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A Systems Approach to Error Reduction in Criminal Justice

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QUATTRONE CENTER

for the Fair Administration of Justice

**A SYSTEMS APPROACH TO
ERROR REDUCTION IN CRIMINAL JUSTICE**

John F. Hollway

February, 2014





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EXECUTIVE SUMMARY

How can the criminal justice system reduce errors and improve the integrity of criminal convictions? This question framed a November, 2013 Dialogue organized by the Quattrone Center for the Fair Administration of Justice at the University of Pennsylvania Law School. Prosecutors, defense attorneys, federal and local law enforcement and judges, and researchers and academics assembled for a day-long discussion about enhancing the integrity of the criminal justice system, including the use of a collaborative “systems approach” to quality improvement.

The systems approach has reduced errors in a variety of complex, high-risk industries, including health care, aviation, and manufacturing, among others. Such an approach targets the system for improvement rather than specific individuals within the system. The systems approach seeks to provide an environment that maximizes each participant’s ability to act effectively and efficiently. It prizes a non-punitive culture of disclosure to identify errors, gathers and applies data to understand the causes of the error, and tests systems changes to prevent future errors. This focus on system improvement, rather than on individual punishment or blame, unites all participants around objective criteria and allows each participant to do his or her job more efficiently, accurately and safely.

The Quattrone Center seeks to apply this systems approach to criminal justice through a series of data-driven collaborations among researchers and practitioners. Its November Dialogue sought to explore the enthusiasm for this approach among practitioners and researchers, and to inform the future strategic direction of the Center. This document highlights the main themes and issues raised during the Dialogue, particularly methods that the Quattrone Center can use to help identify sources of error in the investigation, prosecution, and adjudication of crime, and ultimately contribute to the elimination of these errors.

The Systems Approach: A New Paradigm for Conviction Integrity. Even casual observers of the American criminal justice system are becoming increasingly aware of errors that occur in the investigation, prosecution, or adjudication of crimes. These errors occur despite the best intentions of thousands of hard-working and conscientious police officers, prosecutors, defense attorneys, and judges across the country. They result in inappropriate injury to the innocent and to society, unwelcome reputational damage to law enforcement, and unacceptable windfalls to the actual criminal actors, whose crimes go unpunished.

To date, research into these errors (historically labeled “wrongful convictions”) has been limited to the study of a tiny subset of the available cases. Moreover, although reform proposals seeking to reduce these errors abound, systematic implementation or forward-looking evaluation of such reforms has been virtually nonexistent, and thus their real-world impact or utility remains unclear. Instead, reformers have relied primarily on litigation to compel

redress and initiate reform – a process that is typically conducted years (if not decades) after the original causative events. This method of forcing reform often exacerbates the adversarial nature of criminal justice, dividing law enforcement, prosecutors, defense attorneys, and judges into mutually recriminatory camps rather than uniting all participants under the banners of integrity and justice.

Admittedly, reliance on litigation has spurred action and provided a vehicle for the redress of past errors. In raising awareness about the prevalence and breadth of errors in the system, innocence movement litigators have catalyzed popular support for change, and an increasing number of law enforcement and prosecution officials are embracing the need for further study of policies, practices and procedures that will enhance the accuracy and integrity of each individual's and each agency's role within the system. But reform-minded litigation cannot inspire the thousands upon thousands of independent agencies and actors that make up the criminal justice system to engage in candid and collaborative efforts to test, measure, and implement needed reforms.

In short, while the challenge of preventing errors in well-meaning complex systems is neither new nor unique to criminal law, the need for error reduction in the criminal justice system is clear. The time is right to pursue an approach to reform that will unify well-intentioned but professionally adversarial participants around an objective shared by all: the integrity of investigations, prosecutions, and adjudications, and the elimination of known and currently unknown errors that undermine the fair administration of justice.

Structural Challenges to a Systems Approach. On the surface, a wrongful conviction is a catastrophic, often multi-faceted error, and has much in common with accidents in other industries - such as a surgical error in healthcare, or a plane crash in aviation, for example. Similarly, the interdisciplinary, data-driven approaches currently being deployed to reduce errors in medicine and aviation would appear to hold much promise when applied to the criminal justice system. Such approaches rely on a culture of disclosure of errors and “near-misses,” encourage the development of non-punitive and objective assessments of causes of error, generate novel metrics for the improved analysis of system activities, and carefully implement process improvements to achieve substantive goals.

At the same time, clear structural differences exist between health care and aviation, on the one hand, and criminal justice on the other that may limit the successful implementation of a systems approach to error reduction in criminal law:

- As with health care and aviation, the criminal justice system is highly fragmented – but unlike those industries, the criminal justice patchwork of independent state and county agencies and private practitioners lacks any overarching body that can compel widespread action and oversee system-wide reform.
- Criminal justice lags behind other industries in its information technology capacities and in its data sharing practices. Integrated data sets allowing in-depth analysis, or comparative or longitudinal empirical study, are few and far between.
- Overworked and underfunded criminal justice practitioners often view research, information technology, and experimentation as luxuries ancillary to the core – and demanding – mission of preserving public safety.
- Unlike patient deaths or plane crashes, errors in justice administration often take years to emerge; because of this, they are difficult to investigate and may provide a less powerful impetus for institutional reform.
- The adversarial nature of criminal justice acts as a substantial barrier to the culture of non-punitive disclosure of errors and near-misses needed to quickly identify, classify, and address impediments to the fair administration of justice.

The Need for a Centralized Champion. For these reasons, implementing widespread change across the criminal justice system is a daunting task. Still, armed with an increasingly persuasive body of literature, reformers from all parts of the criminal justice system are hungry for data-driven analyses of their internal processes, and want to design and implement processes that will improve the integrity of criminal justice. They seek expertise and collaborations that are:

- *Unbiased*, transcending the adversarial process while supporting the core missions of each part of the criminal justice system;
- *Independent and objective*, combining the credibility of an external investigator with a focus on data; and
- *Collaborative and pragmatic*, partnering with a diverse group of criminal justice practitioners from around the nation to conduct field experiments and research that:
 - Generate knowledge about “best practices” in criminal justice reform;
 - Educate criminal justice stakeholders about the benefits of the proposed reform;
 - Assist with cultural change to broadly implement the proposed reform; and
 - Evaluate and refine the proposed reform over time.

