

JUDGING RISK

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ABSTRACT

Risk assessment plays an increasingly pervasive role in criminal justice in the United States at all stages of the process—from policing, to pre-trial, sentencing, corrections, and parole. As efforts to reduce mass incarceration have led to adoption of risk-assessment tools, critics have begun to ask whether various instruments in use are valid and whether they might reinforce rather than reduce bias in the criminal justice system. Such work has largely neglected how decisionmakers use risk assessment in practice. In this Article, we explore the judging of risk assessment. We study *why* decisionmakers so often fail to consistently use quantitative risk assessment tools.

We present the results of a novel set of studies of both judicial decisionmaking and attitudes towards risk assessment. We studied Virginia because it was the first state to incorporate risk assessment in sentencing guidelines. Virginia has been hailed as a national model for doing so. In analyzing sentencing data in Virginia, we find that judicial use of risk assessment is highly variable. Second, in the first comprehensive survey of its kind, we find judicial attitudes towards risk assessment in sentencing practice quite divided. Even if, in theory, an instrument can better sort offenders in less need of jail or prison, in practice, decisionmakers may not use it as intended.

Still more fundamentally, in criminal justice, unlike in other areas of the law, one typically does not have detailed regulations concerning the use of risk assessment, specifying the content of assessment criteria, the peer review process, and standards for judicial review. We make recommendations for how to better convey risk assessment information to judges and other decisionmakers, but also how to structure that decisionmaking based on common assumptions and goals. We argue that judges and lawmakers must revisit the use of risk assessment in practice. We conclude by setting out a roadmap for use of risk information in criminal justice. Unless judges and lawmakers regulate the judging of risk assessment, the risk revolution in criminal justice will not succeed in addressing mass-incarceration.

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INTRODUCTION

America is experiencing a risk assessment revolution in criminal justice. The role of risk assessment is increasingly prominent at all stages of the criminal justice system, including policing, pretrial detention, sentencing, corrections, and parole.¹ The assessment of offender risk was a central feature of criminal sentencing prior to the mid-1970s, when jurisdictions throughout the United States began rejecting forward-looking risk assessment in favor of backward-looking retributive concerns. As jurisdictions have reconsidered use of incarceration, risk assessment has returned in new and more sophisticated ways.² Efforts to reduce “mass incarceration” have led to the adoption of risk assessment tools as an alternative to money bail, as a way to determine the length of incarceration and the intensity of probation or parole supervision, and to decide which mentally ill or substance abusing offenders might safely be diverted to treatment in the community. In its 2017 revision, the Model Penal Code prominently endorsed consideration of risk.³ As risk-based approaches have multiplied, critics have asked whether certain risk instruments are predictively valid and whether they might reinforce rather than reduce bias, including racial bias, in criminal justice outcomes.⁴ We argue here that the discussion about the role of risk assessment has neglected a separate and fundamental question: how do judges and other decisionmakers use risk assessment in practice?

That question now has a constitutional dimension. The Fifth Circuit recently affirmed a federal judge’s order that the cash bail system in Harris County, Texas, violates the due process clause because it adopted a “flawed procedural framework,”

¹ See, e.g. Sonja B. Starr, *The Risk Assessment Era: An Overdue Debate*, 27 *FED. SENT. REP.* 205, 205 (2015) (“we are already in the risk assessment era”); Cecelia Klingele, *The Promises and Perils of Evidence-Based Corrections*, 91 *NOTRE DAME L. REV.* 537, 564–67 (2015) (critiquing use of risk assessment in parole and probation); John Monahan & Jennifer L. Skeem, *Risk Assessment in Criminal Sentencing*, 12 *ANN. REV. CLINICAL PSYCHOL.* 489, 493–94 (2016) (describing use of risk assessment in sentencing); Sonja B. Starr, *Evidence-Based Sentencing and the Scientific Rationalization of Discrimination*, 66 *STAN. L. REV.* 803 (2014) (critiquing use of risk assessment at sentencing); Sandra G. Mayson, *Bail Reform and Restraint for Dangerousness: Are Defendants a Special Case?*, 127 *YALE L.J.* (2017) (describing use of risk assessment in bail). In addition, risk assessments are used in civil context, such as civil commitment to a mental hospital. For an excellent overview, see Jay P. Singh, Stal Bjorkly & Seena Fazel, eds., *International Perspectives on Violence Risk Assessment* 9-10 (2018).

² Jonathan Simon, *Reversal of Fortune: The Resurgence of Individual Risk Assessment in Criminal Justice*, 1 *ANNU. REV. LAW SOC. SCI.* 397 (2005).

³ Model Penal Code: Sentencing § 6B.09(3) (Am. Law Inst., Proposed Final Draft, approved May 24, 2017).

⁴ For example, then-Attorney General Eric Holder questioned the use of risk assessment, stating: “Using group data to make an individualized determination, I think, can result in fundamental unfairness.” *Holder: Big Data is Leading to ‘Fundamental Unfairness’ in Drug Sentencing*, PBS News Hour, July 31, 2014. For additional scholarly critics, see Starr, *Evidence-Based Sentencing*, *supra* note 1; Klingele, *supra* note 1; see also *infra* Part I.A.

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in which bail decisions by individual judges were arbitrary in practice.⁵ Judges departed from release recommendations by pre-trial services as much as 66% of the time.⁶ The Fifth Circuit found a state-protected liberty interest in pretrial release and found that the process violated due process rights of persons facing trial, although also noting that judges need not be required to provide written decisions explaining their reasons for denying release or bail.⁷ Additional litigation is pending in other Circuits.⁸ The implications of this due process analysis for settings in which judges are informed by quantitative risk assessment methods have not been fully explored. Moreover, the remedy, in rejecting a bail schedule that relied on individual ability to pay, and requiring individualized, case-specific findings, might not sufficiently eliminate troubling race and income-based disparities. Indeed, the Fifth Circuit ruling could lead to greater disparities and worse outcomes. We develop here how uneven implementation of risk assessment by judges and other decisionmakers may raise the same problems found unconstitutional in Harris County. Still more fundamentally, in criminal justice, unlike in other areas of the law, one typically does not have detailed regulations concerning the use of risk assessment, specifying assessment criteria, the peer review process, and judicial review.⁹ A model for the regulation of criminal justice risk assessment is urgently needed.

In this Article, we examine the judging and regulation of risk assessment. We present empirical evidence on how judges actually use (and fail to use) such instruments. Very little information has been available about the judicial use of these risk assessments.¹⁰ The focus has been on the validity of the risk assessment instruments themselves, but not on how well they are actually used in practice.¹¹ To address this question, we conducted a set of studies of judicial decisionmaking in

⁵ O'Donnell v. Harris County, Texas, 892 F.3d 147 (5th Cir. 2018); affirming, reversing and modifying in part, O'Donnell v. Harris County, Texas, 882 F.3d 528, 536 (5th Cir. 2018).

⁶ Id.

⁷ Id. at 160 (“We decline to hold that the Constitution requires the County to produce 50,000 written opinions per year to satisfy due process.”). The Court also relied on empirical analysis of outcomes in the county. Paul Heaton et al., *The Downstream Consequences of Misdemeanor Pretrial Detention*, 69 STAN. L. REV. 711, 786–87 (2017).

