

The Wrongful Conviction of Forensic Science

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November 3, 2008

This is a preprint of an article whose final and definitive form has been published in Forensic Science Policy & Management – An International Journal © 2009 by Taylor & Francis; Forensic Science Policy & Management is available online at [informaworld™](http://www.tandf.co.uk/journals/titles/19409044.asp) at <http://www.tandf.co.uk/journals/titles/19409044.asp>

ABSTRACT

The purpose of this study was to examine the accuracy of claims that faulty forensic science is a leading cause of wrongful convictions. This sentiment has been reported at length by major news outlets across the United States. It has also been a matter of great concern to a group of activists in what is known as the *innocence network* and other individuals having varying degrees of interest in the formulation of public policies related to forensic science.

To meet the objectives of this study, its authors reviewed past research and public information pertaining to the first 200 DNA exonerations that occurred between 1989 and 2007. The frequencies of systemic failures extracted from case profiles published by the *Innocence Project* were tabulated and analyzed with due consideration given to media reports that summarized individual cases. Authoritative texts were also consulted to help put the issue of wrongful convictions in proper context.

As a result of this study, forensic science malpractice, whether intentionally or accidentally committed, was shown to be a comparatively small risk to the criminal justice system – accounting statistically for less than 11% of all cases studied. As the authors will explain, the true percentage is likely much lower. But just as compelling were the number of wrongful convictions (18%) where forensic evidence reportedly favored the defendant.

In this regard, the available data strongly indicate that complaints about the overall quality of forensic science in American jurisprudence are mainly rhetorical in nature and are not based on valid statistical analyses of the role of forensic science in overturned convictions. While the profession of forensic science, like all critical professions, has a responsibility to continuously improve itself, its portrayal in the media as generally having an adverse impact on our criminal justice system is an injustice.

INTRODUCTION

Over 200 wrongful convictions have been identified and remedied in recent years through post-conviction litigation and DNA testing. Post-conviction litigation is the specialty of an organization called the *Innocence Project* in New York. Its affiliates and supporters comprise what is known as the *innocence network* - organizations and advocates dedicated to supporting convicted offenders whose innocence can be proven using modern DNA technology.

The exoneration of truly innocent people is clearly an act of social justice; however, high-profile public policy activists in the *innocence network* have expanded their message far beyond this core focus. Among their many recommendations for criminal justice reform is the establishment of state oversight commissions to “review the forensic methods that are accepted in state courtrooms and to investigate allegations of misconduct, negligence or error in labs.”¹ At first glance, this might seem reasonable. But a large and growing number of forensic science laboratories in the United States already subject themselves to rigorous scrutiny through accreditation and other quality-control safeguards that have only recently demonstrated their potential to monitor work practices and accuracy in the profession of forensic science. For each of these laboratories, the implications associated with a scientific community being governed by commissions prone to political wrangling and bureaucratic inefficiencies are quite troublesome.

For years, the *Innocence Project* has publicly condemned what it claims to be the frequent use of erroneous, fraudulent, or unreliable forensic evidence against defendants in criminal trials. No valid statistical studies had been completed to either support or refute this argument. Most research on the causes of wrongful convictions had been conducted by lawyers with little input or assistance from statistical experts or practitioners representing the forensic science community.

For example, a study published in the January 2008 issue of the *Columbia Law Review*, titled “Judging Innocence,” was authored by Brandon Garrett, an associate professor at the University of Virginia School of Law and an experienced post-conviction litigator who once served as an associate at Cochran, Neufeld & Scheck LLP in New York City. Peter Neufeld and Barry Scheck are the cofounders of the *Innocence Project* located in Manhattan.²

Professor Garrett and his team were the first to study the first 200 DNA exonerations that occurred between 1989 and 2007, documenting the types of evidence originally used against the defendants during their trials. Based on his research, Garrett argued in support of special commissions to prevent wrongful convictions. “[R]esearch suggests that procedures such as...oversight of forensic crime laboratories, could have prevented many such costly miscarriages...”³

The work of Professor Garrett gained the attention of some leaders in the forensic science community when it was learned that his study was presented before a special committee convened by the National Academy of Sciences in Washington, D.C. News reports from various sources, including the *New York Times*, attempted to summarize Garrett’s findings, which seemed to indicate that faulty forensic science may very well be a leading cause of wrongful convictions in the United States.

Forensic Science Oversight

Perhaps the most significant aspect of Professor Garrett’s work is the support it seemed to lend to nearly two decades of rhetoric emanating from within the innocence network, which continues to argue for the creation of state-sponsored commissions to oversee forensic science practitioners. To a large extent, the establishment of such commissions in various states is increasingly viewed as inevitable. But this observation grows clearer in light of the fact that many journalists from reputable news organizations, along with an increasing number of elected officials, have been hesitant to subject the claims of innocence activists to any considerable scrutiny.

The words of Professor Jon Gould, author of “The Innocence Commission,” seem to accurately summarize what should be the goal of any legitimate examination of the failures of our criminal justice system. “Our challenge, then, is to identify errors that occur in wrongful convictions and to do so in a manner that leaves observers confident that the research was done fairly, competently, and thoroughly. When possible, we also must identify those factors that specifically lead to erroneous convictions, but in reality we are likely dealing with a ‘perfect storm’ of errors that together have convicted...innocent [defendants].”⁴

THE BIRTH OF THE INNOCENCE MOVEMENT

The first serious academic examination of wrongful convictions in the United States was undertaken by Yale law professor Edwin Borchard “who offered two proposals that presaged future measures: courts should not introduce a defendant’s confession at trial until it is given before a magistrate and in the presence of witnesses, and independent investigative bodies should review wrongful convictions.”⁵

During the years following Borchard’s work, the modern innocence movement evolved quite slowly. But in 1976, the impetus for a more aggressive and sustained expansion of its influence came as the United States lifted its five-year moratorium on capital punishment. The silence of the moratorium ended with the controversial execution of Gary Gilmore on January 17, 1977 by firing squad in Utah.⁶ Other high-profile events related to America’s use of the death penalty continued to arouse activists through the end of the following decade. For example, in 1982, Charles Brooks became the first person to be executed by lethal injection.⁷ Two years later in 1984, Velma Barfield became the first woman to be executed since 1962 for the 1978 poisoning of her fiancé.⁸ From 1986 through 1989, several rulings by the United States Supreme Court addressed issues pertaining to the execution of young people and persons with mental disabilities.

The decade of the 1980s invited passionate debate and activism with regards to capital punishment. But it wasn't until 1989 that solidarity among the fiercest opponents of the death penalty was galvanized by an unforgettable confluence of events.

