listing the names of all persons who have had death sentences imposed upon them since the reinstitution 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* Snell, *supra* note 15. 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 data into a single comprehensive list. James Liebman and his colleagues at Columbia Law School endeavored to compile this information for the period 1973-1995, completing the project in 2000. *See* James Liebman et al., *A Broken System: Error Rates in Capital Cases, 1973-1995*, *available at* http://www.thejusticeproject.org/press/reports/liebman-part-1.html. The result was a number of databases which Professor Liebman made publicly available through the International Consortium for Political and Social Research, a University of Michigan Database archive. These databases can be accessed at 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 database) from the most comprehensive of the databases, 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 database 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).

Under these conditions, deriving the names and the facts was tedious but not difficult. My stepdaughter, Anna Estevao, 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 database. This database listed 2221 entries within the time parameters, 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 produced by the random number generator reflected 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, 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.

[28] 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 derive, 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 33.3% rate of non-usable DNA derived from the Innocence Project data, *see infra* note 31 and accompanying text, 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

the factual innocence rate for capital rape-murder convictions in the period 1982-1989 inclusive is *at least* 2.2%.

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?[29]

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. As the undisputed leader in pursuing that goal, there is little doubt that it has records of more requests for DNA evidence in more cases than any other entity. In the summer of 2006 I contacted the Innocence Project and asked them to use their records to determine in what percentage of cases tried during 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 cases in which no usable DNA survived would be significantly different for either of those categories than that in capital rape-murders.

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cases out of 2235 capital cases is 597 and the minimum number is 362. The raw factual innocence rate would be between 1.8% and 2.9%. In that sense, 1.8% is the "minimum minimum" factual innocence rate for all capital rape-murders in the reference universe, but the figures in the text represent the most likely true factual innocence rate.

[29] As Charles Sullivan pointed out to me, if cases had been tested at random, the best indicator of the factual innocence rate would be the number of exonerations over the number of cases tested. Clearly, however, 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, such (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.

By a lucky coincidence, at the same time that I contacted them, the Innocence Project had just begun a comprehensive file review in order to collect various data across cases, therefore isolating the data on "no usable DNA" in regard to their cases in the reference period was not too burdensome, and 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 usable 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 made.[30]

The denominator of 479 for the number of capital rape-murder convictions in the reference period, which we previously derived, must therefore be reduced by 33.3% to account for cases with no usable DNA available for testing, thereby yielding a denominator of 319. Using 10.5 as the numerator, as previously explained, and 319 as the denominator yields a true minimum innocence rate for rape-murder from 1982-1989 inclusive of (*pace* Joshua Marquis and Justice Scalia) 3.3%.[31]

So there we have it. A conservative minimum factual innocence rate, derived from a real, not insignificant, set of serious criminal convictions, and capital convictions to boot. The question immediately comes to mind: What can this specific rate 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-murder convictions in the 1980s. We have derived a minimum factual innocence rate. What, if anything, can be said about the *maximum* factual innocence rate? We have a floor. What can we say about a ceiling?

As it turns out, I think we can say some closely 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 that many of these cases have had the DNA requested and analyzed. We do not know how many cases exactly, because

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[30] Figures derived from data spreadsheet supplied by Huy Dao of the Innocence Project, September 15, 2006 (on file with author).

[31] Applying the 33.3% exclusion to the confidence interval given, *supra* note 28, 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, though probably not by much.

there is no central database of such information,[32] but capital cases generally attract post-conviction aid from anti-death penalty advocates. Among 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, Charles McDowell broke into a house in his own neighborhood and attacked the maid, who was alone in the house at the time. Because of the victim's screams, a neighbor who knew him confronted him as he was leaving the premises covered in blood. He stabbed the neighbor, but police were called by other neighbors. The police followed the blood trail, and within a short period of time, found him hiding in some bushes at the other end of the blood trail. There was semen on the victim's panties, but DNA evidence was not likely to help the defense.[33]

However, most cases are not so clear as the McDowell case with regard to factual guilt independent of DNA. Thus, DNA exclusion is the greatest post-conviction hope, and would generally be worth requesting. It would be quite surprising, perhaps even shocking, if capital post-conviction counsel had failed to request DNA testing in anything close to half the 319 capital rape-murder cases in the reference set. Additionally, even in these cases, it is likely that the requests, if not universally made, 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. I believe it is fair to put a reasonable maximum under these circumstances at around 5%.

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[32] *A fortiori*, some DNA testing actually 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.

[33] People v. McDowell, 763 P.2d 1269, 1271-72 (Cal. 1988). One should exercise caution, 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 & Steve Mills, *DNA Test Rules Out 4 Inmates*, CHI. TRIB., 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 Evidence: Hawks and Rabbits* (National Public Radio broadcast, Apr. 19, 2002), *available at* http://www.thislife.org/Radio_Episode.aspx?sched=920. 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 any event, no one was ever charged.

Thus, 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 1980s.

IV. IMPLICATIONS OF A 3-5% FACTUAL 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 often 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 derived destroy the tenability of such claims, one can depend on the Joshua Marquises and the Justice Scalias not to be happy with that result.

In addition, Paleyites will find little to comfort them regarding 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.[34] In general, over two-thirds of all capital convictions are reversed, and more than half of defendants who initially receive capital sentences are ultimately removed from death row (although fewer than four in one thousand are acquitted on re-trial).[35] 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 of death row as a result.[36] Kirk Bloodsworth (who even Joshua Marquis concedes was factually innocent[37]) was retried and again convicted, but sentenced "only"

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[34] *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.

Kansas v. Marsh, 126 S. Ct. 2516, 2535-36, 165 L. Ed. 429, 455 (2006).

[35] Liebman et al., *supra* note 27, at 4-8.

[36] 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 14.

[37] Marquis, *supra* note 8, at 517.

to life without possibility of parole. Verneal Jimerson was awaiting retrial when the DNA results came in. The other nine would all have been executed if DNA testing had not been invented. Thus, the results of procedural reversals do not appear to track actual innocence very well.[38]

On the other hand, some Romillists may also find themselves unhappy. We can usefully divide modern Romillists between anti-death penalty advocates and Innocence Network activists[39] (I count myself at least an honorary member of the latter[40]). The anti-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

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[38] "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 2, at 1321.