⁸ Describing the role of the American Bar Association in the Fifth Circuit as well as pending Sixth and Eleventh Circuit litigation, see Lorelei Laird, *ABA Files Amicus Brief Challenging Money Bail System As House of Delegates Considers Resolution*, Aug. 10, 2017, at http://www.abajournal.com/news/article/aba_amicus_brief_money_bail_5th_circuit.

⁹ For example, the federal Regulatory Improvement Act specifies the use of risk assessment for any “major rule” by a federal agency. Regulatory Improvement Act of 1998, S. 981, 105th Cong., § 623(a)(1) (1998).

¹⁰ One excellent Article has carefully examined judicial variation and use of the pre-trial risk assessment instruments used in recent years in Kentucky. See Megan Stevenson, *Assessing Risk Assessment in Action*, 103 MINN. L. REV. (forthcoming 2018), at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3016088. We are aware of no studies examining risk assessment at sentencing. We discuss one survey of judicial opinion and media accounts of judicial practices in local jurisdictions *infra* Part III.

¹¹ See, e.g. Richard Berk, *An Impact Assessment of Machine Learning Risk Forecasts on Parole Board Decisions and Recidivism*, 13 J. EXP. CRIMINOL. 193, 193 (2017) (noting we have “scant information about how actuarial risk assessments have affected practices and outcomes”).

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Virginia. We selected Virginia because it is considered by many to be a national model for the way in which it has regulated risk assessment. Virginia was the first state to formally incorporate risk assessment into its sentencing guidelines, to permit alternative sentences for lower risk offenders. Second, we selected Virginia because risk assessment is used at sentencing (in addition to its use in settings such as bail, in which decisionmaking can be rapid and based on little deliberation.)

We conclude, based on the Virginia data analyzed, that there is a need for new policy solutions. Judges failed to give alternative sentences to many thousands of eligible non-violent offenders, and when they did give alternative sentences, they did not order that offenders be released with or without community supervision, but instead typically ordered that time in state prison be replaced by time in a local jail. We also observe that in plea bargaining, prosecutors often did not consider risk assessment information in negotiations. When surveying Virginia Circuit Court judges, we learned that a sizable minority of judges had great discomfort with the goals and the use of risk assessment at sentencing, although their opinions were quite divided. Some judges described how they embraced risk assessment when used to reduce sentences for low-risk offenders. Others described risk assessment as just “another tool that aids but does not supplant judicial judgment.” Still others express extreme distaste for risk assessment; for example: “Frankly, I pay very little attention to the [risk assessment] worksheets... I also don’t go to psychics.” That some judges were not fully cognizant of the availability of risk assessment in sentencing was also unsurprising, given the almost complete lack of judicial training on the subject.¹²

These studies of judicial practice and opinion concerning risk assessment produced several important insights into how to better institutionalize use of risk assessment. Training and better-informed decisionmaking is needed. To change behavior, it is not enough to adopt a technical tool; attitudes towards the use of decisionmaking need to change. Nor is the problem of how to best implement generalized data to inform individual decisionmaking unique to the risk assessment setting.¹³ We describe how much can be learned from other settings in which well-regulated and structured decisionmaking models have been used. Just as judicial sentencing guidelines have been criticized not just for their content but based on how judges applied them and the assumptions they embody,¹⁴ we must look carefully at how judges apply risk assessment instruments in their courtrooms. Behavioral research on how decisionmakers make use of quantitative information can help to inform this task. A new approach is needed that takes account of interface between general quantitative risk information and the officials, such as judges, prosecutors,

¹² See *infra* Part II.C.

¹³ See, e.g. David L. Faigman, John Monahan, and Christopher Slobogin, *Group to Individual (G2i) Inference in Scientific Expert Testimony*, 81 U. CHI. L. REV. 417 (2014).

¹⁴ See, e.g. Matthew Van Meter, *One Judge Makes the Case for Judgement*, The Atlantic, Feb. 25, 2016 (describing a decades-long history of judicial criticism); José A. Cabranes, *Sentencing Guidelines: A Dismal Failure*, New York Law Journal, February 11, 1992; see generally Kate Stith and José A. Cabranes, *Fear of Judging: Sentencing Guidelines in the Federal Courts* (Chicago: University of Chicago Press, 1998).

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and probation officers, who take that information into account in decisionmaking. That interface must be evidence-informed and based on common goals.

Many states have made the use of these instruments advisory rather than presumptive or mandatory, and as a result, the discretion of the decisionmaker plays an important role.¹⁵ States have already had to revisit the use of risk assessment because of the ways in which decisionmakers used them, or do not use them, and localities have similarly begun to question how these systems are being used, including due to legal challenges.¹⁶ Even if in theory, a risk assessment instrument could better sort offenders more and less in need of correctional supervision, in practice, decisionmakers may not use instruments as intended. After all, part of the move to adopt risk instruments is dissatisfaction with traditional exercise of discretion.¹⁷ In this Article, we provide a roadmap for: (1) presenting risk information in a more comprehensible way to decisionmakers; (2) structuring decisionmaking to better make use of that information; and (3) accompanying these reforms with ongoing monitoring, through judicial review and open peer review, of data to assess on-the-ground use of risk assessment.

The need to get risk assessment right has never been more pressing. Every year, upwards of ten million people are arrested in the United States. Judges must then decide whether to jail people while pending trial. Every year, millions of people are convicted in the United States. Incarceration, which reached record levels, with increased prison populations in every year from 1970 to 2007, began to modestly decline starting in 2008, but so far the effect has been to halt growth rather than to substantially reduce the prison population.¹⁸ Efforts to reduce reliance on incarceration have been bipartisan, and they have largely focused on efforts to divert offenders, including less risky offenders, from jail and prison.¹⁹ That makes the task of accurately identifying such offenders all the more important. At the same time, mounting academic and public criticism has focused on concerns with lack of transparency and potential bias in the design of risk instruments.²⁰ Those concerns should extend to how officials use risk assessment in practice.

¹⁵ For a piece pointing out that abolition of parole meant “transferring risk discretion” to judges, but not asking how well-informed the use is of that discretion, see Kevin R. Reitz, “*Risk Discretion*” at *Sentencing*, 30 FED. SENT’G. REP. 70 (2017).

¹⁶ For a description of a review of over 1,500 cases in Chicago in which judges “routinely” or 85% of the time made bail decisions contrary to a new risk instrument, see Frank Main, *Cook County Judges Not Following Bail Recommendations: Study*, Chicago Sun-Times, July 3, 2016.

¹⁷ See, e.g. Crystal S. Yang, *Toward and Optimal Bail System*, 92 N.Y.U. L. REV. 1399 (2017).

¹⁸ Lauren E. Glaze & Danielle Kaeble, Bureau of Justice Statistics, *Correctional Populations in the United States*, 2013, at 2 (2014), at <http://www.bjs.gov/content/pub/pdf/cpus13.pdf>.