The Need for a Culture of Disclosure. Creating a non-punitive culture of data disclosure in criminal justice may be the most important factor in the successful implementation of a systems approach. The adversarial nature of the criminal justice process challenges the creation of such a culture, creating instead a mutual mistrust that limits practitioners' enthusiasm for data-sharing and candid evaluation of specific errors or near misses.

Although it is somewhat counterintuitive in an era of robust civil and criminal liability to ask individuals participating in, or aware of, errors to disclose potentially damaging data, health care and aviation provide instructive examples of how such a culture can be encouraged for the benefit of all. In each industry, aggregation and careful analysis of anonymized data has greatly enhanced research into the root causes of errors and allowed for comparative assessments of where to focus and what approaches yield optimal returns. Further research is needed to understand better how a culture of disclosure might be developed within criminal justice settings.

Real-World Collaboration to Implement the Systems Approach. In the absence of historical data sets, researchers and practitioners must partner on forward-looking academic and empirical research. Political and cultural obstacles, limited opportunities for true experimental design, and challenges with data gathering, sharing, or standardizing have been and remain barriers to such research. The Quattrone Center can participate in collaborative research and can assist jurisdictions in disseminating and implementing new analytic metrics for managing the criminal justice system in ways that enhance the fair administration of justice.

Practitioners at the Dialogue indicated an eagerness to pursue collaborations that generate research that:

- Furthers the core mission of the agenc(ies)in question;
- Engages multiple agencies within a jurisdiction in a shared “culture of integrity” that improves quality and accountability for all;
- Employs rigorous models of comparative research with randomized data inputs; and
- Establishes new metrics for analysis that permit novel evaluations of the justice system.

Areas of Study. Exonerations of innocent people incarcerated for years for felonies they never committed are headline-grabbing, but achieving real and sustained improvements in conviction integrity may require a focus on more granular or mundane elements of the criminal justice system. There is considerable variety in the potential projects that could be undertaken by the Quattrone Center; some areas that could immediately benefit from a systems approach include:

- Accelerated adoptions and continued evaluation of reforms supported by existing science (e.g., videotaping of interrogations or other investigative encounters; double-blind eyewitness ID procedures; standards for the retention of physical evidence) across diverse jurisdictions;

- Study of unconscious biases;
- Study of habits or practices of police, prosecutors, defense attorneys or judges that unwittingly create opportunities for error;
- Evaluation of cross-agency records management and data sharing practices; and
- Research into areas of involving discretionary judgments, including detention decisions, charging decisions, or plea bargaining negotiations.

Ultimately, participants felt that the process of change embraced by the Quattrone Center would be as important as any of its individual projects. A systems approach to quality improvement depends on a continuous cycle of assessment and broad participation from a cross-section of participants. It asks researchers and practitioners to identify areas of weakness in the system, test improvements, analyze the results, and repeat the identification of new areas of weakness in an atmosphere of perpetual vigilance. The Quattrone Center has a distinctive opportunity to foster this process of continuous improvement across several areas in the criminal justice system.

The Launch of the Quattrone Center. Professionals throughout the criminal justice system are eager to provide the American people, and in particular the victims of crime as well as the victims of errors in the administration of justice, with a criminal justice system dedicated to rigorous self-examination and the proactive protection of public safety, and the elimination of preventable errors in the investigation, prosecution, defense, and adjudication of crime. The Quattrone Center for the Fair Administration of Justice, an unbiased, independent and data-driven academic research center, is well-positioned to collaborate with criminal justice practitioners openly and honestly to design, test, disseminate and help implement improved criminal justice processes that maximize the legitimacy and performance of the criminal justice system.



A SYSTEMS APPROACH TO THE REDUCTION OF ERRORS IN CRIMINAL JUSTICE

Introduction

Awareness of errors in the criminal justice system is growing. By the end of 2013, there were 1,272 exonerations listed by the National Registry of Exonerations,¹ over 75% of which were confirmed through means other than DNA testing.² Researchers and participants in the burgeoning “innocence movement” have used the stories of these exonerated individuals to educate practitioners, observers, and the general public that the criminal justice system in the United States is far from error-free, and that the errors occur throughout our system of justice far more often than most Americans would like. With support from practitioners in law enforcement and prosecutors’ offices, reformers in the innocence movement have generated a foundational body of literature that seeks to catalog and understand the proximate and root causes of wrongful convictions and to eliminate flaws in investigations, prosecutions, or trials and improve the fair administration of justice.

The response to these errors has been a litigation-based approach through post-conviction appeals in criminal cases to identify and redress past errors as they are discovered. These efforts have generated nationwide awareness of the problem’s scope, and continue to provide justice and redress for those who have been wrongfully convicted. At the same time, the system of redress for criminal law errors remains primarily individualized, retrospective, and adversarial—the opposite of the kind of prospective, data-driven, objective process that may be needed to focus on the *prevention* of error. As a result, practitioners and researchers seek an unbiased, apolitical, independent actor to bridge the gaps caused by the adversarial and political topics under discussion, and serve as a hub for objective assessment and implementation of best practices. As one participant stated:

[W]e need an ‘Accuracy Project’ that is neither pro-prosecution nor pro-defense, but pro-justice, protecting constitutional rights while providing new tools to promote public safety... The theme should be not only avoiding convicting the innocent, but giving the system a better shot at convicting the guilty.

The criminal justice system provides a number of structural challenges to system-wide reform: a hugely fragmented patchwork of independent police departments, prosecutors and defense offices, and courts; a similarly fragmented data infrastructure supplied by an outdated and underfunded technology infrastructure that limits data sharing and collaboration; insufficiently funded and understaffed departments with overworked personnel who too often view research, information technology, and experimentation as either ancillary to or competing with their core mission of protecting public safety; and the difficulty of sharing information about errors in an adversarial atmosphere of punishment and liability.