Here I must make a comment on the important work of Professor Liebman and his colleagues on "error rates in capital cases." *See* Liebman et al., *supra* note 27. If it were not for Professor Liebman's work, we would not have the database 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. *See id.* (Of course, the rate of legal and procedural errors generating their own kind of "wrongful conviction" is another kind of "error rate." *See supra* note 2, and an important thing to know). Nor is the rate of legal error a measure connected to "actual factual" innocence very directly or very strongly. *Id.* (That there is such a connection is never explicitly said in *A Broken System*, but to my mind, is implied in a number of places. *See, e.g.*, Liebman et al., *supra* note 27 (the sentence on the first page of the executive summary states that "American capital sentences are . . . persistently and systematically fraught with error that seriously undermines their reliability.").) Predictably, opponents have turned this information 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. As the text points out, however, there is reason to believe both positions are wrong, as findings of legal error do not appear to track actual innocence very well.

[39] 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 categorically to the death penalty on a personal level, but many may not be.

[40] I am not morally opposed to the death penalty categorically. In fact, after reading the details of the underlying episodes 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.

supplementarily concerned with innocence. Some believe that emphasis on execution of the innocent might get in the way of global abolition of the death penalty for the cases of the obviously (factually) guilty.[41] Many, however, will use innocence data as a tool, and to that end, they would like the innocence rate 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).[42] Real data moving 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, capital or non-capital) 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 factually innocent is not high enough or dramatic enough to engage the conscience of the average citizen, or of the average politician, or the average judge. 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.

V. THE FACTUAL ERROR RATE FOR CAPITAL RAPE-MURDERS IN THE 1980S: 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 convictions in the 1980s—the minimum figure has a strong claim to factual status, and the somewhat softer reasons for the upper limit seem pretty reasonable also. But can we generalize this rate (or rate range) 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 factual 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.[43]

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[41] *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).

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

[43] Marquis might have gone further and included misdemeanors in his denominator, and then claimed to have a factual wrongful conviction rate for all criminal convictions; he could even have used the population of the United States and established a factual wrongful

It seems likely to be quite common for people who begin pondering the question of wrongful conviction to ask themselves questions like, "What do you suppose the number of factually 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 factual wrongful conviction rate: first, we are unlikely to ever be able to derive it very specifically, and, second, it would not 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 1980s can tell us about other crimes and other times: the universe of criminal convictions is almost certainly heavily substructured in regard to factual innocence rates.

In order to make clear what substructuring[44] 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

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conviction rate for Americans, but pushing the argument that far might have made its methodological weakness obvious even to Justice Scalia.

[44] The term "substructuring" comes from population genetics, and has gained its foothold in the legal arena as a result of its discussion regarding 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) (citations omitted).

distribution of factual innocence 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 encounter, you would rationally guess brown. However, if you happened to 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 technical 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.[45]

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 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% factual wrongful conviction rate in capital rape-murders in the 1980s to a general factual 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 in which the

[45] This insight may help to explain our suspicions of so-called "naked statistical proof," though humans seem to go overboard in the other direction and irrationally overvalue the illusory particularization of such things as eyewitness identification.

rate of factual innocence was higher, perhaps shockingly so, and it would seem incumbent upon us to develop more particularized information to discover those islands of trouble, rather than 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 regarding generalization of the capital rape-murder factual innocence rate established above to other crimes, and other times.[46]

First, in regard to other capital murder prosecutions resulting in the imposition of the death penalty, 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.[47] While this argument becomes weaker as the conviction sets become more differentiated, it is fairly robust with regard to capital convictions generally, or at least those in which perpetrator identity is the main contestable issue.

Second, regarding non-homicide, pre-DNA rape cases (or at least the stranger-on-stranger cases that are most troubling with respect to wrongful identification analogous to rape-murder cases),[48] it is true that in such cases

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[46] In regard to time effects, obviously the factual wrongful innocence rate for capital rape-murders must certainly be lower today than in the 1980s, as a consequence of the availability of DNA evidence at trial in many (if not most) such 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 generally applicable might be that DNA exonerations could have given rise to more skepticism and care on the part of juries. However, there is no good evidence of this to date.

[47] Richard A. Rosen, *Innocence and Death*, 82 N.C. L. REV. 61, 69-70 (2003).

[48] 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 established through DNA. One should also note here that this article assumes that virtually all capital punishment cases will involve murder. This statement is true practically and likely to remain so. No person in the United States has been executed for rape, or for any crime not involving murder, since 1964. *See* Capital Punishment—Wikipedia, http://en.wikipedia.org/wiki/Capital_punishment (last visited Apr. 10, 2007) (tabulating last executions by charge). In addition, capital punishment for any rape is constitutionally suspect under *Coker v. Georgia*, 433 U.S. 584 (1978). However, a number of jurisdictions, including Louisiana, Florida, Montana, South Carolina, and Oklahoma, have recently passed statutes providing for capital punishment of repeat child sexual offenders. *See* Haider Rizvi, *U.S. States Widen Scope for Executions*, Aug. 29, 2006, *available at* http://www.commondreams.org/headlines06/0829-04.htm. Also, Louisiana provides for the

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 factual 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 suspect that the rate could be high, indeed, higher than the three or four percent innocence rate in the reference set under some conditions.[49] Fortunately, DNA technology has greatly reduced the problem in regard to stranger rapes (but not in regard to murders and other crimes heavily dependent on eyewitness identification).

This brings us to those non-capitally sentenced murders wherein the main issue is perpetrator identity. If the factual wrongful conviction rate in capital non-rape murders seems likely to be about the same as in capital rape-murders, can we generalize this rate to analogous non-capital murders?