Death and Freedom

On January 24, 1989, about 200 people cheered outside the Florida State Prison in Starke, Florida as one of America's most infamous serial killers, Ted Bundy, was pronounced dead after being executed by electrocution.⁹ The highly publicized event dealt a heavy blow to death-penalty opponents. Little could be done to change the overwhelming public consensus that Bundy's horrific crimes served as a powerful example of why the death penalty, in some cases, should remain an option.

But their dejection was short lived. Seven months later on August 14, 1989 Gary Dotson became the first inmate to be exonerated as a result of new DNA technology. A short time later, David Vasquez was also exonerated after DNA evidence revealed his innocence. Dotson served 10 years in prison for aggravated kidnapping and rape. Vasquez served four years in prison for second-degree murder and burglary. Both men were incriminated, in part, by forensic evidence during their original trials.¹⁰

The fact that reliable scientific evidence such as DNA could objectively demonstrate the innocence of people who had been wrongfully convicted was an opportunity unlike any other. Until that time, death-penalty opponents were locked in a public-policy stalemate. Their passion, however intense and reasonable it may have been, could not adequately refute the legitimacy of equally compelling arguments that capital punishment was necessary for some convicted criminals, especially those as violent as Ted Bundy. But the prospect of innocent people being convicted of crimes that they did not commit was something that *no* reasonable person would tolerate. And if these miscarriages of justice could sufficiently deflate public confidence in the integrity of the American criminal justice system, the death penalty would eventually cease to exist as a viable public policy.

The Forensic Science Problem

Coincidentally, the earliest years of the innocence movement were accompanied by a concurrent growth in the public's fascination with forensic science. High profile criminal trials reinforced public appreciation for the value of science in the administration of justice. These trials included, among others, the 1991 rape trial of William Kennedy Smith in Palm Beach, Florida¹¹; the 1995 O.J. Simpson murder trial in Los Angeles, California;¹² and the 1997 sexual-assault trial of sportscaster, Marv Albert.¹³ Just as innocence activists were gaining ground in their mission to expose the most serious flaws in our criminal justice system, any public outrage they were able to ignite was pacified by the popular reputation enjoyed by forensic scientists in the United States. *The Discovery Channel* tapped into this public trust of forensic science when the hit series "The New Detectives: Case Studies in Forensic Science" premiered on October 1, 1996, one year after the O.J. Simpson verdict was read in Los Angeles.¹⁴ Simply put, the relatively new trend of routinely using science to support the administration of fair and impartial justice was largely interpreted by concerned citizens as being a source of optimism for the future of American jurisprudence.

It wasn't long, however, before the most determined activists in the innocence movement began a lengthy and persistent campaign to change public perceptions about forensic science.

THE CONVICTION OF FORENSIC SCIENCE

In 1992, shortly after the exonerations of Gary Dotson and David Vasquez, well-known criminal defense attorneys Barry Scheck and Peter Neufeld created the *Innocence Project*, "a national litigation and public policy organization dedicated to exonerating wrongfully convicted people through DNA testing and reforming the criminal justice system to prevent future injustice."¹⁵ As the influence of the *Innocence Project* expanded over the next sixteen years, the basic principles of its public policy agenda were advanced through statements that called into question the reliability and professionalism of forensic scientists in the United States.

To the advantage of many within the innocence network, these statements were rarely, if ever, subjected to any serious examination and were quick to appear as front page stories in major newspapers throughout the United States. With public enthusiasm for forensic science being so widespread, the notion that it could actually be contributing to the imprisonment of innocent citizens was a story too compelling to ignore.

In a 1996 *USA Today* cover story, authors Becky Beaupre and Peter Eisler wrote that “The standards for diagnosing strep throat are stricter than those applied to [forensic] evidence that could put a defendant on Death Row.” *Innocence Project* co-director, Peter Neufeld, used the opportunity to initiate what would become a two-decade rhetorical attack on the forensic sciences by arguing that the profession was incapable of self-governance. “There’s absolutely no reason that crime laboratories, which routinely make decisions that have life and death consequences for an accused person, should be less regulated than a clinical laboratory utilizing similar tests.”¹⁶

Similar sentiments about the reliability of forensic science were expressed in detail by a team of *Chicago Tribune* reporters who published a stinging series of investigative reports in 2004 that chronicled some of the cases being worked by the *Innocence Project*. The reports seemed to lure even the most educated and thoughtful readers into believing that forensic science laboratories were some of the most corrupt and incompetent organizations in the United States. The *Tribune* set the stage for its one-sided assault on forensic science in its first article published on October 17, 2004. “At the center of this upheaval is the advent of DNA testing, which has injected a dose of truth serum into other forensic tools,” argued *Tribune* reporters Flynn Roberts, Steve Mills, and Maurice Possley. “With its dramatic precision, DNA has helped reveal the shaky scientific foundations of everything from fingerprinting to firearm identification, from arson investigation to such exotic methods as bite-mark comparison.”¹⁷

On January 13, 2005, *CNN* aired “Can Crime Labs Be Trusted,” a probing investigative report that claimed to uncover profound weaknesses in how America’s crime laboratories were being operated. Among the pertinent points delivered by *CNN* was the supposed lack of oversight and accountability to ensure that work is conducted properly. Peter Neufeld was interviewed in the documentary. “Forensic science has gotten a free ride for the last 50 years, primarily because they made this bogus argument that [they] don’t need to be regulated.”¹⁸

Then, exactly three years after the *Chicago Tribune* series, the “shaky” scientific methods it brought to light became the subject of another television documentary, this time by *MSNBC*, titled “When Forensics Fail,” which showcased the troubling stories of innocent persons convicted and imprisoned of crimes that they likely did not commit.¹⁹ One of the cases was that of Ray Krone, who was convicted in 1992 for murder, kidnapping, and sexual assault based entirely on the forensic identification of a bite-mark. DNA collected from the bite-mark was eventually excluded as belonging to Krone.

On October 1, 2007, not long before *MSNBC* aired its documentary, the *New York Times* published a front-page story about the public-policy lessons of post-conviction litigation using DNA. In the article, Peter Neufeld argued that “The legislative reform movement as a result of these DNA exonerations is probably the single greatest criminal justice reform effort in the last 40 years.”²⁰

But what quickly attracted the attention of some in the forensic science community was not the article itself, but the fact that it appeared during the weeklong annual training symposium hosted by the American Society of Crime Laboratory Directors in Orlando, Florida.