¹ On November 1, 2013, when the Dialogue was held, there were 1,236 exonerations catalogued by the National Registry of Exonerations. <http://www.law.umich.edu/special/exoneration/Pages/about.aspx>.

² As of December 21, 2013, 311 exonerations had been achieved as a result of DNA evidence. www.innocenceproject.org.

Despite these difficulties – or perhaps because of them – participants in the Dialogue enthusiastically embraced the concept that an academic research center could educate and partner with practitioners in the criminal justice system, applying lessons learned from the study and practice of quality improvement in other industries and engaging in real-world collaborations to improve the integrity of criminal investigations and trials. Such a nonpartisan, academic research and policy center that identifies, evaluates, and disseminates “best practices” could help lead to the broad adoption of a culture of integrity embraced by all participants in the criminal justice system.

The Quattrone Center for the Fair Administration of Justice was founded in mid-2013 to take “an interdisciplinary, data-driven, scientific approach to identifying and analyzing the most crucial problems in the justice system, and proposing solutions that improve its fairness for the long term benefit of society.”³ Part of the University of Pennsylvania Law School, the Quattrone Center proposes a collaborative “systems approach” to improve the integrity of the criminal justice system. This approach, applied successfully in other complex, fragmented, high-risk, high-impact industries (e.g., health care and aviation), emphasizes a holistic view of the criminal justice system as itself the target of improvement, rather than solely focusing on specific actors within the system. It presumes that the vast majority of errors in the system are (a) preventable and (b) caused by deficiencies that persist notwithstanding the individual actions of well-intentioned, hardworking practitioners.

By embracing a culture of openness and accountability, and through an iterative process of continuous improvement, the systems approach relies on detailed analyses of successes, errors (e.g., a surgical instrument left in the body during surgery, a plane crash, or an erroneous conviction), and “near misses” (e.g., a patient prepped for the wrong surgery but not operated on, two planes flying too closely together in an air traffic pattern, or a prosecution voluntarily dismissed after airtight alibi evidence is discovered). It provides comparative assessments of practices that can be shown to improve the system’s safety, accuracy, and efficiency, and it engages all participants in the system in objective, collaborative, data-driven assessments that improve the system’s ability to reach high-quality, correct results.

The Quattrone Center seeks to promote rigorous research studies that bring academics into partnership with criminal justice practitioners to improve our understanding of the nature, root causes, and scope of errors in the administration of justice. Through these collaborations, the Center seeks to test, optimize, and broadly implement new processes and scientifically supported methods to eliminate errors in the administration of justice.

³ Quattrone Center for the Fair Administration of Justice Mission Statement, July 2013.

On November 1, 2013, the Quattrone Center held an initial Dialogue on the Fair Administration of Justice, assembling a diverse group of nationally recognized experts with deep expertise in various portions of the criminal justice system for a media-free, day-long conversation about the application of the systems approach to criminal justice. Current and former prosecutors at the federal and local level engaged in open and candid conversation with private and public defense attorneys, past and current federal and state judges, police chiefs and trainers, and researchers with backgrounds in law, criminology, economics, psychology, and other disciplines to discuss the ability of the systems approach to improve the integrity of the criminal justice system. The Dialogue was intended to help suggest opportunities for the Center to engage with others in studying and implementing a systems approach to criminal justice. The Dialogue thus served as a first step, bringing participants who are often in adversarial roles together in a collaborative fashion to identify impediments to the fair administration of justice, discuss the benefits and challenges to a systems approach to improving investigation and conviction integrity, and explore scientifically valid methods to evaluate reform efforts across diverse jurisdictions. This report highlights and summarizes the major themes raised by, and ideas that resulted from, the Dialogue.⁴

Conviction Integrity: What We Know, and What We Don't.

Mapping a new approach to criminal justice reform depends first on an examination of the state of the art generated by past and present approaches. Accordingly, the Dialogue began by noting the considerable contributions of the “innocence movement” to the current state of our understanding of the nature and scope of the errors that continue to occur throughout the criminal justice system.

Many participants shared a common perception of the barriers to conviction integrity. After nearly twenty-five years of studying cases of individuals who have been incarcerated in error, reformers have identified a set of characteristics or factors that appear frequently. Addressing these factors would contribute to a more efficient and accurate system of criminal justice. These include:

- a. Imperfect eyewitness identification procedures;
- b. Interrogation techniques resulting in false confessions;
- c. Inaccurate or untruthful informant testimony;

⁴The Dialogue was conducted according to Chatham House rules, with participants assured that no attribution would be given to their comments. This report seeks to summarize and synthesize the views that emerged during the Dialogue and does not necessarily represent the viewpoint of each participant nor necessarily of the Quattrone Center, the University of Pennsylvania Law School or its affiliated faculty.

- d. Forensic science gaps in knowledge and use, including
 - i. A lack of standards or accreditations for crime laboratories;
 - ii. Disparate or nonexistent policies for evidence preservation;
 - iii. Improper collection, handling and analysis of biological samples;
 - iv. Inappropriate weight given to expert testimony; and
 - v. Use of “junk science” to the exclusion of scientifically sound techniques for identification of guilt or innocence;
- e. A lack of funding for defense services;
- f. Ineffective assistance of defense counsel;
- g. Mishandling of potentially exculpatory information (*Brady* issues) and issues of prosecutorial integrity; and
- h. Availability and deployment of post-conviction DNA testing.⁵

At the same time, researchers and practitioners alike hastened to point out the significant limitations of our knowledge regarding the true causes of error and the limited sample size of the universe of errors that has been available for study to date.

Our current knowledge about barriers to conviction integrity has been accumulated case by case through litigation, almost always in a post-conviction setting. The data set of cases that can be analyzed as a result of this approach contains a number of potential biases that could lead to the recommendation of inefficient, incomplete, or ineffective reform. More research is needed to expand our knowledge in these important areas of conviction integrity.