¹⁹ Right on Crime, <http://www.rightoncrime.com>; Newt Gingrich & Pat Nolan, *Prison Reform: A Smart Way for States to Save Money and Lives*, Wash. Post, Jan. 7, 2011.

²⁰ Jessica M. Eaglin, *Constructing Recidivism Risk*, 67 EMORY L.J. 59 (2017); Julia Angwin et al., *Machine Bias*, Propublica (May 23, 2016), at <https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>; Anna Maria Barry-Jester et al., *The New Science of Sentencing*, Marshall Project (Aug. 4, 2015), <https://www.themarshallproject.org/2015/08/04/the-new-science-of-sentencing>.

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In Part I of this Article, we present an overview describing the growing use of risk assessment instruments in criminal justice, including through the development of empirically validated quantitative tools to assess risk. We explain what risk assessment is, how it can be used and in what criminal contexts, the types of risk instruments used, and we summarize the types of approaches adopted in recent years. Second, we provide an overview of both the reasons why risk assessment has become attractive to so many lawmakers and policymakers in recent years and the concerns critics have raised about the design of those instruments. Third, we describe a wide variety of risk assessment tools in use, ranging in complexity from simple checklists or scorecards to algorithms. In the pre-trial context, New Jersey and Kentucky, for example, along with many local jurisdictions, use the Public Safety Assessment (PSA) developed by the Laura and John Arnold Foundation.²¹ State Supreme Courts, such as the Indiana Supreme Court, the Kentucky Supreme Court, the Nebraska Judicial Council and the New Jersey Supreme Court have ordered studies or sweeping changes.²² States are using risk-based instruments to assess conditions of confinement as well.²³

In Part II of this Article, we present the results of a study of the use of non-violent risk assessment in Virginia. We focus on Virginia, because, in the words of the Model Penal Code: “On risk assessment as a prison-diversion tool, Virginia has been the leading innovator among American states.”²⁴ In 2002, at request of the legislature, the Virginia Criminal Sentencing Commission adopted a risk-based instrument for releasing non-violent offenders as an alternative to prison.²⁵ We examine how judges have applied this instrument. It is a fairly brief worksheet typically filled out by a probation officer. It is incorporated by statute into the Virginia sentencing guidelines. We describe our findings: of the entire population of 8,443 offenders who qualify for the use of the non-violent risk assessment (NVRA), 3,396 or 40.2% scored in the category of low risk offenders, and were therefore eligible for an alternative sentence. Of those, 42.2% (1,433 people) did in fact receive an alternative sentence. We describe how most of those alternative sentences involved

²¹ See Public Safety Assessment: Risk Factors and Formula, at <http://www.arnoldfoundation.org/wp-content/uploads/PSA-Risk-Factors-and-Formula.pdf> (“The PSA was created using a database of over 1.5 million cases drawn from more than 300 U.S. jurisdictions. We analyzed the data to identify the factors that are the best predictors of whether a defendant will commit a new crime, commit a new violent crime, or fail to return to court.”).

²² IL Staff, *Supreme Court Issues Order on Pretrial Release*, Indiana Lawyer, Dec. 23, 2014, at <http://www.theindianalawyer.com/supreme-court-issues-order-on-pretrialrelease/PARAMS/article/35974>; Pretrial Release Outcomes Studied by Nevada Judiciary, October 2, 2015, at http://nvcourts.gov/Supreme/News/Pretrial_Release_Outcomes_Studied_by_Nevada_Judiciary/; for a discussion of Kentucky Supreme Court orders, see *infra* Part III.A.

²³ See generally, FT. Cullen, A.J. Myer, and E.J. Latessa, *Eight Lessons from Moneyball: The High Cost of Ignoring Evidence-Based Corrections*, 4 Victims and Offenders 97 (2009).

²⁴ Model Penal Code: Sentencing § 6B.09(3) (Am. Law Inst., Proposed Final Draft, May 24, 2017).

²⁵ Brian J. Ostrom et al., *Offender Risk Assessment in Virginia: A Three-Stage Evaluation* (2002); Virginia Criminal Sentencing Commission, *2010 Annual Report* 38-41 (2011).

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jail time and not release to the community. We observed extremely wide variation between both individual judges and entire judicial circuits in their use of the NVRA.

Second, we surveyed judges in Virginia and found highly divergent attitudes towards the NVRA. There has been very little information available about how judges view the increasing use of risk assessment in the U.S. We were able to obtain the participation of 52.8 percent of all 161 Circuit Judges in Virginia (85 judges). We found that a strong majority of judges endorse the principle that sentencing eligible offenders should include consideration of recidivism risk. However, a strong majority also reported that in their jurisdictions, they lack adequate alternatives to imprisonment. We found most judges opposed any policy requiring them to provide a written reason for declining to impose alternative interventions on low risk offenders. We then develop implications of these findings for improving the use of risk assessment in criminal cases.

In Part III, we turn to the experience with risk assessment in other states. In several jurisdictions, including the city of Chicago, and the state of Kentucky, there is evidence regarding how judges have used risk assessment pretrial. In other jurisdictions, such as Pennsylvania, there is evidence regarding use of risk assessment at parole. That evidence similarly suggests the challenge of integrating risk assessment into judicial and other official decisionmaking.

In Part IV, we develop a model for how to better regulate and integrate risk assessment into criminal justice decisionmaking. First, we draw from administrative procedures used in other fields, in which risk management is regulated, using accepted criteria, with a public approval process, validation, and ongoing review. Second, we draw from research on decisionmaking regarding risk and communication of risk. We suggest that risk assessment information should be better explained, so that the probabilities relied on are concrete and understandable in the practical context in which judges or other officials in the criminal justice system work. Second, we discuss solutions aimed at better structuring the manner in which risk information is incorporated into decisions. Third, we recommend the need for ongoing validation not just of risk assessment instruments, but of their use in practice by the relevant decisionmakers. Risk assessment has a behavioral component as administered. The problem of judicial use of risk assessment is part of a larger challenge: encouraging empirically sound official decisionmaking.

Getting criminal justice risk assessment right is crucial. To successfully reduce incarceration, these instruments need to be designed correctly, but they also need to be used correctly. Decisionmakers like judges have been accustomed to making decisions without the benefit of quantitative information. To change decisionmaking, we need to address both policy, the structure of decisionmaking, and training. Coherent regulation is needed, and not just the adoption of a risk assessment instrument. We hope that our recommendations will be considered as part of conversations on how to use risk assessment to improve outcomes at each stage of the criminal justice system.

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I. THE SECOND COMING OF RISK ASSESSMENT IN CRIMINAL JUSTICE

There has been a movement across many fields of regulation and business to use risk assessment and cost-benefit analysis tools to improve rules and outcomes.²⁶ Those methods can both involve efforts to measure the frequency and likelihood of adverse outcomes, but also their severity or cost.²⁷ Such methods are an everyday aspect of management, and they are integral to entire fields like insurance and finance. They have been widely incorporated into federal administrative policymaking—but they have had an uneven history in criminal justice.