The first question we must address is, what do we mean by "analogous" non-capital murders? Just as we limited the set of rapes for which there was a strong argument for extension to "stranger rapes," similar considerations call for limiting the set of murders for which extension seems strongly justified to those manifesting particular callousness or brutality analogous to capitally sentenced murders.[50] We can hope, at least, that capitally sentenced cases would be the cases in which 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 this is the case, it seems reasonable to suspect that the factual innocence rate in other "analogous" murder cases might be at least as high, if not higher, than in

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death penalty in cases of the rape of a child under twelve. *See* Annaliese Flynn Fleming, *Louisiana's Newest Capital Crime: The Death Penalty for Child Rape*, 89 J. CRIM. L. & CRIMINOLOGY 717, 717 (1999). Currently, there is one person (Patrick Kennedy) on Louisiana's death row as the result of such a conviction. His appeal is pending. *See* Haider Rizvi, *Death Penalty Being Invoked Against Child Molesters,* LA. WKLY., Sept. 11, 2006, *available at* http://www.louisianaweekly.com/weekly/news/articlegate.pl?20060911n. Finally, it must be noted that capital punishment is available constitutionally in cases of treason, and given the circumstances of the modern world, there is the distinct possibility that this use might re-emerge as a practical reality in the future.

[49] As discussed *supra* note 19, SCHECK ET AL., *supra* note 12, and Saks & Koehler, *supra* note 19, establish that erroneous eyewitness identification is the leading factor accounting for factually wrongful convictions in the DNA exoneration set.

[50] There are many reasons why such cases might present the same kind of nastiness as the typical capitally sentenced murder but still not result in a capital sentence. Defendants may have been capitally charged but pled down; they may have been capitally charged but the jury may not have imposed the death sentence, perhaps influenced by residual doubt; they may not have been capitally charged because of weak evidence, or the age of the defendants, or the scruples of the individual prosecutor. Finally, they may have occurred in one of the twelve states without the death penalty.

capitally sentenced cases. On the other hand, capital juries are "death-qualified," which may give them a lower decision threshold on the issue of guilt.[51]

In addition, many more of the non-capital murder convictions are the result of pleas. Pleas would, perhaps, be expected to represent fewer unsafe convictions than verdicts—except that many non-capital murder convictions are obtained through guilty pleas negotiated in the shadow of a potential death sentence, a reality which, to some degree, could be expected to undermine the reliability of these pleas.[52] We also know that some of these pleas took place in cases later resulting in exoneration by DNA.[53] All in all, there seems to be no good reason for believing that the factual innocence rate for non-capitally sentenced murder convictions properly "analogous" to capital murder, when the central issue is the identity of the defendant as the perpetrator, are substantially lower than the capital rape-murder innocence rate in the 1980s established earlier in this article. It would seem incumbent on those who claim otherwise to proffer substantial particular reasons for the claimed differences, rather than simply invoking general problems of extension and external validity.[54]

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[51] *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 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). *See generally* Hovey v. Superior Court, 616 P.2d 1301, 1315-41 (Cal. 1980) and studies cited therein. 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.

Lockhart, 476 U.S. at 173. It should be remembered that many convictions for murder that did not result in a capital sentence were the result of guilt findings by death-qualified juries. *See supra* note 13.

[52] One argument for the abolition of capital punishment is to end such extreme counter-accuracy pressures in regard to plea bargains in murder cases.

[53] John Dixon of New Jersey, for example, was exonerated of rape by DNA analysis after a guilty plea. The Innocence Project—Know the Cases: Browse Profiles: John Dixon, http://www.innocenceproject.org/Content/86.php (last visited Apr. 11, 2007).

[54] 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, 474-97 (1996). Most of these pressures would seem applicable to many non-capital murders and stranger rapes. Let us just say that I remain agnostic.

What is true for capital cases in general and for non-capital "analogous" murders, 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) might be at least as high, while the rate for white collar crimes may be much lower. But without more study, we cannot really know for sure.[55]

VI. WHY SHOULD WE CARE ABOUT FACTUALLY WRONGFUL CONVICTIONS, AND WHAT (IF ANYTHING) ARE WE MORALLY OBLIGED TO DO ABOUT THEM?[56]

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

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[55] There are two further particular subsets of convictions which call for special note. The first subset is comprised of relatively petty cases of street crime where the defendant cannot make bail and is finally offered a plea to time served. My colleague and sometime co-author, Mark Denbeaux, argues, based on his years of experience, that this may be the set with the highest factual innocence rate, given that such cases present overwhelming temptations for the innocent to plead guilty, and that such offers are often made primarily in cases that are factually weak to begin with. A second related set of convictions involves possession of contraband (usually drugs), particularly those convictions based on constructive possession. In such circumstances, there is potentially a very high factual innocence rate, but the conditions giving rise to the rate established in this article are too unrelated to draw even tentative conclusions from them.

[56] While I have not tried to hide my own Romillist bent, to this point this Article has been primarily concerned with facts of the world. We are about to take a normative turn in which I will freely indulge in morality talk, and this footnote is my apologia for doing so. It is currently fashionable in certain quarters to assert that moral claims are themselves of no value to the resolution of controversies about what the content of the law should be. The most extreme of these claims come from pure moral relativists like Richard Posner. *See* RICHARD A. POSNER, THE PROBLEMATICS OF MORAL AND LEGAL THEORY (1999). In this book Posner makes it clear, true to his intellectual roots in neo-classical economics (though he packages it as pragmatism, *id.* at 14), that he believes that there is no tenable theory of moral obligation that can resolve any contested issue of value. *Id.* at 20, 28. For him, all normative judgment is purely personal, emotional preference based on "aesthetic" responses like "disgust." *Id.* at 11, 20 (though he is at some pains to say that this does not make him a radical "moral skeptic," *id.* at 8). His defense of this position is clear, spirited and in some ways refreshing, but it seems to me that such moral relativism is as fruitless (for want of a better term) as the corresponding embrace of radical skepticism in epistemology. Posner does admit that new facts can sometimes change positions on moral obligation, even if the underlying moral theories are mere preferences. *Id.* at 23. At any rate, for those of such a moral relativistic belief, the text assertions can be viewed as appeals to their aesthetic preferences, if not their moral sense. (For a more extended critique of Posner's *Problematics*, see John Mikhail, *Law, Science and Morality: A Review of Richard Posner's* The Problematics of Moral and Legal Theory, 54 STAN. L. REV. 1057 (2002).)