For example, research into errors in homicide cases indicates that false confession is a leading cause of error. It stands to reason that serious crimes of violence might cause law enforcement officials to push aggressively for confessions that “solve” the case, and examples of interrogations that generate unwitting (and undesired) false confessions in such cases are increasingly coming to light. Further, the larger penalties associated with these cases are more likely to generate appeals, creating the incentive and the opportunity for further investigation that may reveal the error. Still, this does not prove (or disprove) that false confessions (a) are the most significant challenge

⁵ For this list, several participants referenced Pennsylvania’s Report of the Advisory Committee on Wrongful Commissions, released September, 2011 and available here: <http://criminaljusticesection.wordpress.com/2011/09/21/report-of-the-advisory-committee-on-wrongful-convictions/>.

to the integrity of murder investigations or (b) occur less frequently in non-homicide cases. As a result, while many participants would advocate for expanded videotaping of interrogations in homicide cases – and indeed, in all custodial interrogations – we have not yet accurately measured the impact of this proposed reform on reducing false confessions, and we do not know whether this reform will have greater impact on the criminal justice system as a whole than other potential reforms. Such information would be helpful to advocates of the reform as well as to practitioners and policymakers seeking to prioritize limited public resources.

Of course, this lack of information should not be used as a justification for postponing or delaying potential reforms. False confessions should certainly be evaluated and thoughtful efforts should be made to avoid them, including the accelerated adoption of technologies that improve accuracy in criminal investigations. These efforts can be improved, and adoption of them accelerated, through rigorous research that increases our body of knowledge about these errors, their frequency and their prevalence in different types of cases, ensuring that our proposed reforms are efficient and effective.

A similar point was made about both the expansion and the limits of our knowledge about eyewitness identification, often considered the leading cause of conviction integrity errors:

We know that mistaken eyewitness identification is one of the leading factors among catalogued exonerations, present in 39% of 1,236 cases currently in the National Registry of Exonerations. We also know from a variety of well-supported scientific experiments that double-blind, sequential lineups can reduce false positives in eyewitness identification. We do not know, however, whether lineups that do not conform with this structure are actually *causing* wrongful convictions, or are simply present in a substantial percentage of wrongful convictions. Similarly, because we know only a small subset of cases with wrongful convictions, we do not know if non-double-blind, non-sequential lineups would continue to be a substantial subset of a complete set of wrongful convictions. Finally, and most disturbing, we do not know how many eyewitness identifications occur in cases each year. As a result, it is difficult to marshal the data necessary to make a compelling argument to legislatures or law enforcement as to the true scope of the problem. Law enforcement agencies engage one at a time, based on the individual proclivities of their leadership, and broader analysis is near impossible.

The fact that virtually all cases in the conviction integrity data set are felony trial convictions creates another potential bias. This is an extraordinarily small subset of all cases in the criminal system.⁶ As one participant stated:

[W]e haven't even looked at misdemeanors where we intuitively think it's the overwhelming pressure of caseload which is forcing zillions of people to plea out. But there will be a greater number of wrongful convictions in misdemeanor cases than felony cases.

Finally, the data set is limited to overturned convictions, and thus contains virtually no data on "near misses," which in healthcare and aviation have provided valuable insights into seemingly innocuous routine activities or habits that lead to errors, but pass undetected in our analysis of the smaller data set. Expanding to include near misses will increase sample sizes, permitting more precise statistical analysis.

Two additional challenges arise from the current data around exonerations. First, reforms proposed to date have been supported by data derived purely from retrospective analysis. Data available for root-cause analyses of errors are limited to administrative data sets gathered to support a particular output, and lack the full data set that might have been gathered by a real-time investigation or analysis of the error(s). Such a prospective data set could provide important understandings about motives, current awareness, etc. that could identify additional root or proximate causes of error and suggest different remedies. Second, the post-conviction litigation that generates the case analyses typically occurs years after the system errors that caused the error in the first place. These lengthy feedback loops impede analysis of errors and thus impede thoughtful reform, as the individuals and supervisors who committed the error are generally no longer in their roles, and current participants have incentives to dismiss and disregard the errors as irrelevant in the current regime.

Several participants in the Dialogue who have been the most vocal proponents for criminal justice reform were forthcoming about the limitations of the data supporting their proffered reforms. At the same time, participants in active law enforcement roles agreed with the need to implement and test proposed reforms, notwithstanding the limitations of existing evidence. Additional research is needed, both to ensure that conclusions about the causes of error are accurate, complete, and properly prioritized, and to educate stakeholders across the country about the need for cultural and procedural change within the agencies they control.

⁶ One participant stated that 99.7% of all cases were resolved by plea bargain in his jurisdiction.

The Applicability of a Systems Approach.

Participants readily accepted the appeal of a systems approach to reducing error as a unifying approach that could bring all components of the criminal justice system together around a shared desire for the fair administration of justice.

The systems approach has been used extensively in other important settings, including medicine and aviation. On the surface, analogizing a wrongful conviction to a surgical error or a plane crash can be quite compelling. Each is a striking, dramatic error with substantial impact not only on the lives of those directly affected, but on their families, friends, and the community. Each occurs despite the best efforts of thousands of well-intentioned professionals who truly want to see the right result take place. And each is viewed as a violation of the trust invested in the participants in the system by the general public, causing a loss of the system's legitimacy.

Participants intuitively embraced the idea that reducing errors in criminal justice could benefit from experience in quality control in healthcare and aviation. The three systems share many fundamental characteristics. Like healthcare and aviation, criminal justice is a complex, fragmented industry with tens of thousands of hard-working, well-intentioned individuals trying to manage a daunting caseload and achieve the right results. At the same time, participants were quick to point out structural differences between healthcare and aviation, on the one hand, and criminal justice on the other that could serve as barriers to the successful implementation of processes for change that succeeded in healthcare or aviation.

First, both healthcare and aviation found ways to subsume their fragmented structures under a single umbrella, making it easier to develop a culture of data sharing and disclosure of errors. This function served to unify participants. In healthcare, most providers of care for an individual patient are within the same healthcare network, and are thus answerable to a single company; where this is not the case, insurance providers provide an additional umbrella function. In aviation, all stakeholders are answerable to a federal regulatory agency that provides the umbrella function.