Beginning in the early 20th Century, risk assessment tools were adopted in criminal justice in the United States. In the 1970s, those experiments with the use of quantitative tools to evaluate criminal cases were largely neglected, as criminal justice focused more on retributive approaches to punishment. The largely retributive approach has changed in the past decade and a half—policymakers turned back towards rehabilitation—and more quantitative research on recidivism began to inform policy.²⁸ We are in the midst of a risk assessment revolution in criminal justice. That said, in criminal justice, unlike in other fields, one typically does not have regulations concerning the use of risk assessment. Instead, the process has often been ad hoc and involves conveying risk information to judges and other decisionmakers, who retain their traditional discretion. In the sections that follow, we describe: (1) the traditional use of risk assessment in criminal justice; (2) the recent rise in the use of more empirically-informed risk assessment instruments in a variety of criminal justice settings; and (3) the criticism of the rising reliance on risk assessment in criminal justice.

A. The Traditional Use of Risk Assessment

The most widely used definition of risk assessment describes it as “the process of using risk factors to estimate the likelihood (i.e., probability) of an outcome occurring in a population.”²⁹ “Risk factors” are simply variables that (1) statistically correlate with recidivism, and (2) precede recidivism in time. In the case of pretrial decisionmaking, the relevant population consists in persons facing criminal charges. In the case of sentencing, the relevant population consists in convicted offenders.

In the area of policing, police officers have long made predictions regarding neighborhoods and individuals that may be more likely to engage in criminal activity, and agencies can deploy resources based on those assessments of risk. Increasingly,

²⁶ See, e.g. Carnegie Commission on Science, Technology, and Government, *Risk and the Environment: Improving Regulatory Decision Making* (1993).

²⁷ Fred Anderson et al, *Regulatory Improvement Legislation: Risk Assessment, Cost-Benefit Analysis, and Judicial Review*, 11 DUKE ENVTL. L. & POL’Y F. 89 (2000).

²⁸ See Simon, *supra* note 1.

²⁹ Helena Kraemer et al., *Coming to Terms with the Terms of Risk*, 54 ARCH. GEN. PSYCH. 340 (1997).

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police departments have used data analysis to inform this predictive decisionmaking, including based on quantitative instruments.³⁰

In the area of pretrial detention, traditionally the focus in the U.S. was to impose bail to prevent flight and ensure that the defendant was present in court. Beginning in the 1970s, the focus increased on preventing the commission of additional crimes.³¹ The 1984 Federal Bail Reform Act and state laws adopted in almost every state changed that to focus on the risk assessment of new crime, but they asked judges to predict new crime without the benefit of empirical evidence.³² The laws typically defined “dangerousness” extremely broadly, giving judges substantial discretion to consider defendants dangerous, or not defining danger at all.³³ Empirical work has examined variability between judges in making bail decisions and has found judges highly variable.³⁴

At sentencing, judicial discretion involving an assessment of the likelihood of recidivism was once a feature of indeterminate sentencing. Assessment of risk was shared; parole officials would later make an assessment whether a sentence should be reduced for an inmate, so that the judge’s assessment was not the final word. As indeterminate sentencing gave way to determinate sentencing and sentencing guidelines, the obligation fell increasingly (and largely solely) on the judge to fix sentences. At the same time, risk assessment began to disappear from the practice of sentencing, both because there was no longer the ability to conduct such assessments to grant parole, and because judges were tasked with assigning backward-looking retributive sentences and not forward-looking sentences based on risk of future crime.³⁵ In recent years this has changed, as the next section describes.

B. The Rise of Modern Risk Assessment

³⁰ See, e.g. Mara Hvistendahl, *Can ‘Predictive Policing’ Prevent Crime Before it Happens?*, Science, Sept. 28, 2016; David Robinson and Logan Koepke, *Stuck in a Pattern: Early Evidence on Predictive Policing and Civil Rights* (2016). For an overview of predictive policing methods and research, see Walter Perry et al, *Predictive Policing: The Role of Crime Forecasting in Law Enforcement Operations*, RAND (2013).

³¹ Samuel R. Wiseman, *Pretrial Detention and the Right to Be Monitored*, 123 YALE L.J. 1344, 1351 (2014) (“[h]istorically, the U.S. system of bail and associated pretrial detention was employed solely to prevent pretrial flight”).

³² Shima Baradaran & Frank L. McIntyre, *Predicting Violence*, 90 TEX. L. REV. 497, 506-7 (2012).

³³ Jeffrey Fagan & Martin Guggenheim, *Preventive Detention and the Judicial Prediction of Dangerousness for Juveniles: A Natural Experiment*, 86 J. CRIM. L. & CRIMINOLOGY 415, 422-24 (1996).

³⁴ Arpit Gupta et al., *The Heavy Costs of High Bail: Evidence from Judge Randomization*, 45 J. Legal Stud. 471, 477-48 (2016); Megan Stevenson, *Distortion of Justice: How the Inability to Pay Bail Affects Case Outcomes 3* (2017) (working paper), at https://papers.ssrn.com/sol3/Papers.cfm?abstract_id=2777615.

³⁵ John Monahan & Jennifer Skeem, *Risk Redux: The Resurgence of Risk Assessment in Criminal Sanctioning*, 26 Fed. Sent’g Rep. 158 (2014); Michael Tonry, *Legal and Ethical Issues in the Prediction of Recidivism*, 26 Fed. Sent’g Rep. 167 (2014); Kirk Heilbrun, Jaymes Fairfax-Columbo, Suraji Wagage, and Leah Brogan, *Risk Assessment for Future Offending: The Value and Limits of Expert Evidence at Sentencing*, 53 COURT REVIEW 116 (2017).

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Risk assessments are now commonplace at each stage of the criminal process, from police investigations, pre-trial settings, sentencing, corrections, and during parole, community supervision, as well as in specialized courts such as juvenile or mental health courts. Risk assessment involves, as noted, a process designed to predict outcomes. What outcome is being predicted may depend on the criminal setting in which it is being used, and the risk may be defined to include types of reoffending, or failure to appear, or substance abuse, or other outcomes. Risk assessment is distinct from risk management: trying to reduce risk through supervision or treatment interventions. Further, it matters not just how risk is defined, but for what time frame an outcome is to be predicted. In general risks increase as time frames increase.

Two types of errors may result, when predictions regarding future individual outcomes are based on aggregate information. The individual, despite the assessment that the person is “low” risk, may commit a crime (or fail to appear in court, or violate probation, etc.) which would constitute a “false negative” prediction. Alternatively, the individual may be assessed as “high” risk, but may not commit the relevant type of violation, which would constitute a “false positive” prediction. False negatives may be particularly salient when, despite a prediction to the contrary, an offender commits a serious crime. In contrast, false positives are hard to detect. If a person is erroneously given a lengthy sentence, they cannot easily show that they would not have re-offended had they released to the community.

The types of risk assessment tools vary, depending on their design and the use to which they are put. There are over 400 structured risk assessment instruments used around the world.³⁶ Many are largely interchangeable, however, and involve the same or similar risk factors.³⁷ The tools available include: Correctional Offender Management Profiling for Alternative Sanctions (COMPAS)³⁸; Correctional Assessment and Intervention System (CASD); HCR-20³⁹; Level of Service Inventory-Revised (LSI-R)⁴⁰; Level of Service/Case Management Inventory (LS/CMI); Minnesota Screening Tool Assessing Recidivism Risk 2.0 (MnSTARR 2.0); Modified Wisconsin Risk Assessment (WRN); the Ohio Risk Assessment System (ORAS); the federal Post Conviction Risk Assessment (PCRA)⁴¹; the federal Pre-

³⁶ Nicholas Scurich, *An Introduction to the Assessment of Violence Risk*, in Singh, Bjorkly & Fazel, *supra* note 2, at 10.

