March 15, 2010

SUBJECT: *Research in Review*

TO: Executive Staff
Superintendents
Other Readers

FROM: Kristofer Bret Bucklen
Chief of Projections and Population Statistics

Enclosed please find Volume 13, Number 1 of *Research in Review* (RIR).   This issue contains several pieces which I believe our readers will finding interesting and informative, including a review of Mark Kleiman's acclaimed new book "When Brute Force Fails", a review of a recent study by Alfred Blumstein and Kiminori Nakamura examining estimates of the point of "redemption" among individuals with a prior criminal record, as well as the first piece in a new RIR series on criminological theory and its relevance to criminal justice policy.

With this issue, we say farewell to RIR's founding editor and long time contributor Dr. Gary Zajac, who has accepted a new position at Penn State University and will be leaving the Department at the end of this month.   Dr. Zajac started RIR in 1998 with the goal of making correctional (and criminal justice) research more accessible and relevant to policy-makers.   I have had the privilege of serving as co-editor of RIR with Dr. Zajac since late 2002.   We are indebted to his work on RIR and will continue the publication in his tradition.   Further, we look forward to a research partnership with Dr. Zajac in his new role at Penn State, and are hopeful that we can persuade him to contribute to future issues of RIR.   I know our readers will join me in wishing him well in his new position.

We welcome your feedback on RIR.   We also welcome your suggestions for specific topical areas for future issues. While we cannot promise that we can produce an issue in response to all suggestions offered, we are very much interested in knowing what questions and topics are most interesting to our readers. Future issues of RIR will continue with a review of our own departmental research projects, as well as article reviews, book reviews, and other relevant pieces.

Thank you for your continued interest in *Research in Review*.

Volume 13, Number 1 of *Research in Review* contains three pieces. The first piece (page 2) is a review of Mark Kleiman's new book "When Brute Force Fails". In this book, Kleiman outlines his proposal for how to effectively reduce both crime and incarceration rates simultaneously. Kleiman suggests that the natural place to start is community corrections (specifically probation/parole supervision). His proposal involves increasing the certainty and swiftness of sanctioning for probation/parole violators by: 1) clearly communicating behavioral expectations up front to probationers/parolees, 2) frequently and closely monitoring their actual behavior, and 3) consistently sanctioning infractions. Such an approach is referred to as a 'focused deterrence' strategy. He draws upon several successful applications of this model (most notably the H.O.P.E. program in Hawaii) to demonstrate how lengthy incarceration stays and a wide reliance on treatment programming for probation/parole violators is largely an inefficient use of resources. Kleiman's book is receiving a lot of attention in the field and is worth taking seriously.

The second piece in this issue of RIR (page 5) is the first in a new overview series on criminological theory and its relevance to policy. The primary goals of this introductory piece are to 1) describe why theory is important, 2) discuss some of the fundamental issues in theory, and 3) briefly summarize the major existing criminological theories. Future issues of RIR will build upon this primer to describe individual theories in more detail and outline their policy implications.

The third piece in this issue of RIR (page 9) is a review of a recent article by Alfred Blumstein and Kiminori Nakamura entitled "Redemption in the Presence of Widespread Criminal Background Checks". In their study, Blumstein and Nakamura examine criminal history records among 88,000 individuals first arrested in New York State in 1980, to estimate how long they needed to stay "clean" in order for their risk of arrest to essentially be the same as: 1) the general population, and 2) those who had never been arrested. Results were broken down by age at first arrest and crime type. Essentially they found that an offender needed to remain crime-free for somewhere between 4 and 9 years (depending on age at first arrest and crime type) in order to pose a comparably low risk of arrest. They refer to this point as a point of "redemption" and outline several policy proposals for enhancing redemption opportunities (and specifically employment opportunities) once this acceptably low point of risk has been reached. Their study is particularly relevant to prisoner reentry discussions.