By contrast, the administrative independence of each agency in the criminal justice system, be it federal, state, or local law enforcement, prosecutor, defender, or court, defies the umbrella approach. There are more than 3,000 counties across the United States, and virtually all have their own prosecutorial, defense, and judicial agencies, whose policies and procedures are similarly independent and diverse; this does not include the almost 18,000 police departments across the U.S. (One participant reported having over 50 separate independent police organizations,

each with different records handling and records management procedures, within the jurisdiction of a single District Attorney's Office.) The difficulties of standardizing and sharing data in such a "system" are obvious, as are the possibilities for administrative error.

Furthermore, the fragmentation in criminal justice occurs within a system that is more adversarial than healthcare or aviation. When access to data often makes the difference between "winning" and "losing" a case, and when the accountability of individual participants and agencies is maintained through litigation and media approbation, the disincentives to share data among agencies, let alone across jurisdictions, become obvious.

How, then, might a systems approach be implemented to improve the fair administration of justice? Participants focused on opportunity for the Quattrone Center to serve as a new type of entity to collaborate with practitioners, one that is: *unbiased*, focused on supporting the core missions of each part of the criminal justice system; *independent and objective*, combining the credibility of an external investigator with a focus on data rather than a specific agenda; and *collaborative and pragmatic*, partnering with criminal justice practitioners to conduct field and research experiments in a cyclical fashion to: (1) study areas of mutual interest to practitioners and researchers; (2) gather data and generate knowledge about "best practices" in criminal justice reform; (3) educate criminal justice stakeholders about the benefits of the proposed reform; (4) act as an agent of cultural change to broadly implement the proposed reform; and (5) evaluate and refine the proposed reform over time, before initiating the cycle again.

With the combined desire to continue progress towards improving the criminal justice system in the short term and build an improved framework for system improvement over the long term, the Dialogue turned to the need for more and better data as a prerequisite for additional research into conviction integrity, and how the Quattrone Center could effectively partner with real-world practitioners in criminal justice.

The Need for More, and Better, Data.

Many participants in the Dialogue discussed their dissatisfaction with the availability and condition of criminal justice data needed to progress beyond the current state of knowledge around conviction integrity. One participant summarized the challenge simply by saying, "criminal justice is very bad at maintaining statistics on easily observable issues."

Researchers expressed surprise and concern that even foundational data figures such as the number of innocent people who have been incarcerated, or the number of cases involving eyewitness identifications across jurisdictions,

remain stubbornly unavailable. In part this is due to the aforementioned fragmentation of the system, and in part it is due to the widespread use in government agencies of outdated and proprietary information systems. As one participant noted,

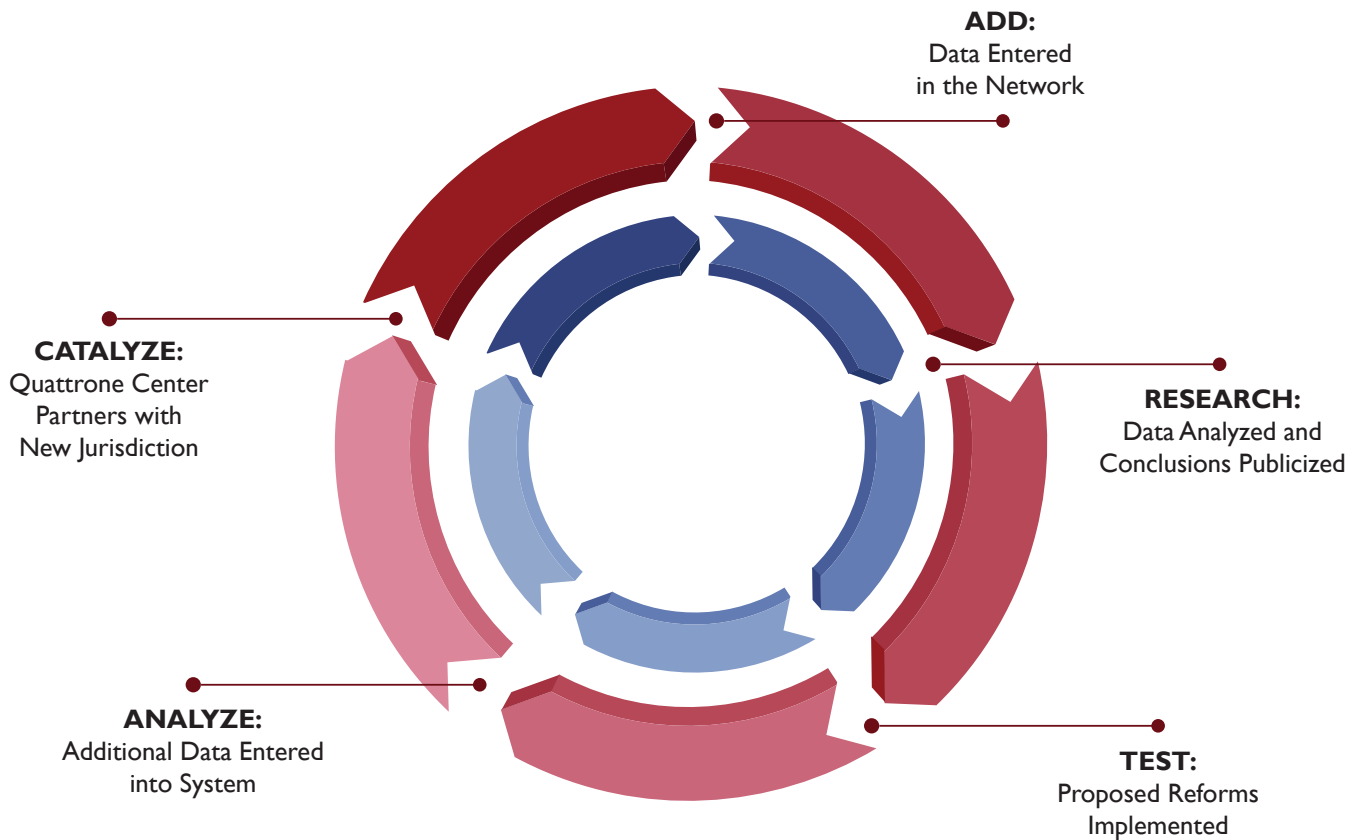
[G]overnment IT is terrible. For all the time police fill out stuff, we aren't gathering the right things, we don't know how to analyze them, and there's terrible sharing across offices. And the government IT is decades old and there isn't money to upgrade.