³⁷ *Id.*

³⁸ Northpointe, Practitioner's Guide to COMPAS 1 (2013), at http://www.northpointeinc.com/files/technical_documents/FieldGuide2_012813.pdf.

³⁹ Kevin S. Douglas et al., *HCR-20 Violence Risk Assessment Scheme: Overview and Annotated Bibliography* 6 (2014), at <http://kdouglas.files.wordpress.com/2014/01/hcr-20-annotated-bibliographyversion12-january-20142.pdf>.

⁴⁰ David J. Simourd & P. Bruce Malcolm, *Reliability and Validity of the Level of Service Inventory-Revised Among Federally Incarcerated Sex Offenders*, 13 *J. Interpersonal Violence* 261, 264 (1998).

⁴¹ Christopher T. Lowenkamp et al., *The Federal Post Conviction Risk Assessment (PCRA): A Construction and Validation Study*, 10 *PSYCHOL. SERVICES* 87, 88 (2013).

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Trial Risk Assessment tool (PTRA)⁴²; and the Static Risk and Offender Needs Guide-For Recidivism (STRONG-R). The developers of some of these tools claim not only to assess risk, but also to address the rehabilitative “needs” of a person.⁴³ Researchers describe how these instruments have evolved from first generation tools, consisting in clinical judgment and experience of a decisionmaker, to second-generation tools relying on static risk factors (such as criminal history, age, and gender), to third generation instruments both looking at risks and needs, and both static and dynamic risk factors such as educational status, employment; and fourth generation instruments, that provide individualized plans based on assessment of static and dynamic factors. A fifth generation of these tools may use machine learning techniques to predict recidivism in real-time and using far more complex analysis. This “generation” terminology should not necessarily be taken to mean that more recent and complex tools necessarily perform better, however.⁴⁴

Jurisdictions have widely experimented with using risk instruments pretrial, as an alternative (or a supplement) to reliance on cash bail. Jails have become increasingly overburdened in the United States, and they operate at an average of 90% capacity according to one study, with most serving pretrial detention, although only a small percent of those individuals are ultimately convicted.⁴⁵ In response, State Supreme Courts, such as the Indiana Supreme Court, the Kentucky Supreme Court, Maryland Supreme Court, Nebraska Judicial Council and the New Jersey Supreme Court have ordered studies and changes to pre-trial bail decisionmaking, sometimes accompanied by legislation, or changed exclusively through legislation.⁴⁶ The pace of change has been rapid. Every state has adopted new pretrial policies, with 500 enactments from 2012 to 2017, and at least 14 states adopting statistical risk assessment pre-trial since 2012.⁴⁷ The American Bar Association recommends

⁴² Timothy P. Cadigan et al., *The Re-validation of the Federal Pretrial Services Risk Assessment (PTRA)*, 76 FED. PROBATION 3, 6 (2012).

⁴³ For an overview of each of these types of risk assessment instruments, see Brian K. Lovins, Edward J. Latessa, Teresa May & Jennifer Lux, *Validating the Ohio Risk Assessment System Community Supervision Tool with a Diverse Sample from Texas*, CORRECTIONS 2-3 (2017). See also Don A. Andrews & James Bonta, *Risk-Need-Responsivity Model for Offender Assessment and Rehabilitation* i (2007) (calling such instruments “fourth generation” risk assessment).

⁴⁴ J. Stephen Wormith, *Automated Offender Risk Assessment: The Next Generation or a Black Hole?*, 16 AM. SOC. CRIMINOL. 281 (2017).

⁴⁵ Justice Policy Inst., *Bail Fail: Why the U.S. Should End the Practice of Using Money for Bail* 3 (2012).

⁴⁶ Ovetta Wiggins & Ann E. Marimow, *Maryland's Highest Court Overhauls the State's Cash-Based Bail System*, Wash. Post (Feb. 7, 2017); Lorelei Laird, *Court Systems Rethink the Use of Financial Bail, Which Some Say Penalizes the Poor*, A.B.A. J. (Apr. 1, 2016), http://www.abajournal.com/magazine/article/courts_are_rethinking_bail.

⁴⁷ National Conference of State Legislatures, Amber Widgery, *Trends in Pretrial Release: State Legislation* 1 (2015); National Conference of State Legislatures, *Trends in Pretrial Release: State legislation Update* (2017), http://www.ncsl.org/portals/1/html_largeReports/trends_pretrial_release17.htm.

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the use of pretrial risk assessment, as does the National Association of Counties, the Conference of State Court Administrators, and the Conference of Chief Justices.⁴⁸

Research has shown that quantitative assessments are more reliable in their predictions than those of individual decisionmakers.⁴⁹ One study found that 42% of people would be released pretrial if New York State used an algorithm to make decisions concerning pretrial release, rather than use of bail and judicial assessments.⁵⁰ Over two-dozen local jurisdictions and the entire state of New Jersey are now using the Public Safety Assessment tool funded by the Laura and John Arnold Foundation.⁵¹ The tool was based on analysis of 1,500,000 criminal cases in 300 American jurisdictions. It is freely available, and it was designed to remove factors associated with racial disparities in pretrial detention, such as arrest history, and instead relying on factors such as the history of missing court appearances.⁵² It relies on static factors, and not on information gleaned from interviews with a subject, including because it is designed to be used early on in the criminal process.

Other jurisdictions have instead—or in addition—relied on risk assessment to divert outright certain classes of offenders from criminal punishment. Virginia was an early adopter of that approach.⁵³ As efforts to reduce incarceration have become more prominent in the states, almost half of the states now use risk-based instruments at sentencing, at least in some types of cases.⁵⁴ State supreme courts have approved the use of risk assessment in sentencing.⁵⁵ Some states, such as Kentucky, Ohio, Oklahoma, Pennsylvania, and Washington, have required judges to consider risk assessment during sentencing.⁵⁶ A 2007 National Center for State

⁴⁸ American Bar Association, *ABA Standards for Criminal Justice: Pretrial Release*, Standard 10-1.10; National Association of Counties, Legislative Conference 2017, *Adopted Interim Policy Resolutions, Resolution on Improving Pretrial Justice Process*, February 27, 2017; Conference of State Court Administrators, 2012-2013 Policy Paper Evidence-Based Pretrial Release, Final Paper.

⁴⁹ Christopher Slobogin, *A Jurisprudence of Dangerousness*, 98 NW. U. L. REV. 1, 1–2, 141 (2003); William M. Grove, et al., *Clinical Versus Mechanical Prediction: A Meta-Analysis*, 12 PSYCH. ASSESS. 19 (2000).