Any suspicions that the timing of the aforementioned *Times* article was anything but a coincidence were nearly confirmed on February 19, 2008 when a similar front-page story about post-conviction DNA exonerations appeared in *USA Today* during the annual meeting of the American Academy of Forensic Sciences, one of the largest annual forensic science conventions in the world. A provocative comment by Peter Neufeld was included in this story as well.²¹

By the time Professor Brandon Garrett published the results of his research in “Judging Innocence,” the profession of forensic science had already been portrayed as a symbol of decline and incompetence within America’s criminal justice system and responsible for the imprisonment of innocent citizens. News outlets across the country reported what they perceived to be a compelling and disturbing story. Elected officials became more open to the idea that faulty forensic science was running rampant in U.S. courtrooms and might require legislative action and governmental oversight to prevent. Garrett’s work simply provided what seemed to be a long-awaited statistical validation of the claims being made by the *Innocence Project* and its supporters.

The National Academy of Sciences

Both Brandon Garrett and Peter Neufeld presented the “Judging Innocence” findings on September 20, 2007 to a special committee convened by the National Academy of Sciences in Washington, D.C., which was charged with the task of identifying the needs of the forensic science community. For the purposes of this study, a copy of their presentation was obtained from the National Academy of Sciences public records office.²² Of the 200 exonerations that Professor Garrett examined, he identified 113 cases (57%) where forensic evidence was presented against the defendant during the original trial.²³ According to Garrett, the major problem in wrongful convictions seems to be “improper and misleading testimony regarding comparisons conducted.”²⁴ Such testimony, he argues, tends to bolster questionable evidence that might otherwise have been dismissed as erroneous or unreliable in the eyes of the jury. Garrett and Neufeld went on to discuss the problem of misleading testimony. In the 113 cases involving the use of forensic evidence against a defendant, 57% of the cases in which trial transcripts were located involved what Garrett and Neufeld characterized as improper (but not intentionally so) scientific testimony. An additional seven cases were presented that they claimed to have been tainted by “known misconduct.”²⁵

The Verdict

In January 2008, the Senate Judiciary Committee convened a hearing to investigate the alleged failure of the Justice Department to enforce forensic-related provisions contained in a bipartisan legislative effort known as the *Justice for All Act of 2004*. Peter Neufeld testified on behalf of the *Innocence Project*:

“Together, misapplication of forensics and misplaced reliance on unreliable or unvalidated methodologies are **the second greatest contributors to wrongful convictions** [emphasis added]. Despite these demonstrated problems, independent and appropriately conducted investigations – which should be conducted when serious forensic negligence or misconduct may have transpired – have been exceedingly rare.”²⁶

The final verdict in the case against forensic science may have come from the United States Inspector General, Glenn A. Fine, during his own testimony before the Senate Judiciary Committee. In a statement as devastating as it was simple, Fine agreed that “Negligence and misconduct in forensic laboratories.... have led to wrongful convictions in several states.”²⁷

If the profession of forensic science is truly guilty of these charges, and if it can be shown that it has failed to establish the checks and balances necessary to prevent junk science and improper testimony from violating the rights of defendants, then the recommended “sentence” of being subjected to a politically charged, bureaucratic oversight commission would seem well deserved.

THE CASE FOR EXONERATION

Although they don’t command much attention amidst the fervor surrounding the innocence movement, suspicions that DNA exonerations do not portray an accurate picture of the American criminal justice system have been communicated from various sources. On April 26, 2007, an op-ed piece authored by Morris Hoffman, a Colorado district court judge and adjunct professor of law at the University of Colorado, was published in the *Wall Street Journal*. Hoffman argued that that innocence movement is prone to exaggeration and a tendency to “stretch their results beyond all statistical sense.” Hoffman continues:

“The mythmakers also directly conflate trial error rates with wrongful conviction rates. Studies showing astonishingly high error rates in capital trials have very little to do with the question of the rate at which innocent people are being convicted. I can’t remember a single trial over which I have presided – including dozens of homicides – in which, looking back, I didn’t make at least one error in ruling on objections. It is a giant leap from an erroneous trial ruling to reversible error, and another giant leap from reversible error to actual innocence.”²⁸

As will be shown, the most rudimentary analysis seems to reveal that rhetoric emanating from within the innocence network has been underwritten by statistical expressions and characterizations that collapse under the weight of intellectual scrutiny. While this does not devalue the work of representing convicted felons who have a strong case of innocence (even Judge Hoffman pointed out that such work “is incredibly important and should be celebrated...”), the weight assigned to any public policy or legislative recommendations based on such misrepresentations would seem to warrant either minimal consideration or maximum scrutiny.

Misinterpretation of Exoneration Data

The statistical evidence used against forensic science was summarized in a *New York Times* editorial published on July 23, 2007. “The leading cause of wrongful convictions was erroneous identification by eyewitnesses, which occurred 79 percent of the time,” wrote *Times* legal correspondent Adam Liptak. “Faulty forensic science was next, present in [57] percent of the cases.”²⁹ The eagerness of the media to harvest these troublesome figures was only magnified by the presentation that Brandon Garrett and Peter Neufeld gave to the National Academy of Sciences in September 2007. Their presentation was entitled “Improper Use of Forensic Science in the First 200 Post-Conviction DNA Exonerations” and it relied heavily on the data generated by Garrett’s research.

But even when summarizing his own research in “Judging Innocence,” which was published only months after his appearance at the National Academy of Sciences, Professor Garrett clearly acknowledged that his study did not seek to quantify the *leading causes* of wrongful convictions. Instead, he simply sought to identify “the *leading types of evidence supporting* wrongful convictions [emphasis added].”³⁰ This clarification has fallen on deaf ears for reasons that have only been worsened by activists in the innocence network. Whatever those reasons are, suffice it to say that the public were strongly encouraged to believe that 57% of the 200 overturned convictions were caused by faulty forensic science.

First, it is true that 113 or 57% of the 200 overturned convictions involved the presentation of forensic evidence against defendants during their original trials, but the fact that 57% of these convictions involved the use of forensic evidence does not mean that 57% of all wrongful convictions are *caused* by faulty forensic science. This assumption seems to exemplify the kind of statistical carelessness that Judge Hoffman described in his *Wall Street Journal* editorial.