On the one hand, simply formulating this question seems callous. On the other hand, definitive answers are elusive.[57] 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 would think we could 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 (myself 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, whether by parents, by teachers, or by others in authority, the injustice is usually 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 that of all those around them who believe the convicted were in fact innocent.

Nevertheless, it would be wrong to equate the injustice of every factually wrongful conviction with every other. There is no doubt that

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[57] 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. *See also* Daniel R. Williams, *The Futile Debate Over the Morality of the Death Penalty: A Critical Commentary on the Steiker and Sunstein-Vermuele Debate,* 10 LEWIS & CLARK L. REV. 625 (2006) (criticizing both the consequentialist positions taken in Cass R. Sunstein & Adrian Vermeule, *Is Capital Punishment Morally Required? Acts, Omissions, and Life-Life Tradeoffs,* 58 STAN. L. REV. 703 (2005) and the deontological positions taken in Carol S. Steiker, *No, Capital Punishment Is Not Morally Required: Deterrence, Deontology, and the Death Penalty,* 58 STAN. L. REV. 751 (2005)).

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, and generally correct, 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 emphasis on death being different 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.

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 needed. 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 with regard to some kinds of petty crime were to be high enough,[58] 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 position would require convicting no one, since we live in a world of

[58] Consider the potential social effects of pleas to time served for a variety of minor offenses when defendants cannot make bail, discussed *supra* note 55, under the assumption that this set of convictions is particularly rich in factually innocent defendants.

probabilities and imperfect knowledge.[59] 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 the definition of "functional," and the costs that attach to this conception of functionality.[60]

Here the Blackstone ratio, or some version of it, comes into play. You will recall that the Blackstone ratio is the name for Blackstone's version of the moral assertion "it is better that ___ guilty men go free than that one innocent person be convicted."[61] 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.[62] 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. This ratio 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 so 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 were 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 1980s, generalized to the entire prison population, would be shockingly high in the eyes of many. After all, there is nothing inherent in 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 before arrival at its destination, no one would regard this statistic as an indicator of the success of commercial aviation (nor would most people elect to fly).[63]

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 may have to be heavily

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[59] *See* Lillquist, *supra* note 13, at 62-63 (demonstrating in the context of the death penalty that this conclusion necessarily follows).

[60] *Id.*

[61] *See supra* note 3.

[62] *See generally* Volokh, *supra* note 3.

[63] *See* SCHECK ET AL., *supra* note 12, at xvii (noting a similar point made by New York lawyer Kevin Doyle).

qualified by context and circumstance, even if some of us might wish this were not so. Consider honestly your responses to the following[64]:

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 cocaine with intent to distribute; receiving stolen goods; mugging). The sentences range from two to five years.

2. Of those thousand convicted men, thirty-three are factually innocent of the crime for which they were convicted (by either trial or plea).

3. Of those thirty-three 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 would not become too upset by these results. Maybe they should, but they won't.

HYPOTHETICAL B

Next, consider this variant:

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

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[64] What I am setting out here is, of course, an exercise using the method of the response hypothetical. The response hypothetical, in the form of the ethical dilemma hypothetical, has been a method for the elaboration of moral positions time out of mind. Such hypotheticals play an important part in Talmudic tradition, *see* ALBERT R. JONSEN & STEPHEN TOULMIN, THE ABUSE OF CASUISTRY 56-57 (1988), and in the development of casuistry in the Roman Catholic tradition and its associated methods for approaching such dilemmas, such as the principle of double effect. *Id.* at 10-12. Sets of such hypotheticals have also been used in the empirical study of the stage-wise development of forms of moral reasoning across cultures. *See generally* LAWRENCE KOHLBERG, THE PSYCHOLOGY OF MORAL DEVELOPMENT (1984) (describing a cross-cultural program of research using such hypotheticals). The initial purpose of my hypotheticals is much more primitive. I am here merely attempting to provide the reader with hypotheticals informed by a factual innocence rate of the magnitude established by this article in regard to capital rape-murders in the 1980s, so that the reader can gauge the strength of his or her own intuitive moral responses (if any) in light of such rates. Consideration of what duties or policies may be implied (if any) will be put off for later. (Note that the emotional response sought through the structure used in the hypotheticals is not the sort of raw emotion elicited by the details of individual cases of innocence convicted, or by such literary *tours de force* as Shirley Jackson's classic short story "The Lottery." Rather, it is the cooler emotional exercise of moral reflection that used to be referred to as "examining one's conscience.")

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 this hypothetical is not so unrealistic.[65] I suspect that your evaluation of the intensity of the injustice is affected by whether or not, to use one of Joshua Marquis's favorite phrases, you are dealing with "doe-eyed innocents."[66] Whether it *should* be is a different question.

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-three are factually innocent.

Your reaction? Though the punishments are not severe as 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, having been charged with capital crimes, have been spared the death sentence and sentenced to twenty-five years to life.

2. Of those, thirty-three 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, by inaccurate eyewitness identifications, of a very bad crime unlike anything they had ever actually done).

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[65] *See* Edward J. Maggio, *New York's Rockefeller Drug Laws, Then and Now*, 78 N.Y. ST. B. J. 30, 31-32 (2006) (explaining the criteria of mandatory sentencing and its effects under New York's drug laws).

[66] 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* Testimony of Hon. Joshua K. Marquis Before the United States House of Representatives Judiciary Committee Subcommittee on Crime and Terrorism (June 30, 2005), *available at* http://judiciary.house.gov/media/pdfs/marquis063005.pdf.

Your reaction? Here I believe that one's feeling of discomfort and injustice should be intensified by the disgrace of the conviction and the fact that, although in some sense thirty of the thirty-three prisoners are not "doe-eyed innocents," the wrongful convictions are different and much more severe in kind and degree from their previous convictions. The three "doe-eyed innocents" just make matters that much worse.