The administrative data these systems provide have numerous limitations. First, each jurisdiction collects different data in different ways, and even within jurisdictions there is little standardization in data input. This makes “apples to apples” comparisons challenging. Second, the data are collected as inputs needed to generate specific administrative outcomes. As a result, additional information needed to judge whether a particular action is “successful” is often lacking. And finally, we lack data on how and why decisions are made in any area of administrative discretion, and there is no retrospective way to unpack what the impulses were. As a result, for example, we have virtually no systematic understanding of how different jurisdictions decide to detain various individuals at the time of arrest, how they pursue plea bargaining, or how they make charging decisions, to name a few examples.

While the needs for more and improved data are considerable, participants noted that with every need comes an opportunity. Researchers described a number of opportunities for improvement in gathering, standardizing, and sharing data that would greatly improve both our knowledge of the criminal justice system and system errors in investigation and conviction integrity.

A credible, independent entity with expertise in data collection and the integration of disparate data sets could create a shared and networked data resource that would facilitate additional research into potential enhancements to conviction integrity. One example provided was Github, a shared software development platform. The platform maintains version control and tracking control over all software development projects, and allows people to collaborate using open source to share technology tools that they all contribute to. Each participant in the network benefits from the insights of all the others, rather than the simultaneous creation of thousands of competing projects covering the same ground. This resource could generate a “virtuous cycle” of jurisdictions volunteering to contribute their data in order to gain the benefit of the increased analytics made available by participants in the network. The production of insightful foundational data from even a few small jurisdictions could entice other jurisdictions to contribute their data, expanding the power of the network and in turn encouraging further participation.

Virtuous Cycle of Data Networking



Practitioners stressed that such a data generation initiative would only gain traction over time, as the entity charged with generating and maintaining the data builds credibility with practitioners for its truly unbiased and data-driven approach, and that data are appropriately stored and secured. Thus, expertise in information technology, network and data standardization, maintenance, and security and an emphasis on open source collaboration and workflows, coupled with high-level anonymization of data, would be necessary skill sets for any data centralizer.

Creating a Culture of Disclosure.

One of the core factors in the success of the systems approach in other industries has been the replacement of a culture of individual blame with a “just culture” that views individuals as good-faith participants in the system, and prizes the disclosure of errors and near misses as necessary for the enhancement of the system as a whole.

This sort of disclosure is broader than, and distinct from, legal obligations to disclose information that may be used as evidence in criminal cases. Still, participants paused briefly to acknowledge the important and serious issue of prosecutorial misconduct and situations where exculpatory evidence is deliberately withheld, considering it a worthy issue of study for the Quattrone Center. One practitioner stated that *Brady* violations were the largest cause of error in his jurisdiction. However, as another practitioner stated:

[T]here are bad apples, and that is understood, and they are the individuals that drive the conversation about wrongful convictions. The Quattrone Center provides a wonderful opportunity to change that conversation, because a conversation solely about wrongful convictions will very quickly become a conversation focused solely on the bad seeds, and we aren't going to fix systems by ferreting out bad seeds. Instead, the potential is in a collaborative approach to conviction integrity.

While consensus around a collaborative, non-punitive process was easy to achieve behind the closed doors of the Dialogue, it is clear that the adversarial nature of the criminal justice process has not created a culture that encourages the disclosure of errors. Indeed, participants noted the presence of a “gotcha mentality” in criminal justice that limits enthusiasm for sharing data about errors or near misses:

[T]here are police departments that are being sued and that are paying millions of dollars to change systems. This makes the people in those departments defensive. And because of that, it's hard for them to say that they know there is a problem, or to disclose the problem, or to work collectively to fix the problem. So we all need to get on the same page and work together. This is too important to get it wrong.

The healthcare and aviation fields have taken somewhat different approaches to the problem. Healthcare has embraced efforts to share data throughout a health system, including electronic health records and morbidity and mortality (M&M) conferences that are not made publicly available. The aviation industry benefits from a centralized database, the Aviation Safety Reporting System (ASRS), which encourages the anonymous disclosure of information related to actual mistakes or perceived “near misses.” The ASRS is administered by NASA as an independent agency, and a key to its success in encouraging disclosure is an immunity policy that states in part:

[T]he FAA will not seek, and NASA will not release or make available to the FAA, any report filed with NASA under the ASRS or any other information that might reveal the identity of any party involved in an occurrence or incident reported under the ASRS. There has been no breach of confidentiality in more than 34 years of the ASRS under NASA management.⁷

Additional research and experimentation will be needed to understand whether and how these models can translate to a similar culture of disclosure in the criminal justice environment. Participants were in agreement, however, that the voluntary contribution of additional data about errors and near misses into a central location would greatly enhance research into causes of error, and was attainable. This optimism reflects both a cultural change reflected in the innocence movement and in the creation of Conviction Integrity Units that have emerged across the nation, and an awareness of other instances in which law enforcement agencies embraced anonymous information disclosure as a tool to improve safety. For example, one participant described the realization of a California police department that more of its officers were killed in traffic accidents than in assaults or altercations with suspects. The agency determined that it needed near miss data on traffic collisions involving officers to fully understand how to reduce these accidents. To combat officer reluctance to provide the information, the department created an independent data collector; a group of motor officers then agreed to participate in a reporting project. The result was new procedures for officer traffic safety that not only reduced injuries and deaths, but also reduced the police department's risk management premiums. The potential for an academic research facility to take on this sort of independent data collection and analysis seems clear.

Models for Real-World Collaboration.

Regardless of their individual roles in the criminal justice system, participants in the Dialogue were enthusiastic about the opportunities for system improvement that could arise from properly constructed partnerships between academic researchers and thoughtful, experienced criminal justice practitioners. Practitioners were excited about the presence of an unbiased, data-driven research hub to engage and educate practitioners about best practices that enhance the execution of their core missions. Researchers were similarly excited about the opportunity to work directly with practitioners to define valuable avenues of inquiry, and to use real-world data to better understand and improve actual outcomes in the criminal justice system.