The authors studied the *Innocence Project’s* case profiles for each of the first 200 DNA exonerations and tabulated the number of cases in which specific “causes” occurred. Because many of the cases have more than one cause associated with them, the combined percentages exceed 100%. The following is a breakdown of these causes ranked from highest to lowest.

| CAUSES BY NUMBER AND PERCENT OF CASES | | | |
|---------------------------------------|---------|---------|-------------------------------------|
| Rank | % Cases | # Cases | Description |
| 1 | 77% | 153 | Eyewitness misidentifications |
| 2 | 36% | 71 | Unreliable / limited science |
| 3 | 22% | 43 | False confessions |
| 4 | 14% | 27 | Government misconduct |
| 5 | 13% | 26 | Forensic science misconduct |
| 6 | 13% | 25 | Informant snitches |
| 7 | 2% | 3 | Bad lawyering |

The numbers shown in the above table were collected directly from the *Innocence Project’s* published information on DNA exonerations, yet the only two causes pertaining to forensic science (unreliable/limited science and forensic science misconduct) account for 97 or 49% of the cases, somewhat lower than what was quoted by the *New York Times*, Brandon Garrett, and Peter Neufeld. In fact, the number of cases involving actual instances of faulty forensic science is far less than the 97 cases tabulated above. And as will be demonstrated in the following section, the overall statistical weight that can be honestly assigned to faulty forensic science is very small.

Identifying Instances of Systemic Failure

“At the zenith of the Darwinian revolution, Oliver Wendell Holmes assured his countrymen: ‘Science is a first-rate piece of furniture for a man’s upper-chamber, if he has common-sense on the ground floor.’”³¹ Forensic science is no different. Unfortunately, both Brandon Garret and the *Innocence Project* have relied upon an incongruent statistical method where the factors cited as causing wrongful convictions are counted and expressed as a percentage of cases. This method cannot account for cases where multiple types of evidence were used against a defendant in a single case. For example, in the case against Bruce

Godschalk³², who was convicted of rape and burglary by a Pennsylvania jury in 1987, the *Innocence Project* identified five factors that contributed to his conviction:

1. false eyewitness identification
2. unreliable / limited science
3. false confession
4. government misconduct
5. bad informant/snitch

By all accounts, the conventional serology tests that were conducted in Godschalk’s case were not faulty. They were simply incapable of excluding him. Terrence F. Kiely, a professor of law at DePaul University, cautions lawyers to be vigilant of this inherent problem in science when he writes:

“The guilt-oriented inferences rising from such less-than-certain testimony is strong evidence in any case, requiring defense counsel to provide alternative inferences or to challenge the credentials or opinion base of the testifying expert or experts.”³³

Kiely went on to say:

“It is up to the defense counsel to achieve a sufficient knowledge of the expertise at issue to be able to effectively cross-examine the expert on what he or she bases that conclusion on, and to elicit what characteristics exactly are the basis of the opinion at issue.”³⁴

In the Godschalk case, the inherent limitations of conventional serology as compared to the specificity of modern DNA testing can only be characterized as junk science if they resulted from either intentional or accidental malpractice on the part of the scientist. But no such malpractice was uncovered. Furthermore, even if the forensic evidence in the Godschalk case had been flawed, four other factors contributed to his conviction and must be given appropriate weight when studying the reasons for his conviction.

With this in mind, the authors tabulated the total number of systemic failures cited by both the *Innocence Project* and Brandon Garret. Each type of failure was then expressed as a percentage of the total number of instances. In doing so, a more valuable statistical model was created. The following table illustrates the resulting data:

| PROBABLE SYSTEMIC FAILURES ACCORDING TO THE INNOCENCE PROJECT | | | |
|---|---------|------------|-------------------------------------|
| Rank | Percent | Number | Description |
| 1 | 44% | 153 | Eyewitness misidentifications |
| 2 | 20% | 71 | Unreliable / limited science |
| 3 | 12% | 43 | False confessions |
| 4 | 8% | 27 | Government misconduct |
| 5 | 7% | 26 | Forensic science misconduct |
| 6 | 7% | 25 | Informant snitches |
| 7 | 1% | 3 | Bad lawyering |
| | | 348 | |

When expressed in this fashion, unreliable/limited science occurred 20% of the time while forensic science misconduct occurred only 7% of the time. Collectively, this demonstrates that even the most aggressive interpretation of the *Innocence Project’s* own published data can only attribute 27% of all probable systemic failures to forensic science, a far reach from the 57% cited earlier. Interestingly, the statistical slack that seems to have fueled the *New York Times’* and other media outlets’ misunderstanding of the role of forensic evidence in wrongful convictions seems to be caused, in large part, by research and speculation that has failed to properly distinguish causes from correlations.

"It's not surprising that that the research on erroneous convictions should appear that way, since most of the people who have investigated these cases are lawyers and are trained in the law's model of cause and effect. Law school teaches us that wrongs have causes, that causes can be prevented, and that injuries from

unacceptable causes warrant recompense to the victim and punishment to the wrongdoer. Indeed, that is the very basis of both criminal and tort law."³⁵

The cultural mandates that govern the practice of law, particularly where social activism is concerned, require neither an objective, scientific approach to problem-solving, nor the serious consideration of alternative hypotheses. Harold A. Feder, author of Succeeding as an Expert Witness, explained this professional dynamic when he wrote:

“Attorneys in our system are advocates.....As such, their duty is to put forward a set of facts and proofs that support the client’s position. Occasionally, zeal for the cause may shade professional and intellectual independence.”³⁶

While advocacy is necessary to ensure proper representation in our justice system, society stands to suffer if it is allowed to shape public policies that are incapable of achieving the goals for which they were created. Attempts to determine what causes failures in our criminal justice system require reliable methods and collaboration among a variety of stakeholders and experts who are committed to objectively analyzing wrongful convictions and determining their root causes. Post conviction DNA exonerations provide a unique opportunity for criminal justice professionals to learn from their mistakes. Existing political agendas and loyalties to social causes may energize these efforts, but they introduce unnecessary biases and motives that erode the partnerships needed to solve such serious problems.

Case Studies

The exonerations of Steven Avery, Kerry Kotler, Clyde Charles, William Gregory, and Bruce Godschalk demonstrate how easily wrongful convictions can be misdiagnosed. According to *Innocence Project* case profiles and available news reports, forensic evidence in each case was used by the prosecution to demonstrate guilt even though it was very nonspecific and could not scientifically or exclusively justify the acquittal of the defendant. As a result, they were included among the 113 cases (57%) cited by the *New York Times* as being caused by faulty forensic science. But no indication could be found to suggest that the testimony or analyses were faulty. The following summaries are provided.