Among the oldest ideas in criminal justice is the "deterrence principle", which states simply that crime will tend to decrease as the certainty, severity, and swiftness of punishment increases. The 18th century Italian political philosopher Cesare Beccaria, who is often considered to be the father of criminology, was the first to formally outline the "deterrence principle". Since Beccaria's time, a vast body of research has examined the efficacy of this principle for influencing crime rates and individual criminal behavior. Due to a constellation of factors, including disappointing research results, a changing political tide favoring rehabilitation over punishment, and concerns over a costly and vastly expanding U.S. penal system, the "deterrence principle" has largely been discarded (or at least discounted) as a motivating force within the modern American correctional system. Recent deterrence research is more equivocal, however, suggesting that the "deterrence principle" may in fact be effective in reducing criminal behavior if used properly and targeted towards the right types of offenders (or potential offenders). Just as the offender rehabilitation literature points to certain conditions under which treatment programming can be expected to substantially reduce recidivism (e.g., treatment should be targeted towards medium to high risk offenders, should be intensive, should target criminogenic needs, etc.), contemporary deterrence literature similarly points to pre-conditions under which deterrence may be most effective. However, while the modern deterrence literature has been successfully applied to several recent and innovative policing strategies, it has had relatively little impact on policy within the field of corrections. With this backdrop, along comes Mark Kleiman's new book, "When Brute Force Fails", in which the "deterrence principle" is resurrected to "rescue community corrections" (as one reviewer of the book suggests). In one sense, the ideas in Kleiman's book are hardly anything new. In another sense, Kleiman's ideas represent a groundbreaking policy agenda with the potential to reshape how we think about corrections and crime control.

Kleiman begins his book by giving an historical accounting of crime and punishment in America. He describes how crime rates rose dramatically from the 1960s to the mid 1990s, while at the same time incarceration rates rose higher than that of any other industrialized nation. While crime rates have subsequently declined since the mid 1990s and are generally at their lowest point in decades, they are still at an unacceptably high level in comparison to previous generations and to other nations. It is estimated that the total annual damage caused by crime in America is approximately 10% of the nation's total GDP (or $1.4 trillion annually). Thus, we have too much crime and too much punishment in America, much more of both than we did just half a century ago. Kleiman goes on to describe "the trap" in modern criminal justice thinking; that is, viewing crime and punishment as an either-or proposition. Because crime rates have recently declined at the same time that incarceration rates have continued to rise, it is tempting to believe that we must either live with high incarceration rates or high crime rates. Kleiman refuses to accept this proposition, and sets out to describe how we can actually have less crime and less punishment (thus the subtitle of his book). He

makes a bold prediction, that if the ideas set out in the book are implemented on a large scale then the American criminal justice system could potentially cut both its crime rate and incarceration rate in half within 10 years.

The central premise of Kleiman's book is that the certainty and swiftness of punishment (not the severity of punishment) are most important for reducing crime. In fact there appears to be an inverse relationship between the severity of punishment and the certainty/swiftness of punishment, in which certainty and swiftness are reduced as the severity of punishment increases. For example, the death penalty is the most severe punishment option available within the American criminal justice system, but it is hardly a certain or swift punishment since there are many levels of appeal in place due to the high stakes involved. The public appears more willing to accept certain and swift punishment if delivered less severely. Kleiman draws upon other current deterrence research to support this conclusion that the certainty and swiftness of punishment are most effective in reducing crime. The problem he sees is that a broad strategy for increasing the certainty and swiftness of punishment across the entire criminal justice system would likely strain the system beyond its capacity and require significant public intrusion in order to increase the necessary monitoring and detection of criminal behavior. Further, there are ethical concerns related to the "over-policing" of citizens who have not yet committed a crime. Thus, Kleiman finds that a natural place to turn to for increasing the certainty/swiftness of punishment is community corrections, namely probation and parole. Those under probation or parole supervision are already in the criminal justice system and are subject to monitoring. Further, since technical violations of probation/parole are not typically serious criminal infractions, they are subject to relatively less severe penalties and thus make an ideal place to start for increasing the certainty/swiftness of sanctioning. But Kleiman points out that focusing heavy enforcement attention on all probationers/parolees is still incredibly inefficient and would require significant resources. So Kleiman further refines his strategy by drawing on game theory in mathematics, demonstrating how concentrating on just a subset of high risk probationers/parolees can serve as a "tipping point". Once the "tipping point" is reached, then only modest enforcement resources are needed to keep whole caseloads of probationers/parolees behaving. Kleiman refers to this as a "focused deterrence" or "dynamic concentration" approach. In essence, the idea is that once the real bad guys get the message then the message gets passed on down the line and broad behavioral compliance can be attained. The goal is to be smart on crime, by using the minimal amount of punishment (delivered consistently and swiftly) in order to enforce compliance.