HYPOTHETICAL E

1. There are a thousand persons on death row.

2. Of those, thirty-three are factually innocent of the crime for which they were sentenced to death.

Your response? According to the data, as demonstrated in this Article, this hypothetical *is almost certainly close to the case in regard to the current occupants of present death rows in the United States.*[67]

There are, of course, other variants we could consider, and I do not propose to suggest any particular failure threshold at which 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.*[68]

And here is where I believe the moral rubber meets the road for every citizen, and especially every police officer, prosecutor, judge, or legislator. Even if we might not be horrified at a 3.3% factual wrongful conviction rate in the abstract, I believe we would all admit that if we could identify the wrongfully convicted cost-free, we would be morally obliged to release

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[67] Actually, the death row population as of October 2006 was 3344. *See* Death Penalty Information Center, Death Row Inmates by State and Size of Death Row by Year, http://www.deathpenaltyinfo.org/article.php?scid=9&did=188. At 3.3%, the number of factually innocent currently on death row currently would therefore be 111.

[68] This is similar to Jerome and Barbara Frank's observation regarding 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). For a similar argument that alternatives must always be foregrounded in moral reasoning concerning the death penalty, see Williams, *supra* note 57, at 23-24.

them.[69] And if there were reforms that could be made to the system that would better filter out the innocent initially, 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 in which thirty-three 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-three accurately, we would be morally obliged to release them. And, more importantly, I take it this would be true if the numbers were thirty-three out of a hundred thousand, even though the general performance of the system *en gross* would probably strike one as very good. Thus, even if the Scalia/Marquis rate were true (which it is not), it would not necessarily or properly let us off the moral hook.

Now assume that we cannot identify the 33 exactly, but we know of a criterion that can be applied (call it the "unsafe verdict" criterion[70]) which would fairly certainly allow us to release 30 of the 33 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 ensure the release of 30 of

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[69] Here, of course, is the transition between eliciting responses and claiming that the facts and their associated responses suggest certain moral obligations. These suggestions do not assume that the reader is a consequentialist, a deontologist, or a pragmatic mix. Under virtually any approach to morality except one based on pure revelation, moral positions must be informed by human reality, and hence reasoning in the light of facts. *See* Williams, *supra* note 57, at 6-9.

[70] *See* Risinger, *supra* note 2, at 1313-16, 1331-33 (explaining the need for such an "unsafe verdict" standard of review and how it would operate).

the 33 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 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 will 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 utilizing 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 these effects become apparent in the implementation. 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 arguably fit the above criteria. Some of these proposals, indeed, would seem to be what one might refer to as cost-free proposals,[71] presenting no risk of losing any defensible convictions of the guilty. The best examples, to my mind, are the calls for blind testing protocols in forensic science practice,[72] and for similar

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[71] I am tempted to call such proposals "chicken soup" proposals, after the ancient Borscht Belt joke: 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."

[72] The desirability of masking (blind testing) protocols in forensic science practice appears to have first come up in the literature in the mid to late 1980s, though some arguments to that effect had been made in litigation contexts some years earlier. *See* D. Michael Risinger, Mark P. Denbeaux & Michael J. Saks, *Exorcism of Ignorance as a Proxy*

masking procedures in the administration of line-ups and photo-spreads.[73]

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for Rational Knowledge: The Lessons of Handwriting Identification "Expertise," 137 U. PA. L. REV. 731, 775-77 nn.196-98 (1989); *see also* Larry S. Miller, *Procedural Bias in Forensic Examinations of Human Hair*, 11 LAW & HUM. BEHAV. 157 (1987) (establishing the existence of context effects in the exercise of forensic science expertise). These calls had no impact whatsoever on forensic science practices. Then, in 2002, an extensive examination of the problem, with specific recommendations, was published. *See* D. Michael Risinger, Michael J. Saks, William C. Thompson & Robert Rosenthal, *The* Daubert/Kumho *Implications of Observer Effects in Forensic Science: Hidden Problems of Expectation and Suggestion*, 90 CAL. L. REV. 1 (2002) [hereinafter Risinger et al., *Observer Effects*]. Since the publication of that article, various influential forensic science organizations have shown some interest in the problem. For instance, it was the subject of a presentation to the plenary session of the American Academy of Forensic Sciences in 2004, to the newly formed Committee on the Needs of Forensic Science of the National Academy of Sciences in January 2007, and to a program sponsored by the American Society of Crime Laboratory Directors Laboratory Accreditation Board in February 2007. Nevertheless, to date, no forensic science discipline and no forensic laboratory in the United States has adopted any form of required masking in the performance of its tests.

[73] The desirability of having all identification procedures administered by persons not themselves aware of who the suspect in the photo array or corporeal line-up is (thus rendering the procedure "double-blind," since neither the witness nor the administrator knows the target) seems to have been first raised in the legal literature in Jack B. Weinstein, 81 COLUM. L. REV. 441, 444 (1980) (reviewing ELIZABETH LOFTUS, EYEWITNESS TESTIMONY (1979)). Interestingly, Dr. Loftus did not discuss the issue specifically in the section on identification procedures in the book under review, though Judge Weinstein made it clear that such a masking protocol was then being used in England, at least for corporeal line-ups. Calls in the United States for double-blind identification procedures, as a part of a constellation of suggestions for improved eyewitness identification procedures, were put forth by a variety of experimental psychologists working on eyewitness identification problems. *See, e.g.*, Gary L. Wells et al., *Recommendations for Properly Conducted Lineup Identification Tasks*, *in* ADULT EYEWITNESS TESTIMONY: CURRENT TRENDS AND DEVELOPMENTS 223 (David F. Ross et al. eds., 1994). Perhaps the most notable is Gary Wells, who, through his placing of special attention on what he called "system variables" (variables that can be controlled by redesign of the procedures used for identification), seems to have been most responsible for the realization that trying to correct for inaccurate identifications at trial was by far the second best strategy, and that it is much better to foster more accurate identification initially through better designed processes. *See* Gary L. Wells, *Applied Eyewitness-Testimony Research: System Variables and Estimator Variables*, 36 J. PERSONALITY & SOC. PSYCHOL. 1546, 1548 (1978). These various suggestions resulted in the promulgation of recommendations for improved eyewitness identification procedures issued by the United States Department of Justice in 1999. *See* TECHNICAL WORKING GROUP FOR EYEWITNESS EVIDENCE, UNITED STATES DEPARTMENT OF JUSTICE, EYEWITNESS EVIDENCE: A GUIDE FOR LAW ENFORCEMENT (1999), among which was the double-blind administration of both photo spreads and corporeal line-ups. To date, only a limited number of jurisdictions have adopted those recommendations, in part because in most jurisdictions, local control prevents system-wide change absent a statute. New Jersey, where the attorney general has statewide supervisory power, adopted the recommendations in 2001. *See* Gina Kalata & Iver Peterson, *New Way to Insure Eyewitnesses Can Identify the Right Bad Guy*, N.Y. TIMES, July 21, 2001, at A1. North Carolina and Wisconsin have commissions that have adopted the recommendations, but their authority over local procedures is merely