⁵⁰ Jon Kleinberg et al., *Human Decisions and Machine Predictions*, NBER Working Paper Series (February 2017), at <https://www.cs.cornell.edu/home/kleinber/w23180.pdf> (“a policy simulation shows crime can be reduced by up to 24.8% with no change in jailing rates, or jail populations can be reduced by 42.0% with no increase in crime rates.”)

⁵¹ Public Safety Assessment: Risk Factors and Formula, <http://www.arnoldfoundation.org/wp-content/uploads/PSA-Risk-Factors-and-Formula.pdf>; see also Jon Shuppe, *Post Bail*, NBC News, Aug. 22, 2017.

⁵² *Id.*

⁵³ Brian J. Ostrom et al., *Offender Risk Assessment in Virginia: A Three-Stage Evaluation* (2002); Virginia Criminal Sentencing Commission, 2010 Annual Report (2011), at 38-41.

⁵⁴ J.C. Oleson, *Risk in Sentencing: Constitutionally Suspect Variables and Evidence-Based Sentencing*, 64 S.M.U. L. REV. 1329, 1399-402 (2011); Monahan & Skeem, *supra* note xxx, at 159-60. See Jennifer Elek, Roger Warren, and Pamela Casey, *Using Risk and Needs Assessment Information at Sentencing* (2015).

⁵⁵ *Malenchik v. State*, 928 N.E.2d 564, 571-73 (Ind. 2010); *State v. Gauthier*, 939 A.2d 77, 81, 85-86 (Me. 2007).

⁵⁶ Ky. Rev. Stat. Ann. § 532.007; Ohio Rev. Code Ann. § 5120.114; Okla. Stat. tit. 22, § 988.19; 42 Pa. Cons. Stat. § 2154.7; Wash. Rev. Code § 9.94A.500.

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Courts report encouraged this movement towards empirically-informed sentencing approaches.⁵⁷ As part of the adoption of realignment or Justice Reinvestment Initiative legislation, states have increased the use of alternatives to incarceration. In California, realignment legislation, requiring reduction of statewide prison populations to comply with prison-crowding related court rulings, that led to the use of county-specific plans to quite dramatically reduce imprisonment, including through the use of a range of different risk-assessment tools.⁵⁸

In the juvenile justice system, there has similarly been a shift towards the use of risk assessment instruments to identify high risk offenders for greater sanctions or for rehabilitation to prevent offending. While in 1990, only one-third of state juvenile justice systems used risk assessment, by 1990, 86% used risk assessments.⁵⁹ While more work has been done on validity of risk instruments used to predict violence and for adults, a recent systematic review of instruments used in the juvenile setting suggested predictive ability on average not different than in adult settings.⁶⁰

Still other jurisdictions focus on risk assessment at the probation stage or as a means to better utilize community corrections as an alternative to incarceration in prison. The National Institute of Corrections has described how its recommended evidence-informed approach uses risk assessments.⁶¹ The federal probation office and many state probation agencies use risk-based instruments to make probation decisions.⁶² Probation and reentry generally is an area where risk assessment similarly plays a far greater role than in the past.

C. Risk Assessment Debates

Risk assessment in criminal justice has never been more widespread, and never more debated among policymakers and scholars. The Model Penal Code, revised by the American Law Institute (ALI) in 2017, encourages the use of “actuarial instruments or processes to identify offenders who present an unusually low risk to

⁵⁷ Roger K. Warren, Nat'l Ctr. For State Courts, *Evidence-Based Practice to Reduce Recidivism: Implications For State Judiciaries* (2007), at <http://static.nicic.gov/Library/023358.pdf>; Pamela M. Casey et al., Nat'l Ctr. for State Courts, *Using Offender Risk and Needs Assessment Information at Sentencing* (2011).

⁵⁸ Susan Turner & Julie Gerlinger, *Risk Assessment and Realignment*, 53 SANTA CLARA L. REV. 1039, 1045 (2013).

⁵⁹ P. Griffin & M. Bozynski, *National Overviews: State Juvenile Justice Profiles* (2003) at <http://www.ncjj.org/stateprofiles/>. Another study found that most states used some type of structured decisionmaking, but only a minority used empirically-validated risk assessment. D.B. Towberman, *A National Survey of Juvenile Risk Assessment*, 43 JUVENILE & FAMILY CT. 61 (1992).

⁶⁰ Craig S. Schwalbe, *Risk Assessment for Juvenile Justice: A Meta-Analysis*, 31 LAW & HUM BEHAV. 449 (2007).

⁶¹ *Implementing Evidence-Based Policy and Practice in Community Corrections*, 2nd ed. (October 2009). U.S. Department of Justice, National Institute of Corrections. <http://nicic.gov/Downloads/PDF/Library/024107.pdf>.

⁶² NYC Probation, at <http://www.nyc.gov/html/prob/html/about/evidence.shtml> (“Evidence-based policies and practices (EBPP) use current research and the best available data to guide decisions and produce the outcomes that our stakeholders—probation clients, victims, and communities—expect.”).

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public safety.”⁶³ One reason for this endorsement is that “in virtually every decision-making situation for which the issue has been studied, it has been found that statistically developed predictive devices outperform human judgments... This is one of the best-established facts in the decision-making literature, and to find otherwise in criminal justice settings would be surprising (at best) and suspicious or very likely wrong (at worst).”⁶⁴ The Model Penal Code recommends sentencing commissions “develop actuarial instruments or processes, supported by current and ongoing research, that will estimate the relative risks that individual offenders pose to public safety” to be incorporated into sentencing guidelines.⁶⁵ The Code also calls for needs assessments to match offenders with rehabilitative interventions.⁶⁶

The ALI view of risk assessment in sentencing reflects a hybrid approach towards criminal punishment, incorporating retributive and utilitarian approaches. Broadly put, the retributive approach focuses backwards on an offender’s moral culpability for crime committed in the past, while the utilitarian approach focuses forwards on deterring future criminal acts by the offender or other would-be offenders (or by incapacitating the offender). Many scholars argue that any workable theory of criminal punishment should address *both* retributive *and* utilitarian concerns.⁶⁷ In an influential hybrid approach, Norval Morris developed a theory of “limiting retributivism” in which retributive principles may set an upper (and perhaps also a lower) limit on the severity of punishment, but within that range, utilitarian concerns can be taken into account.⁶⁸ The Model Penal Code approach reflects this hybrid view, in which risk assessment does not entirely define the sentence, but risk assessment can be used to identify low risk offenders eligible for reduced sentences.

Those who share a purely retributive approach towards criminal punishment would object to use of risk assessment (or any other utilitarian considerations) in criminal justice. Thus, some, such as Bernard Harcourt, have objected to the use of prediction generally on grounds that justice should be individualized and that risk assessment is not compatible with traditional theories of just punishment.⁶⁹ Our focus here is on critics of the move towards risk assessment who have raised a series of concerns that operate within the assumption that some hybrid of retributivism and utilitarianism are acceptable goals of criminal punishment.

One set of concerns has to do with the quality of the predictions that risk assessment instruments provide. For example, it is far more challenging to predict risk for relatively uncommon serious offenses than for relatively more numerous lower-risk offenses, for which there is far more data. The Model Penal Code endorses

⁶³ Model Penal Code: Sentencing § 6.06(5) (Final Draft 2017).