The problem with the way probation/parole currently operates, as Kleiman sees it, is that sanctioning for misbehavior is done in an almost random manner. Offenders are cut many breaks, until eventually the system gets fed up, slams down the hammer, and sends them back to prison for a significant period of time. This is no way that we would train a child or a puppy, Kleiman points out. Offenders are impulsive, are focused on immediate rewards, and are largely untroubled by delayed or uncertain punishment. So Kleiman's strategy is to provide quick and consistent enforcement among probation/parole violators using the minimum dose of punishment. The three components of Kleiman's model are: 1) up front communication of behavioral expectations, 2) frequent and close monitoring of actual behavior, and 3) consistent sanctioning for infractions.

Similar approaches have been tried by the police in Boston (the Boston Gun Project) and New York City (Broken Windows policing), with a high degree of success in reducing crime rates in both cases.

Up to this point in the book, Kleiman mostly draws on theory. Aside from the handful of successful police demonstrations, how are we to know that this strategy can actually work? This brings us to what I believe is the most exciting and practical part of Kleiman's book. In Chapter 3, Kleiman reports on an experiment in Hawaii (the H.O.P.E. project) in which his approach was tested among a group of probationers. The experiment was initiated by Judge Alm, a progressive judge who was tired of seeing the same probation violators consistently coming before him for revocation hearings. In looking for a solution, Judge Alm decided to test Kleiman's theory. He started with a small group of high risk, repeat probation violators (most were serious meth addicts). He rounded them up and communicated to them that it was a new day and that they were going to be sanctioned consistently and immediately for every single violation that they committed. He said that any violation was guaranteed at least a weekend in jail. Then he set up a system to monitor them closely. He developed a call-in system, where the probationers in the experiment had to call into the probation office every single day. If their name was selected, based on a random draw, then they had to report within 24 hours in person for a drug test. They were guaranteed to have at least one drug test a week. Judge Alm expected to be even more overloaded than he was previously with revocation hearings. But surprisingly the number of revocation hearings started to drop rather quickly. The probationers on the caseload got the message. Eventually the H.O.P.E. project became so successful that it was adopted by other judges in Hawaii and implemented on a larger scale. Although Kleiman doesn't report in detail on the evaluation results in his book, his evaluation report was released by the Department of Justice shortly after his book was published. The results of H.O.P.E. were phenomenal. In a random experiment where half of probationers were assigned to H.O.P.E. and half were assigned to supervision as usual, the re-arrest rate for H.O.P.E. probationers was only 21% compared to a 47% re-arrest rate for regular probationers. Positive drug tests for H.O.P.E. probationers was 13%, compared to a 46% positive drug test rate for regular probationers. And even better, these positive results were accomplished with less overall time incarcerated for H.O.P.E. participants. The average number of incarceration days for H.O.P.E. participants was 138 days, compared to 267 days for the comparison group; thus, the H.O.P.E. participants demonstrated more than a 50% reduction in recidivism while spending only half of the time incarcerated as the comparison group. Further, little treatment programming had to be delivered to H.O.P.E. participants in order to generate these recidivism reductions. Despite the fact that the majority of the probationers were meth addicts, only 20% participated in any kind of treatment. Treatment was simply unnecessary in most cases.

Aside from demonstrating how deterrence can work to significantly reduce crime (e.g., through targeted, certain, and swift sanctioning among probation/parole violators), I think that the book holds a few other implications. First, I think Kleiman's research demonstrates that we can see significant reductions in recidivism for probation/parole violators with much shorter incarceration stays. Given that probation/parole violators are a significant contributor to rising incarceration rates in many states, this is a useful finding. Second, I think that Kleiman's book points out that an over-reliance

on treatment programming may be an inefficient use of resources for a significant proportion of probation/parole violators. The reality is that many probation/parole violators have already failed multiple times at the same treatment programs. Kleiman demonstrates that behavioral compliance can be attained without having to rely primarily on treatment. In fact, to the extent that incarceration time for violators has to be extended in order to accommodate treatment completion, then treatment programming may actually be working against us in many cases. Third, I think that Kleiman's book points to the need to adopt an array of tools and technology (e.g., GPS monitoring) for more careful monitoring of probationers and parolees in order to be able to detect and sanction consistently. Kleiman's book is the most interesting and exciting book in criminal justice that I have read in some time. The book has received a significant amount of attention from policymakers, practitioners, academics, and the media alike, and is sure to continue to generate further buzz over the next several years. In my opinion, given the extremely positive crime reduction and prison population reduction results from the H.O.P.E. experiment in Hawaii, there is no reason for Kleiman's approach to not be tried everywhere. The approach is in line with a broader movement in criminal justice to get "smart on crime", reducing crime while at the same time cutting costs. At a time when the field of community corrections has been stagnant in terms of new ideas for reducing recidivism, Kleiman's book brings a new application and a breath of fresh air to a very old idea.