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.[74] Yet the

advisory (although a significant number of local jurisdictions are cooperating). *See* Gary L. Wells, *Eyewitness Identification: Systemic Reforms*, 2006 WIS. L. REV. 615, 641-42 (2006) [hereinafter Wells, *Systemic Reforms*]. A few important local jurisdictions in other states have adopted the guidelines, including Hennepin County and the Minneapolis Police Department and Northampton, Massachusetts. *Id.* at 642-43. But given the fact that there are more than 13,000 separate police jurisdictions in the United States, the vast majority of which are autonomous in regard to such procedures, *id.* at 634, the departments adopting the guidelines represent a tiny percentage of all police departments. Finally, it should be kept in mind that double-blind administration of identification procedures is a reform that can be undertaken without adopting any of the Attorney General's other recommendations. Unlike, say, sequential presentation of subjects, *see* Gary L. Wells & Elizabeth A. Olson, *Eyewitness Testimony*, 54 ANN. REV. OF PSYCHOL. 277, 289 (2003), its efficacy is not dependent on the adoption of any other procedure. Nevertheless, it still has not been widely adopted.

[74] There appear to be no tenable substantive counter-arguments on theoretical grounds. *See* Risinger et al., *Observer Effects, supra* note 72, at 27-30, 47 and accompanying text. In sum, this lack of counter-argument is because the claims being made for the informational result of the process (forensic science or eyewitness identification) are that the information is derived from the special knowledge of the witness acting upon the stimulus (bitemark, fingerprint, human appearance). To the extent the results differ because of the impact of extraneous influences, what is claimed for the information is no longer true. Think of a bitemark expert who always insisted on knowing the results of DNA testing on saliva from the bite before giving a conclusion concerning whether a suspect's teeth matched bitemarks on a victim's skin. The bitemark expert's results would then always match the DNA results. The bitemark examiner might be said to be virtually always right, but not as the result of any claimed bitemark identification expertise. One can rationally argue that the marginal effect of contaminating information is too small to care about (though mountains of overwhelmingly consistent information suggests the contrary in most circumstances), but not that any changed results are made epistemically better and not worse by such domain-irrelevant information. All that is left after such a distorting process is the mere appearance of information, or a "dramaturgic" value useful in winning but not in rational fact reconstruction. *See* Richard Lempert, *Some Caveats Concerning DNA as Criminal Identification Evidence: With Thanks to the Reverend Bayes*, 13 CARDOZO L. REV. 303, 331-34 (1991) (distinguishing epistemic from dramaturgic uses of evidence); *see also* Risinger, *supra* note 3, at 431-46 (discussing the adversary right to use irrelevant information for purposes of drama, and its limits). Note that the absence of rational counterarguments regarding masking protocols in general does not necessarily mean that it is always easy (though it often is) to distinguish domain-relevant from domain-irrelevant information in forensic science practice, and to resolve issues concerning the most truth-conducive order in which to present domain relevant information in a properly masked process. *See* Risinger et al., *Observer Effects, supra* note 72, at 45-47. None of these difficulties apply to the eyewitness identification situation. *See* Wells, *Systemic Reforms*, *supra* note 73, at 629-30 (describing purposes of such general masking in eyewitness identification situations). The only facially tenable arguments in regard to double-blind eyewitness identification procedures appear to involve logistical objections, such as the objection that for limited parts of an inquiry (those involving the administration of the identification procedures), a second person other than the case detective would have to be utilized. *See* SHERI H. MECKLENBERG,

calls for the former reforms have fallen on deaf ears,[75] and for the latter reforms have been met by adoption in but a small number of jurisdictions,[76] and stiff resistance in the majority[77] (even though the experiences in adopting jurisdictions confirm the workability of such blind identification procedures[78]).

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, in my opinion, a remarkable catalogue of them.[79] Only the inertia or hostility of the main players in our criminal justice system has prevented such proposals from being seriously considered and widely implemented. Perhaps faced with hard numbers, and a reground moral lens, they can be persuaded to approach such reforms more positively.

VII. 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 capital rape-murders in the 1980s 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

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REPORT TO THE LEGISLATURE OF THE STATE OF ILLINOIS: THE ILLINOIS PILOT PROGRAM ON SEQUENTIAL DOUBLE-BLIND IDENTIFICATION PROCEDURES 57-61 (2006). (It should be noted that the design of this study was so amateurishly confounded that it raises serious questions about what the designers were actually trying to do. *See* Gary L. Wells, *Comments on the Mecklenberg Report, available at* http://www.psychology.iastate.edu/faculty/gwells/Illinois_Project_Wells_comments.pdf.) Extended examination of each logistical objection asserted in the Mecklenberg report is beyond the scope of this Article, but in general it is enough to say that, in all but the tiniest police departments, these objections would generally appear to be make-weights, rather than considerations of sufficient real weight to justify continuing to use the suggestive procedures that constitute current business as usual.

[75] I make this statement with the caveat that there may now be some preliminary signs of progress. *See supra* note 72 and accompanying text.

[76] *See supra* note 73 and accompanying text.

[77] *See* Wells, *Systemic Reforms*, *supra* note 73, at 632-35 (eyewitness procedures); Risinger et al., *Observer Effects*, *supra* note 72, at 50-52 (forensic science practice).

[78] *See* Wells, *Systemic Reforms*, *supra* note 73, at 642-43.