⁶⁴ Michael Gottfredson and Donald Gottfredson, *The Accuracy of Prediction*, in Alfred Blumstein ed., *Criminal Careers and Career Criminals* 247 (1986).

⁶⁵ Model Penal Code: Sentencing § 6B.09(1) (Final Draft 2017).

⁶⁶ *Id.* at § 6B.09(1).

⁶⁷ Kevin R. Reitz, *Sentencing*, at 472, in J. Wilson & J. Petersilia (Eds.), *Crime and Public Policy* (Oxford University Press, 2011).

⁶⁸ Norval Morris, *The Future of Imprisonment* (University of Chicago Press, 1974).

⁶⁹ Bernard E. Harcourt, *Against Prediction: Profiling, Policing, and Punishing in an Actuarial Age* (2007).

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the use of risk-assessment for lower-risk populations.⁷⁰ An additional concern is with the time period during which the data relied upon are collected. The Model Penal Code recommends that risk assessments tools be periodically reviewed for their reliability.⁷¹ Indeed, many risk assessment instruments used by parole boards, for example, have never been independently validated, have not been validated on in-state populations, are not regularly updated, and are sometimes altered to add additional factors not part of the original instrument.⁷²

Others find the use of general data to inform individual decisionmaking itself unfair. Expressing that view, then-Attorney General Eric Holder questioned the use of risk assessment in 2014, stating: “Using group data to make an individualized determination, I think, can result in fundamental unfairness.”⁷³ The concepts of fairness and accuracy used in the risk assessment context may themselves need to be clarified and can create difficult trade-offs.⁷⁴

A central fairness concern is that racial disparities or disparities based on other invidious criteria will result from the use of risk assessment.⁷⁵ For example, Pennsylvania considered a sentencing approach in which rural offenders were given fewer points in their risk scores than urban offenders, an approach that would have strongly correlated with race and that was rejected in 2017.⁷⁶ Gender is a factor explicitly taken into account by some risk assessment instruments. Sonja Starr has argued that doing so violates the Equal Protection Clause, since under intermediate scrutiny, such assessments use of a gender classification without a substantial state interest to justify doing so.⁷⁷ Others have responded that use of gender as a factor in discretionary risk-assessment does not constitute a classification, and does not raise constitutional concerns, because (1) gender is empirically a highly predictive risk

⁷⁰ *Id.* at Comment (“From an actuarial perspective, attempts to identify persons of low recidivism risk are more often successful than attempts to identify persons who are unusually dangerous.”) See Richard Berk and Justin Bleich, *Statistical Procedures for Forecasting Criminal Behavior: A Comparative Assessment*, 12 J. OF CRIMINOLOGY & PUB. POL’Y 515 (2013).

⁷¹ Model Penal Code: Sentencing § 6B.09(1).

⁷² See Sarah Desmarais, Kiersten Johnson, and Jay Singh, *Performance of Recidivism Risk Assessment Instruments in U.S. Correctional Settings*, 13 PSYCHOLOGICAL SERVICES 206 (2016) (“For most instruments, predictive validity had been evaluated in one or two studies that met our inclusion criteria. Those studies often were completed by the developers of the instrument under investigation. Perhaps one our most striking findings, only two of the 53 studies reported on the interrater reliability of the risk assessments.” *Id.* at 216). See also Jay P. Singh, Daryl G. Kroner, J. Stephen Wormith, Sarah L. Desmarais, and Zachary Hamilton (eds.), *Handbook of Recidivism Risk Assessment* (2018).

⁷³ *Holder: Big Data is Leading to ‘Fundamental Unfairness’ in Drug Sentencing*, PBS News Hour, July 31, 2014.

⁷⁴ See Richard Berk, Hoda Heidari, Shahin Jabbari, Michael Kearns, and Aaron Roth, *Fairness in Criminal Justice Risk Assessments: The State of the Art*, *Sociological Methods & Research* 1 (2018).

⁷⁵ For an discussion of the constitutional claims potentially raised in the area, see Aziz Z. Huq, *Racial Equity in Algorithmic Criminal Justice*, 68 DUKE L. J. (2019).

⁷⁶ Monahan and Skeem, *supra*.

⁷⁷ Starr, *supra*, at 824. See also J.C. Oleson, *Risk in Sentencing: Constitutionally Suspect Variables and Evidence-Based Sentencing*, 64 SMU L. REV. 1329, 1395-98 (2011).

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factor for many types of offenses, and (2) avoiding gender as a risk factor for recidivism strongly works to the disadvantage of female offenders.⁷⁸

A separate concern is with transparency of the risk assessment instruments used. Certain private companies have marketed software and they do not make public the factors relied upon in complex algorithms; one such algorithm, COMPAS, marketed by Northpointe, apparently relies on socio-economic and family factors,⁷⁹ and critics argue that although race is of course not a “static” factor in the algorithm, these “dynamic” factors likely correlate closely with race. A ProPublica report called the software “biased against blacks.”⁸⁰ In the widely discussed *Loomis* case in Wisconsin, the Wisconsin Supreme Court rejected an appeal by a person who objected at sentencing that he could not review the basis for the Northpointe software’s risk assessment, nor whether invidious factors or factors that have a disparate impact based on invidious criteria were relied upon.⁸¹ The U.S. Supreme Court ultimately denied certiorari in the case, but the case raised a serious due process concern that is likely to be litigated in future years.

Others fear that using risk assessment is too incremental an approach towards the problem of mass incarceration and that more forceful interventions are needed. Thus, Jessica M. Eaglin has argued that evidence-based approaches are not the right way to reduce mass incarceration, questioning use of risk assessment.⁸² To date, risk assessment has not been used to dramatically reduce incarceration.

How do judges use risk assessment? That is the question which has been least explored, in our view, in the critical literature. Critics have assumed that instruments, whether desirable or not, are uniformly applied by judges. The Model Penal Code has recommended advisory use of risk assessment. Where that is the case, the defendant can challenge the findings of an assessment “in open court,” and can “contest any adverse findings.”⁸³ However, research suggests that decisionmakers do not always accurately perceive risk and that whether risk estimates are actually used may depend on the manner and format with which risk information is communicated.⁸⁴ Whether judges appropriately follow the advisory or

⁷⁸ Jennifer Skeem, John Monahan & Christopher Lowenkamp, *Gender, Risk Assessment, and Sanctioning: The Cost of Treating Women Like Men*, 40 LAW & HUM. BEHAV. 580 (2016).

⁷⁹ See *Northpointe Software Suite*, at <http://www.northpointeinc.com/products/northpointe-software-suite>.

⁸⁰ Julia Angwin, et al., *Machine Bias*, ProPublica, May 23, 2016.

⁸¹ *State v. Loomis*, 881 N.W.2d 749 (Wis. 2016); *cert. denied* NO. 16-16387, 2017 WL 2722441 (June 26, 2017). See also Alyssa Carlson, *The Need for Transparency in the Age of Predictive Sentencing Algorithms*, 103 Iowa L. Rev. 303 (2017).