A PRIMER ON CRIMINOLOGICAL THEORY AND WHY IT IS IMPORTANT TO POLICY

by

Kristofer Bret Bucklen

Why is theory important? Who cares about theory? Isn't theory a bunch of abstract ideas that impede practical policy? These are the types of questions frequently heard from policy-makers and practitioners when discussions of theory arise. Unfortunately the result has all too often been that theory is mostly discarded or given little attention when crafting public policy. The criminal justice field is no exception, despite a rich body of criminological theory developed over the past two centuries. Those who are involved in the theoretical enterprise are in large part responsible for this lack of relevance of theory to practice, primarily because they fail to make theory accessible and understandable to policy-makers and practitioners. With this issue of RIR we bring our readers the first of what we anticipate to be an ongoing series of summaries of criminological theories.[1] The aim of this series is to make criminological theory more relevant to policy development. This first piece is intended to serve as a primer on criminological theory with three main goals: 1) to describe why theory is important, 2) to discuss some of the fundamental issues in theory, and 3) to briefly summarize the major existing criminological theories.

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[1] Our readers may recall that we have already summarized one theory (Self Control theory) in Volume 10, Number 2 of RIR.

Why Theory Is Important

A theory is a set of interrelated propositions intended to explain a phenomenon or causal process. Theory is important to policy for at least four reasons. First, theory is important because it is already implied. Every single policy is based on some theorized link between cause and effect. Sometimes the underlying theory is not articulated or made explicit. The underlying theory may not even have a formal name. But the theory is there nonetheless. Articulating the theory behind a given policy simply makes the underlying assumptions more explicit and transparent. One might refer to this as "putting our cards on the table".

Second, theory provides a unifying framework for bringing together disparate research findings in order to craft policy. Contrary to the popular mantra, data never simply speaks for itself. People tend to interpret data through the lens of a theoretical framework. A theoretical framework encompasses underlying background assumptions and worldviews (e.g., a view of the nature of human behavior, a view of the nature of social order, etc.). Depending on one's background assumptions and worldview, the same research findings and data can be interpreted in different ways. Even seemingly straightforward evaluation results of specific programs or policies can lead to different interpretations and policy recommendations. Conversely, seemingly contradictory research findings can often be rectified through a properly explicated theoretical framework. A theory is needed in order to again "put our cards on the table" and to have a starting point for interpreting a broad collection of research.

Third, theory is usually on the cutting edge of new ideas. Today's abstract theories often become tomorrow's best practices and revolutionary ideas. Many of the most practical aspects of our everyday life began as some sort of abstract theoretical concept. Consider for example the airplane. Flight was one of those revolutionary inventions that literally transformed the world. But before there were commercial airlines, a military air force, or people flying to the moon, there was a theory of aerodynamics that was perhaps viewed at the time as too abstract or irrelevant to everyday life. Another example is the theoretical conceptualization of the microchip, which led to the computer revolution. It is ultimately a short-sighted strategy for policy-makers and practitioners to simply limit themselves to already demonstrated evidence-based practices to the exclusion of potentially evidence-generating ideas arising from theory.

Fourth, theory gives insight into the types of questions that need to be answered in future research. One quality of a good theory is that it generates interesting puzzles to be solved. Theory can thus be extremely useful for developing a strategic research/evaluation agenda for the future.

Key Issues in Theory Development

Briefly, there are several key issues in theory development that help us to understand theory better. First, what constitutes a "good" theory? There is no universally accepted standard for what constitutes a "good" theory, but several principles apply (albeit in varying order of priority). A

"good" theory should: a) give an adequate account of past observations and known facts, b) be able to adequately predict the future, c) be testable, falsifiable, and not tautological or circular in reasoning, d) contain logically consistent components, e) be parsimonious, f) have clear policy implications, and g) pose interesting research questions.

A second issue is how to make sense of multiple (and sometimes seemingly contradictory) theories. The two primary options here are: 1) theory competition, or 2) theory integration. Researchers/theorists are often quite divided on whether individual theories should compete against one another or be made compatible. Theory competition usually involves quantitatively testing theories side by side through research and/or debating the internal validity of competing theories based on the logical consistency of their respective propositions. While theory competition is attractive because there at least hypothetically becomes a "winner" or set of "winners", competition is complicated by the fact that almost all criminological theories appear to apply to at least some sub-set of people and also that there is no agreed upon grounds for competition. The problem with theory integration, however, is that by integrating two theories we often violate background assumptions of each of the merged theories, and the newly integrated theory often becomes overly complex and thus difficult to understand or test.