⁷ <http://asrs.arc.nasa.gov/overview/immunity.html>.

Several participants discussed past experiences with field experiments gone awry for a variety of reasons (alone or in combination). Political or cultural issues, experiment design issues, and challenges with data gathering, sharing, or standardizing all have been, and remain issues in implementing successful empiric research. Even so, practitioners expressed an enthusiastic desire to partner with an academic research organization to conduct research collaborations that would:

- (1) Support the mission of the agency in question with specific, clearly articulated goals;
- (2) Provide frequent opportunities for input about the design of the research and discussion of results with the agency; and
- (3) Provide additional knowledge to the agency by:
 - a. Breaking down cross-agency informational barriers;
 - b. Providing insight into unseen biases or unwitting mistakes in the agency's activities; and/or
 - c. Allowing the agency to compare itself to other similar agencies.

It is perhaps a truism that in order for a collaboration to be successful, each participant must perceive a benefit. While the systems approach to reducing error provides a useful framework for uniting the missions of otherwise adversarial or separate collaborators, practitioners emphasized the need for an independent research hub to serve a translational role, combining researchers willing to collaborate on topics of study important to the agency and communications capabilities to explain to internal and external agency constituencies why the research is valuable, and how it furthers the core mission of justice. As one law enforcement practitioner stated:

[A]t the end of the year police departments are asked one main question: what's the homicide rate in your jurisdiction? The second question is about the case clearance rate for homicides. The media and general public don't care about crime rates for other crimes. If [the research partner] can't help us with that, [the project] is not going to get done.

While it was obvious to all involved that the necessary areas of study were both far broader than those stated above and far more nuanced, it is important to remember that government agencies and criminal justice practitioners are answerable to, and therefore may be affected by, the views of the public, the media, and elected officials. Thus, it will be necessary for researchers and practitioners to collaborate not only to define the metrics of success, but to communicate the importance of these metrics to the fair administration of justice to external constituencies.

Some participants noted that these constituencies (i.e., the public, the media, and legislators) often view criminal justice reform policies with great enthusiasm, and thus provide a clear benefit and added legitimacy to the implementing agency. In some cities, media attention on instances of wrongful conviction has created a climate of public support for the evaluation and release of individuals who could be proven innocent through scientific means that outweighed the political risk of appearing soft on crime, or of releasing an inmate who might commit other crimes. As a participant noted:

[W]hen the guy in the coffee shop says, that [wrongful conviction] was screwed up, and when that sentiment is out there in the public, it enables funding and the participation of people in the system to do things they otherwise won't do... For prevention and safety, the wrong decision on releasing someone can have a very large negative impact politically, and a good DA or police commissioner could lose his or her job on one decision that goes bad. That means that implementing these reforms around innocence requires people to take a risk, and that can be done by building a trust relationship with leaders. Credibility goes a long way to open doors and create changes.

To support the reforms, several of the practitioners participating in the Dialogue expressed an interest in working with researchers to “sell change” both internally to their colleagues in criminal justice, and outside to the media, the public, and legislators. They were eager to take advantage of principles of innovation dissemination, cultural change management, and/or organizational management taken from the literature of business that a research partner could provide.

In summary, practitioners were emphatic about the need for pragmatic research with a clear value proposition linked to the mission of the office, and excited about the possibility of collaborating with researchers to generate the understanding needed to implement and make permanent processes that reduce error.

As discussed above, the systems approach looks at criminal justice longitudinally, from commission of crime through sentencing and appeals. This is similar to following an individual patient's interactions with various physicians, nurses and healthcare facilities during the course of care. Thus, successful approaches to systems improvement will need to engage multiple government agencies participating in investigation, prosecution, adjudication, sentencing and incarceration of an individual criminal case. This was described as “de-siloing” the criminal justice system, creating in its place a universal “culture of integrity”:

[P]rosecutors say that they are being hounded by the defense; defense attorneys say that prosecutors are hiding evidence from them. This bunker mentality is caused in part by . . . the system. Part of what results,

however, is the equally disheartening idea from all parts of the system that ‘accuracy isn’t my job.’ The people gathering the evidence believe that there are lots of people downstream in the process who can decide whether the evidence is valid or not. As a result, nobody is really in charge of the fundamental question of integrity of the process. So what the Quattrone Center could do well is to propagate a culture of integrity. Currently people get indoctrinated through their job. Oh, you’re a prosecutor, or a defense attorney, and so this is how the system works and what you should be doing. If we had lots of law enforcement people in the building across agencies speak about the issues, we could have more people invested in the outcomes of the process.

To be successful, projects must have clearly defined, objective, and measurable goals that practitioners agree will improve the integrity of the system as a whole. In addition, it is essential to design the programs carefully, so that the data generated will be widely accepted as accurate and thorough. As one example, comparative research using randomized data inputs and controls are essential to understanding the effect of new programs and proving causation, rather than simply correlation of new programs to hypothesized results.

Practitioners at the Dialogue agreed that government agencies would be more likely to provide data within their jurisdiction’s control in exchange for insight into how to make actual improvements in the administration of justice. As such they were eager to engage in a mutual discussion of what information should be gathered to answer questions of this nature. Two successful examples of this were discussed, one with a police department in the southern United States evaluating racial disparities in the charging of specific crimes, and another in the eastern United States evaluating due process, right to counsel, and disproportional representation of juveniles based on race. In each instance, the jurisdictions worked with researchers to identify metrics that might show biases in the treatment of various individuals traveling within the criminal justice system, as a first step to addressing and removing those biases. It is notable that these collaborations were enabled by existing data in the possession of the jurisdictions in question, suggesting the feasibility of revealing hidden behaviors through extant data as a way of initiating the “virtuous data cycle” described above. It is also notable that this research has led to new metrics for evaluating behavior in other jurisdictions that could lead to errors in the fair administration of justice, and that the metrics themselves could be used to promote improvements in the jurisdictions that were enthusiastically received by the general public in those jurisdictions. Participating in and disseminating such new analytics, sometimes captured under the banner of “Moneyballing’ criminal justice,” is an important value of the systems approach.