Steven Avery – “He was charged with and convicted of [a] brutal attack on [a] beach in Manitowoc County, based almost entirely on eyewitness identification testimony of a single witness. The state also presented microscopic hair examination evidence indicating that a hair found on Avery was ‘consistent’ with the victim’s hair. Avery was sentenced to 32 years in prison in March 1986.”³⁷

Kerry Kotler – “The prosecution based its case on several points:

- “The victim identified Kotler from a group of 500 photographs.”
- “The victim identified Kotler by sight and voice from a police lineup.”
- “County laboratory tests showed that Kotler had three non-DNA genetic markers (ABO, PGM, and GLO) that matched those of the semen stain left on the victim’s underpants.”³⁸

Clyde Charles – “Clyde was tried by an all-white jury of 10 women and two men. The prosecution’s evidence included the victim’s identification and her testimony that the rapist called himself ‘Clyde.’ A criminalist testified that two Caucasian hairs on Clyde’s shirt were microscopically similar (but not conclusively identical) to hair from the victim’s head. The police officer testified that Clyde had been wearing a dark jogging jacket with white stripes when he saw him outside the bar, corroborating the victim’s description of her assailant’s dark jogging suit with stripes. The officer also testified that Clyde had been wearing a red cap and blue jacket tied around his neck when he saw him hitchhiking. A red baseball hat and blue jean jacket were found near the scene of the rape.”³⁹

William Gregory – “William Gregory, an African-American, was arrested, charged, and sentenced for the attempted rape of a Caucasian woman in his apartment complex after the victim identified him in a suspect lineup. There was no other evidence in the case except for six Negroid head hairs discovered in pantyhose used as a mask at the crime scene. The pantyhose had been washed and hung in the victim’s bathroom prior to the crime. At the 1993 trial a hair microscopist stated that the hairs could have come from Gregory, and this testimony was helpful to the prosecution.”⁴⁰

Bruce Godschalk – “In May of 1987, Mr. Godschalk was convicted of [two] rapes and sentenced to 10 to 20 years in prison. The police had recovered semen samples from both rapes but, in 1987, did not have the DNA technology to test this evidence. Mr. Godschalk's conviction was affirmed on appeal.”⁴¹

The summaries published by the *Innocence Project* revealed no indication that the forensic evidence in the above cases was anything but valid, yet it has been rhetorically and statistically attributed to faulty forensic science. In other words, because the evidence did not prevent the conviction, it was assumed to have been faulty.

In criminal trials, prosecutors present the best evidence they have for their case, even if it is weak or limited. By default, physical evidence that cannot exclude a defendant as being associated with a crime is fair-game to be used as an inference of guilt, and the jury may benefit from hearing it. This demands ethical restraint and judicial vigilance to ensure that the evidence is not confused for being stronger than it actually is. Therefore, competent lawyering is a critical component in the justice system's efforts to protect the rights of defendants and the overall fairness of the adjudicative process.

Failure to Credit Scientific Evidence Favorable to the Defendant

Perhaps the most startling data uncovered in this study was the fact that 36 out of 200 cases (18%) were identified as having forensic evidence that was actually *favorable* to the defendant. Various reasons may explain why this evidence was either not presented at the original trial or failed to cause an acquittal, but these instances did not temper the rhetoric blaming forensic science for wrongful convictions. For example, in his research, Professor Garrett found two cases where fingerprint evidence was used against the defendants. But in a third case, the trial of Antonio Beaver, he failed to give credit to forensic scientists who, according to the *Innocence Project*, concluded that “fingerprints collected from the victim's car – including prints from the driver's side and the rearview mirror – did not match the victim or Beaver.”⁴²

To the credit of the *Innocence Project*, they did not associate Antonio Beaver's case with any questionable forensic evidence. The same, however, cannot be said for the convictions of James Ochoa, Drew Whitley, Roy Brown, and David Vasquez. In each case, the *Innocence Project* cited unreliable / limited science as being a factor contributing to the conviction despite the knowledge of exculpatory forensic results before trial. James Ochoa⁴³, for example, was convicted of armed robbery and carjacking in 2005. Prosecutors were certain of his guilt even though DNA and fingerprint evidence excluded Ochoa prior to trial. Drew Whitley⁴⁴ was convicted of murder in 1989. A laboratory technician testified that a saliva sample associated with the crime scene did not match Whitley. Roy Brown⁴⁵ was convicted of murder in 1992. A bite-mark expert retained by the defense refuted the opinion of a weak prosecution expert by testifying during trial that six of seven bite-marks were not sufficient for analysis and that “the seventh excluded Brown because it had two more upper teeth than he had.” David Vasquez,⁴⁶ a mentally impaired suspect, confessed and plead guilty to murder and burglary in 1985. Before trial, however, “Vasquez's blood type did not match the blood type of the semen found in the victim or on her bathrobe. Moreover, none of the shoe impressions found outside her home matched any of Vasquez's shoes seized by the police.” Yet all of these convictions were blamed on “unreliable / limited science.”

Ironically, the number of such cases where forensic evidence was found to be favorable to the defendant exceeds the total number of cases that appear to have been compromised by faulty forensic science. The cases of Ochoa, Whitley, Brown, and Vasquez demonstrate with unmistakable clarity that actual instances of faulty forensic science have not been adequately distinguished from instances where legitimate forensic evidence was simply too nonspecific to exclude the defendant. Because of their critical public policy significance, instances of forensic science *malpractice* must be carefully identified and quantified.

Forensic Science Malpractice

It is unfortunate that mistakes and misconduct occur in any profession; forensic science is no exception. Even the rarest instances of failure can have heartbreaking consequences that destroy lives and deflate public confidence. For this reason, forensic science practitioners must carefully employ safeguards that render their fallibility as inconsequential as possible. As Saferstein noted in 2004, “The procedures and techniques that are used in the laboratory must not only rest on a firm scientific foundation but also satisfy the criteria of admissibility that have been established by the courts.”⁴⁷

Use of the term *malpractice* to describe errors and omissions in the forensic sciences is surprisingly rare. Innocence activists prefer the phrase *faulty forensic science* to describe what they perceive to be failures committed by forensic scientists. This is problematic for two reasons. First, what a trial lawyer or innocence activist perceives to be faulty science may, in fact, be completely valid. The attractiveness of scientific results to a particular party can never be allowed to serve as the basis upon which reliability is judged. Second, it is unclear what innocence activists consider to be forensic science. In the aforementioned presentation given to the National Academy of Sciences by Brandon Garret and Peter Neufeld, voice print analysis and dog scent tracking were included as examples of forensic evidence.⁴⁸ Yet these disciplines are rarely, if ever, practiced in America’s crime laboratories.

One of the more succinct definitions for *malpractice* was published by the Missouri Department of Health & Senior Services:

“...the failure of a professional person to act in accordance with the prevailing professional standards, or failure to foresee consequences that a professional person, having the necessary skills and education, should foresee.”⁴⁹

The term *Forensic Science Malpractice* has remarkable public policy value because it encompasses every conceivable failure that could be committed, either intentionally or accidentally, by a forensic scientist or forensic science facility. Research aimed at evaluating the role of forensic science in wrongful convictions must quantify actual instances of forensic science malpractice while excluding instances that have been unfairly or improperly characterized as faulty forensic science. Furthermore, this research must also quantify the instances where the work of a forensic scientist tended to favor the case of the defendant even though his conviction was later determined to be erroneous.