[79] *See, e.g.*, Givelber, *supra* note 2, at 1378-96; *see also* Findley & Scott, *supra* note 6, at 354-96; Risinger, *supra* note 2, at 1311-16 (proposing more structural changes); Michael J. Saks et al., *The Model Prevention and Remedy of Erroneous Convictions Act*, 33 ARIZ. ST. L.J. 665 (2001); Michael J. Saks et al., *Toward a Model Act for the Prevention and Remedy of Erroneous Convictions*, 35 NEW ENG. L. REV. 669 (2001).

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.

Appendix 1

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

1. Adams, Sylvester Lewis
2. Albanese, Charles
3. Alderman, Jack
4. Allridge, Ronald Keith
5. Anderson, Johnny Ray
6. Anderson, Larry Norman RM
7. Andrade, Richard RM
8. Andrews, Maurice
9. Antwine, Calvert Leon
10. Atkins, Phillip Alexander RM
11. Bannister, Alan Jeffery
12. Baxter, Norman Darnell
13. Beam, Albert Ray RM
14. Bell, Walter Jr. RM
15. Bennet, Baby Ray
16. Bertolotti, Anthony
17. Black, Robert V. Jr.
18. Blanco, Omar
19. Blanks, Kennith RM
20. Boggs, Richard T.
21. Brecheen, Robert A.
22. Brogdon, John E. RM
23. Bunch, Timothy Dale
24. Burden, Jimmie Jr.
25. Bush, John Earl
26. Buxton, Lawrence Lee
27. Byrd, Maurice Oscar
28. Byrne, Edward R. Jr.
29. Callins, Bruce Edwin
30. Campbell, Charles R.
31. Cantu, Ruben
32. Card, James Armando
33. Carriger, Paris Hoyt
34. Cave, Alphonso
35. Celestine, Willie Lawrence RM
36. Chambers, James Wilson
37. Clanton, Earl Jr.
38. Clark, David Michael
39. Clark, Herman Robert Charles Jr.
40. Clisby, Willie Jr.
41. Clozza, Albert J. RM
42. Cochran, James Willie
43. Coleman, Roger Keith RM
44. Cordova, George RM
45. Cordova, Jose Angel
46. Coulter, David Leroy
47. Crank, Denton Alan
48. Creech, Thomas Eugene
49. Cuevas, Ignacio
50. Davis, James Carl Lee RM
51. Davis, John Michael
52. DeLuna, Carlos
53. DeMouchette, James
54. Deputy, Andre Stanley
55. Derrick, Mikel James
56. Deshields, Kenneth Wesley
57. Devier, Darrell Gene RM
58. Dobard, Percy Leo
59. Doyle, Daniel Lee
60. Drew, Robert N.
61. Duest, Lloyd
62. Dufour, Donald William
63. Dunkins, Horace Franklin Jr. RM
64. Edmonds, Dana Ray
65. Ellis, Edward Anthony
66. Eutzy, William
67. Fairchild, Barry Lee RM
68. Flowers, James RM

69. Foster, Emmitt
70. Franklin, Donald Gene
71. Fugitt, John Thomas
72. Gardner, Billy Conn
73. Gardner, John Sterling
74. Garrett, Johnny Frank RM
75. Gaskins, Donald Henry
76. Gilmore, George Clifton
77. Glass, Jimmy L.
78. Gore, David Alan RM
79. Grubbs, Ricky Lee
80. Guinan, Frank J.
81. Hamblen, James William
82. Hance, William Henry
83. Harding, Donald Eugene
84. Harich, Roy Allen RM
85. Harris, Benjamin James III
86. Harris, Curtis Paul
87. Harris, Danny Ray
88. Henderson, Robert Dale
89. Henderson, Wilburn Anthony
90. Herrera, Leonel Torres
91. Hill, Steven Douglas
92. Holland, David Lee
93. Huffstetler, David Earl
94. Ingram, Nicholas Lee
95. Jacobs, Jesse Dewayne
96. James, Johnny RM
97. Johnson, Curtis Lee
98. Johnson, Elliott Rod
99. Johnston, David Eugene
100. Jones, Andrew Lee RM
101. Jones, Arthur Lee
102. Jones, Willie Leroy
103. Julius, Arthur James RM
104. Kenley, Kenneth Lee
105. Kight, Charles
106. Kinnamon, Raymond Carl
107. Kirkpatrick, Frederick
108. Knox, James Roy
109. Kwan Fai Mak
110. Kyles, Curtis L.
111. Lackey, Clarence Allen RM
112. Lafferty, Ronald Watson
113. Landry, Raymond
114. Lane, Harold Joe
115. Lashley, Frederick
116. Lincecum, Kavin Wayne RM
117. Lindsey, Michael
118. Lowenfield, Leslie
119. Loyd, Alvin Scott RM
120. Macias, Federico Martinez
121. Madden, Robert
122. Mann, Fletcher Thomas RM
123. Mann, Larry Eugene RM
124. Marquez, Mario RM
125. Martin, Nollie Lee
126. Mathenia, Charles Lee
127. May, Justin Lee
128. Mayo, Randy Dale RM
129. Mays, Noble D.
130. McCoy, Stephen Albert RM
131. Montoya, Ramon
132. Motley, Jeffery Dean
133. Murray, Robert Anthony
134. Neuschafer, Jimmy
135. Nevius, Thomas RM
136. Nichols, Joseph Bernard
137. O'Neal, Robert
138. Osborn, Kevin Winston RM
139. Otey, Harold Lamont RM
140. Palmer, Charles Jess
141. Paradis, Donald M.
142. Parker, Robert Lacey
143. Paster, James Emery RM
144. Peterson, Derick Lynn
145. Phillips, Clifford X.
146. Pickens, Edward Charles

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

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.