A third issue involves the process of theory development. Theory development begins in one of two ways: inductively or deductively. Inductively generated theories begin by gathering observations and data and then synthesizing the data/observations into propositions which then become the theory (a "bottom-up" approach). Deductively generated theories begin with an abstract idea that is fleshed out into inter-related propositions and then later tested using "real world" data/observations (a top-down approach).

A fourth issue is the level of explanation of a given theory. Is the theory a macro-level theory or a micro-level theory? For example, some criminological theories set out to explain crime rates (e.g., why crime is higher in certain areas than in others), whereas other criminological theories set out to explain individual criminals (e.g., why certain people are more likely than others to commit crimes). Macro-level theories cannot necessarily explain individual observations, and vice versa. However, some "cross-level" criminological theories do purport to explain crime at both the macro and the micro levels. It is important at the outset to understand the level of explanation that a specific theory sets out to explain.

Key Criminological Theories

The chart below provides a basic overview of the key theories within criminology. This chart includes: 1) the name of the theory, 2) the major propositions of the theory, 3) the major policy implications that typically flow from the theory, and 4) some of the major names of those who have done important work in developing or testing the theory. Since this review is only intended as a primer, no further discussion of each individual theory will be provided at this point, but it is our aim that future issues of RIR will dedicate separate reviews to several of these specific theories.

SUMMARY OF MAJOR CRIMINOLOGICAL THEORIES

THEORY NAME	MAJOR POINTS	POLICY IMPLICATIONS	MAJOR THEORISTS
Anomie	A gap between the societal goal of economic success and the opportunity/ability to obtain this goal leads to strain which in turn leads to higher crime rates	Implement policies to assist offenders in obtaining economic success; Implement policies to de-emphasize or to counter societal focus on economic success	**Durkheim; Merton; Messner and Rosenfeld**
Biological/ Psychological	Criminals differ from non-criminals on biological and/or psychological traits	Use "medical model" approaches to "treat" individual criminals and attend to those biological/ psychological traits associated with criminality	**Lombroso; Mednick; Caspi; Moffitt; Wilson**
Deterrence/ Rational Choice	Criminal behavior is a rational choice influenced by weighing the costs and benefits; certain, severe, and swift punishment deters criminal behavior by raising the associated cost(s)	Implement strategies involving certain, severe, and swift punishment for criminal offenders	**Beccaria; Bentham; Cornish and Clark; Paternoster**
Differential Association/ Social Learning	Crime is learned through personal associations as well as through other positive and negative reinforcements	Develop interventions focused on discouraging ties to criminal/deviant peers; Develop rehabilitation programs focused on "un-learning" criminal thoughts, beliefs, values	**Sutherland; Akers; Warr**
Labeling	The stigmatization of punishment or of being labeled as a criminal or deviant leads to future criminal activity	Focus on procedural fairness in the criminal justice system; deemphasize punishment; develop community reintegration strategies	**Lemert; Becker; Braithewaite; Matsueda**
Routine Activities	Characteristics of people's daily routine activities produce more or less opportunity for criminal victimization to occur	Develop strategies that make situations/places less prone to criminal activity (e.g., more street lights); encourage individuals to change their dangerous routines (e.g., frequenting a bar late at night, etc.)	**Cohen and Felson**

Self-Control	A stable trait of low self-control predicts criminality	Develop prevention programs focused on helping parents to instill self-control in children; Develop rehabilitation programs to teach offenders self-control	**Gottfredson and Hirschi**
Social Control	The presence or absence of social bonds (family, work, community, etc.) predict criminal behavior	Reinforce connections to social institutions such as family, marriage, employment, school, religion, etc.	**Hirschi; Sampson and Laub**
Social Disorganization	Crime is caused by disorganized communities/neighborhoods that are characterized by criminal sub-cultures, a lack of social controls, and/or a lack of collective ability to maintain order	Develop community-based or neighborhood-based crime control strategies (e.g., community watch programs); Implement policies that build social cohesion in neighborhoods/communities	**Shaw and McKay; Sampson; Bursik**
Strain/General Strain	Pressure or strain from not being able to obtain success or achieve goals leads to criminal behavior	Develop programs/policies targeting the alleviation of individual strains or stressors	**Cloward and Ohlin; Cohen; Agnew**
Subcultural	Assimilation into a deviant or delinquent subculture produces criminal behavior	Implement community strategies to diminish delinquent subcultures; Implement rehabilitation strategies that challenge delinquent subcultural norms and offer pro-social alternatives	**Wolfgang; Anderson**