To meet these objectives, the authors performed an additional review of the 200 case profiles published by the *Innocence Project* and, when possible, supplemented these reviews with other news reports and literature that offered some degree of insight into events surrounding these cases.⁵⁰ Four categories were established to distinguish the role that forensic science played in the original trial of each exoneree:

1. Conviction not supported by forensic evidence
2. Non-specific science failed to exclude the defendant
3. **Forensic Science Malpractice**
4. Forensic evidence was favorable to the defendant

By categorizing the cases in this manner, a more realistic view of the role of forensic science in wrongful convictions can be developed. The following table shows how the *cases* ranked using this method.

| THE ROLE OF FORENSIC SCIENCE – BY NUMBER AND PERCENT OF CASES | | | |
|---|---------|-------|--|
| Rank | Percent | Cases | Description |
| 1 | 35% | 69 | Non-specific science failed to exclude the defendant |
| 2 | 32% | 63 | Conviction was not supported by forensic evidence |
| 3 | 18% | 36 | Forensic evidence was favorable to the defendant |
| 4 | 16% | 32 | Forensic science malpractice |
| | | 200 | |

Sixteen percent of the cases revealed circumstances that might, at least preliminarily, be evidence of forensic science malpractice.⁵¹ But as mentioned earlier, there is a problem with this approach. Expressing these instances as a percentage of cases does not account for cases where other factors contributed to the conviction. Therefore, the above 32 instances of forensic science malpractice were extracted and ranked against all other factors identified by the *Innocence Project* and Professor Brandon Garret. This time, the total number of factors dropped from 348 to 283 most likely because this method filters out cases that were loosely or improperly characterized as being caused by faulty forensic evidence. The following table ranks these factors, which includes forensic science misconduct:

| PROBABLE SYSTEMIC FAILURES – BY NUMBER AND PERCENT | | | |
|--|------------|------------|-------------------------------------|
| Rank | Percent | Instances | Description |
| 1 | 54% | 153 | Eyewitness misidentifications |
| 2 | 15% | 43 | False confessions |
| 3 | 11% | 32 | Forensic Science Malpractice |
| 4 | 10% | 27 | Government misconduct |
| 5 | 9% | 25 | Informant snitches |
| 6 | 1% | 3 | Bad lawyering |
| | | 283 | |

The above table provides some of the most compelling evidence that innocence activists are confused about forensic science malpractice in wrongful convictions. Forensic science malpractice represents up to eleven percent of all factors contributing to wrongful convictions based on the available data. But for those who correctly argue that 11% is not an acceptable rate of failure, it is worth examining how bad lawyering and government misconduct exacerbate these instances of malpractice by making it less likely that they will be discovered before adversely impacting a defendant.

Bad Lawyering and Government Misconduct

Previously, it was noted that the number of convictions attributed by the *Innocence Project* and Professor Garrett to bad lawyering was low, only 3 cases out of 200, or 1.1%. Government misconduct was blamed in 27 cases (14%). But preliminary evidence suggests that nearly all of the overturned convictions would have been prevented by more competent and ethical legal counsel on both sides. This finding is consistent with standards adopted by the American Bar Association.

Kelly Pyrek, author of [Forensic Science Under Siege](#), noted the following:

“The American Bar Association’s (ABA) Model Rules of Professional Conduct outline a number of important tenets of responsibility and professional conduct for attorneys, including ‘A lawyer shall provide competent representation to a client. Competent representation requires the legal knowledge, skill, thoroughness, and preparation reasonably necessary for the representation’ and ‘A lawyer shall act with reasonable diligence and promptness in representing a client.’”⁵²

Considering the critical role that lawyers play before and during a criminal trial, one might expect more than three instances of bad lawyering to be identified in 200 overturned convictions. But in fact, only three instances were cited by both the *Innocence Project* and Professor Brandon Garrett.⁵³ This oversight skews the data in two ways. First, it precludes an accurate count of actual instances of bad lawyering. Second, it lowers the total number of factors contributing to wrongful convictions such that forensic science malpractice is given more weight than it statistically deserves.

For example, if one were to estimate that 100 instances of bad lawyering are actually represented in the 200 convictions studied, it would raise the total number of systemic failures to 380 and lower the percent attributable to forensic science malpractice to 8.4%. On the other hand, if the most liberal (but not necessarily the most reasonable) interpretation is applied such that all 200 cases are assigned one instance of bad lawyering and one instance of government misconduct, it would raise the total number of systemic failures to 653 and lower the percent attributable to forensic science malpractice to only 4.9%.

These hypothetical estimates demonstrate how important it is to accurately and *completely* tabulate the causes of wrongful convictions before assigning a specific share of the blame to any of them. Future studies subjected to peer review and sufficient transparency must look closer at overturned convictions to determine exactly how they happen and if, in fact, apparent instances of forensic science malpractice can be

fairly labeled as such. Preliminary information collected in this study strongly suggests that many are not. This includes the disturbing and tragic case against Ray Krone.

The Conviction of Ray Krone

According to *MSNBC*, it was the ultimate example of faulty forensic science – an erroneous identification reported by a prosecution expert who testified that Ray Krone, and only Ray Krone, was responsible for leaving a bite-mark on the breast of a dead woman found in a local tavern. She was a waitress and Ray Krone was a frequent patron.⁵⁴ Because of Krone’s crooked teeth and the irregular contours observed during the bite-mark analysis, Krone became known as the “Snaggle-Tooth Killer.” With little other evidence to speak of, Krone was convicted of murder and sentenced to death by an Arizona jury. According to the *Innocence Project*, “At his 1992 trial, Krone maintained his innocence, claiming to be asleep in his bed at the time of the crime. Experts for the prosecution, however, testified that the bite-marks found on the victim's body matched the impression that Krone had made on [a Styrofoam cup] and a jury convicted him on the counts of murder and kidnapping.”⁵⁵

At first glance, Krone’s conviction seems to be a glaring example of forensic science malpractice. Unfortunately, critical pieces of information were left out of the *Innocence Project’s* case profile for Ray Krone. Prior to Krone’s trial, the prosecution was made aware of exculpatory results issued by Dr. Skip Sperber, a respected bite-mark expert. Sperber concluded that Krone, in fact, did not leave the bite-mark found on the victim’s breast and, according to *MSNBC*, advised prosecutors that the police “have the wrong guy.”⁵⁶ Apparently unhappy with Sperber’s result, prosecutors took the evidence to an inexperienced local odontologist who conclusively identified Krone as leaving the bite-mark in question. The Krone case was the local dentist’s first criminal case, according to *MSNBC*.