1. Adams, Thomas Mark
2. Allen, Clarence Ray
3. Allen, Timothy Lanier
4. Alvin, Eddie Eugene
5. Amaya-Ruiz, Jose Jacobo
6. Amrine, Joseph
7. Anderson, Richard Harold
8. Aragon, Mark Emilio
9. Ashford, James B.
10. Atkins, Phillip A.* RM
11. Bacon, Robert Jr.
12. Barnes, Elwell
13. Barnett, Larry Floyd
14. Bean, Harold
15. Beaver, Gregory Warren
16. Berry, Earl Wesley
17. Beuke, Michael
18. Billa, LouisRM
19. Black, Robert V. Jr.*
20. Boggs, John Edward
21. Bounds, FrankRM
22. Bowers, Marselle Jerome RM
23. Boyd, Charles Anthony RM
24. Boyde, Richard
25. Bradley, Danny Joe RM
26. Briddle, James M.
27. Brisbon, Henry
28. Broaddrick, Thomas Elmer
29. Brown, Jesse Keith
30. Brown, John G.
31. Brown, Morris
32. Brown, Willie A.
33. Browning, Paul Lewis
34. Brownlee, Virgil Lee
35. Buell, Robert A. RM
36. Cabello, Frank J.
37. Cam Ly
38. Campbell, Kenneth Wayne
39. Canaan, Keith B.
40. Carter, Antonio M.
41. Carter, Lincoln L.
42. Celestine, Willie Lawrence* RM
43. Chaffee, Jonathan RM
44. Champion, Steve Allen
45. Cherry, Roger Lee
46. Chester, Frank
47. Clayton, Willie
48. Cochran, James Willie*
49. Cockrum, John
50. Combs, Ronald Dean
51. Comeaux, Adam RM
52. Comer, Robert Charles
53. Compton, Joel Lee
54. Cooper, Kamathene A.
55. Copenhefer, David C.
56. Correll, Michael Emerson
57. Cosby, Teddy Lee
58. Crittenden, Steven Edward
59. Cruse, William Bryan Jr.
60. Davis, James Carl Lee* RM
61. Davis, Steven Raymond
62. Deaton, Jason Thomas
63. DeLong, Wayne Kenneth
64. Diddlemeyer, Gerald Michael

65. Dufour, Donald William
66. Dyer, Alfred
67. East, Wayne
68. Eaton, Winthrop Earl RM
69. Edwards, Richard Lee
70. Elmore, Edward Lee
71. Eperson, Roger Dale
72. Evans, Johnnie Lee RM
73. Ferall, Dallas RM
74. Ferguson, John Erroll RM
75. Ford, Pernell
76. Foster, Lafonda Fay
77. Franklin, Donald Gene* RM
78. Frazier, Richard
79. Fuller, John F.
80. Gallego, Gerald Armond RM
81. Garceau, Robert Frederick
82. Garcia, Enrique
83. Gardner, Mark Edward RM
84. Garrett, Daniel Ryan
85. Gilmore, George C.*
86. Green, Alphonso
87. Griffin, Milton
88. Hain, Scott Allen
89. Hamm, Doyle Lee
90. Harris, James
91. Hatcher, Ricky Dane
92. Hawkins, Don Wilson RM
93. Hensley, Robert
94. Hernandez, Alejandro RM
95. Herrera, Mickel William
96. Herrera, William Diaz
97. Hightower, Bobby Ray
98. Hinchey, John Albert
99. Hodge, Benny Lee
100. Hodges, George M.
101. Hoke, Ronald LeeRM
102. Holloway, Allen Earl
103. Hooker, John Michael
104. Howell, Michael Wayne
105. Huffman, Richard
106. Hunt, Henry Lee
107. Jacobs, Jesse Dewayne*
108. Jennings, Bryan F.RM
109. Jimenez, Jesus Rodriguez
110. Johnson, Bobby Ray Jr. RM
111. Johnson, Caesar Lamont
112. Johnson, James Willis
113. Johnson, Mitchell
114. Johnson, Ricky Lee
115. Joyner, Richard Wayne
116. Kaurish, Jay Charles RM
117. Keeton, Perry
118. Kenley, Kenneth Lee*
119. Kennedy, Stuart S.
120. Lagrand, Karl Hinze
121. Lagrand, Walter Burnhart
122. Laird, Richard
123. Lee, Larry
124. Lindsey, Jack Russell
125. Long, David Martin
126. Long, Michael Edward
127. Lord, Thomas Russell
128. Loyd, Alvin Scott RM
129. Lucas, Harold Gene
130. Lucas, John W.
131. Lynn, Frederick
132. Mackall, Tony Albert
133. Madison, Vernon
134. Mahaffey, Jerry
135. Marquez, Howard C.
136. Marshall, Robert O.
137. Mathers, Jimmy Lee
138. Mattson, Michael Dee RM
139. May, Justin Lee*
140. McDonnell, Michael Martin
141. McDowell, Charles E. RM
142. Melock, Robert RM

143. Melton, James Andrew
144. Memro, Harold Ray RM
145. Messiah, Keith E.
146. Miller, David Earl RM
147. Milner, Lynn Bernard
148. Moon, Larry Eugene
149. Morgan, Derrick
150. Muhammad, Askari Abdullah
151. Murray, Robert Anthony*
152. Murry, Paul Edward
153. Nevius, Thomas* RM
154. Nicolaus, Robert Henry
155. O'Connell, Barry Gilbert
156. O'Shea, Ronald G.
157. Owen, Duane Eugene RM
158. Payne, Randy Joe RM
159. Peterkin, Otis
160. Petrocelli, Tracy
161. Poggi, Joseph Carlos RM
162. Powell, Tina Hickey
163. Quesinberry, Michael Ray
164. Ramseur, Thomas C.
165. Reilly, Michael Glenn Patrick RM
166. Riggins, David E.
167. Robinson, Fred Lawrence
168. Robinson, Timothy Alexander RM
169. Rogers, James Randall* RM
170. Rogers, Jerry Layne
171. Rose, James Franklin
172. Ross, Craig Anthony RM
173. Rouster, Gregory
174. Ruiz, Paul
175. Rupe, Mitchell
176. Ryan, Michael W.
177. Sanchez, Teddy Brian
178. Scire, Anthony
179. Simms, Darryl RM
180. Skaggs, David Leroy
181. Smith, Bernard
182. Smith, Clarence
183. Smith, David
184. Smith, Kenneth Eugene
185. Snow, John Oliver
186. Sosa, Pedro
187. Spencer, Timothy Wilson* RM
188. Spivey, Herbert Lander Jr.
189. Sterling, Gary
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.