Another important component to successful research/practitioner collaboration is the need for comparative research. Studying one factor in isolation provides information about that factor; studying two versions of the same factor provides insight into how the differences impact outcomes.

Participants described a model for academic/practitioner collaborations that would enable expanding comparative research over time, similar to the virtuous cycle for data gathering. Testing a specific hypothesis for error reduction would begin as one or two pilot programs in carefully chosen jurisdictions. Once the data are gathered and information is known in a single jurisdiction, researchers could expand their research in two dimensions: (1) contacting other jurisdictions to gather the data necessary to compare their performance on the same metrics; and (2) expanding the inquiry in the original jurisdiction to other metrics that will provide additional insights on the subject at hand. In this way, the systems approach can publicize “bright spots” that are comparatively advanced or that have already embraced effective reforms; this will encourage other jurisdictions to partner and contribute their data, and provides passive encouragement for jurisdictions whose data does not measure up to the “bright spots” to self-correct and reconsider adoption of the reforms in question.

One participant envisioned the utility of enhanced metrics used in comparative analyses in this way:

[I]t’s hard to know how well the justice system works. In contrast, we know where the good schools and the good hospitals are. The reason is that we know about student-teacher ratios and test scores. But we don’t do this for criminal justice systems, in part because there is no constituency pushing for better data. The Center should play a leadership role in pushing for county-level criminal justice data. These local counties across America all have their own systems, and they are allowed to operate as their own fiefdoms. Let’s match the best counties with the worst counties to help them learn from each other.

As with any good relationship, field experiments to test potential best practices and reduce system errors will require constant communication between researchers and practitioners.

Practitioners expressed enthusiasm for models of longer-term, cyclical collaborations; indeed, these cycles of collaboration offered opportunities for the academic enterprise to build trust with the agencies over time, which was deemed necessary to fuel more meaningful change. One model suggested was “seconding” or “embedding” researchers within a particular government agency. The researcher would be employed by the research entity but would work in the office of the government agency, observing real-life workflows and suggesting areas of study. As one participant with prosecutorial experience stated, “every DA’s Office should have a statistician on staff, but it’s hard to convince the County Manager to fund one.”

Researchers also expressed enthusiasm for this sort of collaboration, and several mentioned a “laboratory” model where the research entity expands its research over time in close partnership with a variety of agencies within the same geographic jurisdiction.

Areas of Study: Upstream and Downmarket.

Having established the enthusiasm for a systems approach to reducing errors in criminal justice and articulated principles for successful field collaborations to test such an approach, the participants in the Dialogue turned to a discussion of productive areas of study. A summary of the advice might be to go “upstream and downmarket.”

Numerous participants encouraged the evaluation of processes that were “upstream” of the judicial process:

We take the evidence in a case as given, but what we don’t know is the “sausage-making” of the evidence, the validity of the evidence and the machine that produced the evidence. So much of what happens later (i.e., what to charge, what motions to accept, and the ability of a defense attorney to investigate it) is driven by what the evidence is and how valid it is, that it is crucial to focus on the quality of the evidence that is being used by law enforcement and others downstream.

At the same time, both researchers and practitioners in the room repeatedly advocated for a focus on aspects of the criminal justice system that may be more mundane and less high profile (i.e., “downmarket” areas of research). One example of this could be research into causes of error in the arrest or conviction of individuals for property offenses, as opposed to the more commonly researched serious violent felonies. Other examples involve the study of law enforcement or judicial processes; one participant suggested studying “habits,” such as the examination of why a particular patrolman did a particular thing at a particular place (e.g., research into “stop and frisk” practices). Foundational research on process differences across jurisdictions could readily be combined with near miss data to reveal seemingly innocuous actions that nonetheless may be causative of downstream errors. The Quattrone Center could then work with, for example, police trainers or attorney supervisors to design checklists or other processes that would minimize these unproductive habits and implement better ones.

Another mundane process with a potentially significant impact on conviction integrity is case or records management. This can be a substantial challenge for a district attorney’s office, which receives case files from multiple police departments within the jurisdiction, each operating independently with its own customized record-keeping system; these differences can be compounded by variances in how individual police officers completed their reports.

Finally, it was noted that there are areas in criminal justice where we have no formal knowledge of people's behavior or incentives, such as plea bargaining or charging decisions. In terms of understanding prosecutorial discretion or decision-making, there is almost no data and such data is very difficult to obtain in a credible fashion. More is known about police practices, but in that setting, the spread of our understanding is quite slow. And, in terms of reforms that are generally regarded as helpful, such as double-blind, sequential eyewitness ID procedures or standards for the retention of physical evidence in violent crimes, this expertise could help evaluate and overcome the barriers to rapid adoption across diverse jurisdictions.



CONCLUSIONS

1. There is broad enthusiasm for the application of a systems approach to eliminate preventable errors that impair the integrity of the criminal justice system. As an academic research institution, the Quattrone Center could support such an approach by taking steps to:
 - a. Raise awareness of the need for improvements in investigation and conviction integrity and the overall fair administration of justice;
 - b. Conduct research to improve the foundation of knowledge regarding systemic errors occurring in criminal justice;
 - c. Create a repository for criminal justice data, including information about criminal justice errors and near misses, to facilitate innovative research into the causes of errors and to generate process improvements to prevent future errors;
 - d. Promote a culture of voluntary disclosure and non-recrimination for unintentional mistakes, errors, or near misses in criminal justice; and
 - e. Collaborate with criminal justice practitioners to implement improved processes that reduce or eliminate preventable errors in the administration of justice.
2. The application of a systems approach to criminal justice is complicated by the highly fragmented, independent and adversarial nature of the criminal justice system, which lacks uniform standards on a wide range of practices. There is a significant need for greater use of information technology and a serious lack of data collection, storage, and integration to fuel a systems approach across jurisdictions.
3. The time is ripe for an independent, data-driven research institution to bring together all participants in the criminal justice system to design, test, disseminate and help implement improved criminal justice processes. Rigorous empirical research, comparative collaborations, and new metrics for measuring criminal justice practices and outcomes can enhance the legitimacy and performance of the criminal justice system.



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