As attorneys continued to uncover problems with Krone’s trial, it was learned that more conventional and scientifically respected evidence, including fingerprints and footwear impressions, had also been examined prior to trial and excluded Krone as being the contributor. Maricopa County Attorney Rick Romley eventually apologized for the obvious miscarriage of justice, but he conveniently passed blame for his own apparent misconduct onto forensic science by suggesting that Krone’s conviction was simply the result of inadequate science. But in a case that was touted as the quintessential example of faulty forensic science, it was forensic science that got it right from the start.

The *Innocence Project* case profile for Ray Krone failed to emphasize government misconduct or bad lawyering as factors contributing to Krone’s conviction. But the inability of Krone’s team to mount an adequate defense during the first trial and the failure of prosecutors to act on the totality of forensic evidence pointing to another perpetrator should have raised the ire of the *Innocence Project* enough to convince them that bad lawyering and government misconduct were the primary causes of Krone’s wrongful conviction, not faulty forensic science.⁵⁷

Closing Arguments

In their best-selling book titled, “Actual Innocence,” Barry Scheck, Peter Neufeld, and Jim Dwyer wrote the following:

“Not long ago, to claim that an innocent person had been imprisoned was audacious, even risky, a proposition that was close to unprovable.”⁵⁸

Seven years and 126 exonerations later⁵⁹, it seems just as audacious and risky to argue that faulty forensic science is not the systemic cause of wrongful convictions that it has been portrayed to be. What’s more, the vast majority of America’s forensic science laboratories are a reason to be somewhat optimistic about the future of criminal justice in the United States.

It is a fundamental principle of America’s criminal justice system that the burden of proof falls upon the accuser. The innocence network has spent over a decade portraying forensic science as a weak institution requiring governmental oversight to prevent frequent miscarriages of justice. But the basis for these assertions has been void of any objective and collaborative efforts to determine if they are actually true. In fact, the most serious and frequent causes of wrongful convictions are false eyewitness identifications and false confessions exacerbated by bad lawyering and government misconduct. As a total percentage of all systemic failures contributing to wrongful convictions, faulty forensic science comprises a remarkably small percentage. But more importantly, this percentage decreases considerably as stricter and more

controlled methods are employed to analyze the available exoneration data and case summaries. More work should be done in this regard by objective researchers with the support and assistance of trusted forensic, academic, and legal practitioners.

That innocence activists have focused their public policy efforts so intently on crime labs may be evidence that forensic scientists have made themselves a more attractive target. The innocence movement needs attention and money to drive its public policy agenda, and it must do so in order to remain relevant. In the age of hit television shows like *CSI*, *New Detectives*, *Cold Case Files*, and *Crossing Jordan*, taking on forensic scientists will turn heads more quickly than esoteric procedural debates among lawyers. Furthermore, many of the legislators with whom innocence activists hope to curry favor are practicing lawyers themselves. Therefore, the goal of these activists to institutionalize their many recommendations for criminal justice reform might quickly lose momentum in Washington, D.C. and many state capitols if its centerpiece was an attack on the legal profession.

The resulting rhetorical campaign to weaken public confidence in crime laboratories has come to bear heavily on the profession of forensic science, which is not accustomed to withstanding sustained attacks from well-funded activists. Forensic scientists are usually government employees who are not authorized by their parent organizations to engage in these kinds of political battles. As a result, the arguments and recommendations of forensic science's most vocal critics largely go unchallenged. Only recently have representatives of forensic science laboratories begun to remedy this imbalance.

The case of Ray Krone is among the most disturbing in terms of the blame unfairly placed on forensic science, not to mention the turmoil inflicted upon Krone and his family as they endured devastating acts of government misconduct and bad lawyering. But the cases of Steven Avery, Antonio Beaver, Clyde Charles, William Gregory, Kerry Kotler, and Bruce Godschalk tell a story of their own, and they all raise serious questions about the efforts that have been made to diagnose the root causes of wrongful convictions and other failures of our criminal justice system. In too many instances, good-faith attempts to find real solutions have been subordinated to the assignment of blame.

Max Houck, Director of West Virginia University's Forensic Science Initiative, cautioned that this kind of environment can be quite dangerous. "The attainment of quality is based on the promise of redemption. Strictly punitive measures handed down because of accusations by politicized activists improve nothing and benefit no one."⁶⁰

PUBLIC POLICY CONSIDERATIONS

While the conclusions and interpretations reported in this study seem to defend the profession of forensic science, the authors recognize that forensic science malpractice does occur, sometimes with horrific consequences. It is also important to credit those in the innocence network who have fought to ensure that the full extent of the damage is made known to those in a position to prevent similar instances from recurring.

The fact remains, however, that all subject-matter experts in a variety of forensic and non-forensic disciplines are fallible human beings. Exactly how dangerous their errors can potentially be depends on the gravity of the matter under consideration. Consequently, the adversarial system of justice in the United States places tremendous ethical and moral responsibilities on lawyers, judges, and juries to be vigilant, honest, fair, and responsive to the needs of the defendants, citizens, and witnesses they are supposed to protect. In doing so they must look cautiously, and sometimes skeptically, at the testimony of subject-matter experts.

Writing for the Criminal Justice Section of the American Bar Association, C. Ronald Huff, a professor in the Department of Criminology, Law and Society at the University of California, Irvine, identified nine probable causes of wrongful convictions.⁶¹

- Eyewitness error
- Unethical police/prosecutorial behavior
- Plea bargaining
- Ineffective counsel

- Community pressure for convictions
- Knowledge of criminal record
- False/coerced confessions and suggestive interrogations
- Inappropriate use of informants and “snitches”
- Other factors

No specific mention was made of forensic science malpractice. According to Huff:

“The challenge is for the legal profession to continue its assessment of the problem of wrongful conviction, as dramatically represented by the recent spate of DNA exonerations, and decide how best to implement needed reforms to reduce our rate of error. Such reforms, in my judgment, are necessary to preserve the integrity of our criminal justice system, restore/maintain the public’s (and jurors’) faith in the fairness of the system, and protect public safety by reducing the number of serious offenders who continue victimizing citizens while the wrongfully convicted go to prison.”