Due to advances in information technology and growing concerns over employer liability, the use of criminal background checks has increased steadily in the U.S. during recent decades. A large number of commercial sites also now offer access to repositories of criminal history data for the general public. This widespread availability of criminal history information has important implications for ex-offenders who are released from prison. A significant amount of attention has been spent in the prisoner reentry literature discussing the difficulties that ex-offenders have in securing employment once they are released from prison. The prevalence of criminal history information makes it difficult for those with some sort of criminal background to attain what

Blumstein and Nakamura refer to in this article as "redemption". It is well known among criminologists and practitioners alike that the risk of re-offending drops steadily as an ex-offender remains "clean" over time. But when is it safe to assume that an ex-offender presents a sufficiently low risk of re-offending? Unfortunately employers and policymakers have had little empirical guidance on when an ex-offender's risk of arrest is virtually the same as the general public.

In this article, Blumstein and Nakamura report on a study of criminal history records among 88,000 individuals arrested for the first time in New York State during 1980. Their arrest records over the following 25 years were examined to estimate when their risk of arrest was essentially no different than: 1) the general civilian population, and 2) those in the civilian population who had never been arrested. The results were broken down by age at first arrest and crime type (only burglary, robbery, and aggravated assault were examined in the paper). For those first arrested at age 16 (which was the age category with the largest number of cases), robbery offenders needed to remain arrest-free for 8.5 years, and burglary and aggravated assault offenders needed to remain arrest-free for 4.9 years in order to have the same probability of arrest as the general civilian population. As the age at first arrest decreased, individuals generally needed to remain arrest-free for a longer period of time in order to reach the same arrest probability as the general civilian population. This is consistent with the research literature on criminal careers, which suggests that an earlier age of first arrest (or "onset") is associated with a more extended criminal career. In comparison to just the sub-set of the general civilian population who had never been arrested, the results were broken down simply by violent crime and property crime offenders. In order to be close enough to having the same probability of arrest as someone who had never been arrested, a violent offender who was age 18 at first arrest needed to remain crime-free for approximately 8 years and a property offender who was age 18 at first arrest needed to remain crime-free for approximately 4.8 years. In all estimates, violent offenders needed a longer arrest-free period than property offenders in order to approach the same level of risk for arrest as someone who has never been arrested. The authors caveat their findings by pointing out that there is a confidence interval around these estimates, with the estimates depending on how risk averse one wants to be (i.e., how close one wants the offender group to be to the "never arrested" group before concluding that they essentially have the same risk of arrest).

To summarize, best estimates from this study suggest that an offender generally needs to remain arrest-free for somewhere between 4 and 9 years, depending on the offender's age at first arrest and crime type, in order to pose an acceptably low risk of re-arrest. Once this acceptably low risk level is reached, the authors conclude that "redemption" has essentially been attained by the ex-offender, at least in terms of criminal risk. This has important policy implications. The authors outline several policy options that might be implemented as a result of these findings. One option is for states to pass a statute to protect employers against liability for hiring ex-offenders who have remained crime-free for a period of time based on these estimates. Another approach could be to mandate that employers can only ask applicants about their criminal background within a certain timeframe in the past (again, based on estimates such as provided in this study). The estimates in this study could also serve as guidelines for state pardons boards in granting clemency pardons. Legislation could also be passed to prohibit criminal record repositories (especially publicly available repositories) from disseminating criminal history information after a certain period of time

has lapsed since the last criminal arrest incident. Commercial vendors would also be required to erase or seal criminal records after a period of time has lapsed. Finally, if these options are not viable, the authors suggest that another possibility is for states to issue a "certificate of rehabilitation" after the offender has remained arrest-free for the necessary period of time. This certificate could be an officially sponsored document of the government and could be presented to potential employers. As our knowledge grows in this area of inquiry, these and other policy options seem important to a society that values the possibility of redemption, especially given the increasingly large number of citizens with some sort of criminal history and the increasingly large number of offenders returning home from prisons and jails each year. This study provides groundbreaking empirical work on estimating this point of redemption.