Certainly, forensic laboratory scientists must continue their efforts to improve the trustworthiness of their work and promote strong internal professional governance that commands the confidence of all stakeholders. But they must also take responsibility for the stewardship of their profession. This means recognizing the biases and motivations inherent to the innocence movement and responding to them with equal degrees of civility and forthrightness. An unwillingness to engage in this important debate deprives the public of the opportunity to bring better clarity to the issues raised by the innocence network.

Forensic Oversight Commissions

The major public policy question that this study hoped to answer was whether or not governmental oversight of crime laboratories is statistically and economically justified. The opinion held by many in the innocence movement is that such oversight is needed; however, this opinion depends on three assumptions that are demonstrably invalid:

1. That faulty forensic science is a leading cause of wrongful convictions.
2. That crime laboratory accreditation fails to provide the structure and accountability necessary to minimize the occurrences of forensic science malpractice.
3. That oversight commissions provide an inherently healthy and constructive forum in which to address issues affecting the integrity of forensic science services.

One problem that the authors uncovered was that the profiles published by the *Innocence Project* and the research published by Brandon Garrett do not distinguish crime laboratory *testing errors* from *field errors* committed during the collection and/or preservation of evidence. As mentioned earlier, even dog scent tracking was categorized as a kind of forensic evidence. If state legislatures are eager to explore the necessity of oversight commissions to govern crime laboratories, they deserve to know the facts, including the exact role of forensic science *laboratories* in convictions that were later overturned.

To this end, it would be preferable to review comprehensive peer-reviewed research linking forensic science to wrongful convictions, but no such data are available. Most of the published information appears on websites, in newspapers, and in books intended for the general population. Even the work published in the *Columbia Law Review* by Professor Brandon Garrett is largely rhetorical and reveals little about the methods employed to collect and interpret data pertaining to wrongful convictions. It seems reasonable to expect any organization or campaign with the resources to maintain such a strong and long-lasting political movement to promote transparency through peer-reviewed research that can be scrutinized by others for the benefit of all.

Accreditation

Only one case out of the 200 studied was found to involve forensic science malpractice in an accredited laboratory; however, it was a false exclusion of a rape victim’s husband as being the contributor of semen found on a rape-kit swab and bedding from the victim’s home. The error did not directly incriminate the defendant. Also, the incident occurred in 1988 when crime laboratory accreditation was in its infancy.⁶²

In fact, 74% of the 200 overturned convictions occurred before 1990. Since then, accreditation has grown in scope and complexity. Of all laboratories currently accredited by the American Society of Crime

Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB), 73% achieved accreditation for the first time after 1992.⁶³ While accreditation is not a promise of perfection, it has enforced professional accountability and transparency that has benefited all stakeholders of forensic science for over 25 years. There is simply no reason to believe that it won't do the same in the years to come.

Peter Marone is the Chairman of the *Consortium of Forensic Science Organizations (CFSO)*. On April 10, 2008, he testified before the United States House Subcommittee on Crime, Terrorism, and Homeland Security. In his comments, Marone warned of the problems that state oversight commissions can present:

“Many laboratories, if asked, will state that their oversight is provided by the accrediting body under which they operate. Some people would say that this is the fox guarding the hen house and there is something inherently wrong with this process. However every other oversight board, whether it be commercial, medical, legislative or the legal, has oversight bodies which are comprised of the practitioners in that profession. It makes sense that the most knowledgeable individuals about a particular topic would come from that discipline. But that does not seem to meet the current needs. The key to appropriate and proper oversight is to have individuals representing the stakeholders, but that these individuals must be there for the right reason, to provide the best possible scientific analysis. There cannot be any room for preconceived positions and agenda driven positions. Unfortunately, we have seen this occur in some States.”⁶⁴

Critics have argued that accreditation cannot be trusted because it calls for laboratories to be inspected by other forensic experts – a kind of self-regulation that is incapable of providing the oversight necessary to ensure that laboratories are held to account. What this argument does not take into account is what the authors term the *economy of accreditation*, where a pool of specially trained and monitored assessors have a strong incentive to be brutally thorough and objective during their inspection of a laboratory. The very reputations of the assessors, the likelihood that they will be allowed to participate in future inspections, and the desire to make good use of their valuable time (usually requiring several days away from home and work) are all compromised by failing to conduct a comprehensive and rigorous inspection. It is this economy of incentives that ensures the effectiveness of professional peer-based accreditation.

But peer-assessors also have another incentive to hold a laboratory accountable for compliance to accreditation standards. A laboratory that fails to do good work damages the reputation, fairly or not, of everyone who calls themselves a forensic scientist. No competent and thoughtful assessor is willing to tolerate that.

Conclusion - The Root Cause of Wrongful Convictions

“The legal system is based on the ancient gladiator model with lawyers and experts using paper and persuasion instead of swords and armor.”⁶⁵ This observation reminds us that an adversarial system of justice has powerful self-regulatory mechanisms that are reliable, but only when their capacity is not exceeded.

When criminal justice is relegated to a mindless routine of shuffling cases from one desk to another, circumstances that might reveal the innocence of a defendant are more likely to be missed. The practice of both law and science require thoughtfulness and introspection, two qualities that erode quickly under the rushing current of cases that have flooded criminal justice agencies in the United States since the late 1950s.⁶⁶

Perhaps one of the most disturbing examples of this trend was described in 2005 by Steve Bogira. His eye-opening account of one of the busiest felony courtrooms in the United States leaves little doubt about why innocent people are sent to prison.⁶⁷ A review of Bogira's book was written by Stuart Shiffman for *The Book Report Network*:

“Bogira is a reporter for the *Chicago Reader*, a weekly independent publication. He gained access to the Cook County criminal courthouse by persuading Judge Daniel Locallo to allow him to observe the day-to-day activities in the courtroom occupied by the Chicago jurist. In that courtroom, as well as in the entire courthouse, the prosecutors, public defenders, and courtroom staff work together on a daily basis. All of these individuals shared their thoughts with Bogira. Courtroom 302 is one of dozens of courtrooms in the Criminal Courthouse grinding out roughly 30,000 criminal cases annually. Observing how that work is accomplished in this representative courtroom serves as a sobering lesson to anyone with even a minimal concern for the American criminal justice system.”⁶⁸

Not surprisingly, the factors that innocence activists traditionally cite as leading to wrongful convictions appear not to be *causes* at all when viewed through this prism. Instead, they can be seen as clear and convincing *symptoms* of a pervasive disease that may continue to victimize innocent people if their fellow citizens and elected officials do not demand that it be brought under control. If one reflects on the potential devastation that can be inflicted by such a bruised and battered system, one might wonder just how many more wrongful convictions would have occurred over the last fifty years if it wasn't for America's forensic science laboratories.

END NOTES

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