⁸² Jessica M. Eaglin, *Against Neorehabilitation*, 66 SMU L. Rev. 189 (2013). See also Katherine Beckett, *The Politics, Promise, and Peril of Criminal Justice Reform in the Context of Mass Incarceration*, 1 ANNUAL REV. CRIMINOLOGY 235 (2018); Jacob Kang-Brown, Oliver Hinds, Jasmine Heiss, and Olive Lu, *The New Dynamics of Mass Incarceration* (2018) at <https://www.vera.org/publications/the-new-dynamics-of-mass-incarceration>

⁸³ Model Penal Code: Sentencing Comment § 6B.09.

⁸⁴ J.G. Varela et. al, *Same Score, Different Message: Perceptions of Offender Risk Depend on Static-99R Risk Communication Format*, 38 LAW & HUM. BEHAV. 418-427 (2014).

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even presumptive recommendations concerning risk assessment has been little-studied in the literature. That is the problem we turn to in the next Part.

II. EMPIRICAL STUDIES OF RISK ASSESSMENT IN VIRGINIA

If the reason why risk assessment is desirable is that “in virtually every decision-making situation for which the issue has been studied, it has been found that statistically developed predictive devices outperform human judgment,” then the question remains how well human decisionmakers actually use their judgment to incorporate the information from risk assessment.⁸⁵ That question has not been carefully examined in the past. Now that risk assessments are so commonly used by legal decisionmakers, it is a question that can and should be examined. We examine that question by focusing first on the experience in Virginia with risk assessment in sentencing, based on several studies that we conducted, and then turning to evidence from other jurisdictions in which there is some evidence concerning judicial use of risk assessment instruments.

A. The Virginia “Non-Violent Risk Assessment” Instrument

The Virginia model for the use of risk assessment in sentencing is important to study because Virginia was the first state to make risk assessment a formal part of sentencing. As a result, the Virginia model has received a great deal of attention from policymakers, judges, and scholars. The revised Model Penal Code states: “On risk assessment as a prison-diversion tool, Virginia has been the leading innovator among American states.”⁸⁶ The use of risk assessment in Virginia has been hailed as a “valuable test” case and a model that should encourage other states to adopt such a “ratchet-down” approach to the use of risk assessment in sentencing to reduce prison populations by identifying low-risk individuals.⁸⁷ The Virginia risk instrument has been lauded based on its substance and the process used to develop it. The instrument is transparent, publicly available, and validated within the state and more recently re-validated.⁸⁸ Virginia’s instrument is simple and easy to understand. It involves “placing risk discretion in the courtroom.”⁸⁹ We sought to assess that discretion: how is this risk instrument used by judges in practice?

In 1994, the Virginia Legislature adopted so-called “truth-in-sentencing” legislation and abolished parole in the state. In order to avert a resulting fiscal “collapse”⁹⁰ of the state’s prison system, risk assessment was adopted at the same

⁸⁵ Gottfredson and Gottfredson, *supra* note xxx at 247. Criminal Careers and Career Criminals (1986).

⁸⁶ Model Penal Code: Sentencing (Am. Law Inst., Final Draft, approved May 24, 2017) at 375.

⁸⁷ Kevin R. Reitz, “Risk Discretion” at Sentencing, 30 FED. SENT’G. REP. 70 (2017).

⁸⁸ *Id.* at 71.

⁸⁹ *Id.*

⁹⁰ Richard Kern, *Overview of Virginia’s Truth-in-Sentencing System* 15, 20 at http://sfc.virginia.gov/pdf/committee_meeting_presentations/June%2019%20meeting/Virginia%20Felony%20Sentencing%20Guidelines.pdf.

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time “to reduce the use of incarceration for nonviolent criminals, in order to offset the increased prison stays for violent offenders that were built into the original Virginia guidelines.”⁹¹ The Legislature directed the newly-formed Virginia Criminal Sentencing Commission (VCSC) to develop an empirically-based risk-assessment instrument.⁹² The goal lawmakers set out for the VCSC was to divert 25% of the “lowest-risk, incarceration-bound, drug and property offenders” from prison to alternative sanctions such as jail, probation, community service, outpatient substance-abuse or mental health treatment, or electronic monitoring.⁹³ In the words of Richard Kern, the first Director of the VCSC, among the “main goals of the 1994 sentencing reforms” was to “expand alternative punishment/treatment options for some non-violent felons” by adopting statistical instruments “to divert low risk offenders” from prison.⁹⁴

The instrument was developed by 1996 and was implemented at pilot sites in 1997.⁹⁵ The instrument is administered only to offenders for whom the state’s sentencing guidelines recommend incarceration in prison or jail. In addition, offenders must meet certain eligibility criteria (e.g., a criminal history of only nonviolent offenses). If the offender’s total score on the instrument is below a given cut-off, he or she is recommended for an alternative, community-based sanction; if the offender’s score on the instrument is above that cut-off, the prison or jail term recommended by the sentencing guidelines remains in effect. The National Center for State Courts (NCSC) evaluated the use of the instrument at the pilot sites from 1998 to 2001.⁹⁶ The VCSC then conducted a validation study of the instrument to prepare it for state-wide use; the goal was to designate as lower-risk the group of

⁹¹ Kevin Reitz, “*Risk Discretion*” at *Sentencing*, 30 FED. SENT’G. REP. 68, 70 (2017). See also Richard Kern and Mark Bergstrom, *A View from the Field: Practitioners’ Response to Actuarial Sentencing: An “Unsettled” Proposition*, 25 Federal Sentencing Reporter 185, 188 (2013) (the adoption of risk assessment in Virginia was driven in large part by “budgetary concerns”); Richard Kern and Meredith Farrar-Owens, *Sentencing Guidelines with Integrated Offender Risk Assessment*, 16 FED. SENT’G. REP. 165, 169 (2004) (“The non-violent risk assessment tool adopted as part of the discretionary sentencing guidelines serves to safely divert a significant share of low risk felons away from expensive prison beds into less costly alternative punishment programs.”)

⁹² For a description of this process, see Virginia Criminal Sentencing Commission, *2005 Annual Report* 35 (2015), at <https://rga.lis.virginia.gov/Published/2005/RD42/PDF>.

⁹³ Kern & Farrar-Owens, *supra* note 91 at `65; Meredith Farrar-Owens, *The Evolution of Sentencing Guidelines in Virginia: An Example of the Importance of Standardized and Automated Felony Sentencing Data*, 25 FED. SENT’G. REP. 168, 170 (2013).

⁹⁴ Kern, *supra* note 90.

⁹⁵ *2005 Annual Report*, *supra* note 92, at 35. The risk factors included on the original assessment tool developed by the VCSC consisted of six types of variables: offense type, whether the offender is currently charged with an additional offense, “offender characteristics” (i.e., gender, age, employment, and marital status), whether the offender had been arrested or confined within the past 18 months, prior felony convictions, and prior adult incarcerations.

⁹⁶ National Center for State Courts, *Offender Risk Assessment in Virginia: A Three Stage Evaluation* (2002), at http://www.vcsc.virginia.gov/risk_off_rpt.pdf.

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individuals with an approximately 85% likelihood of not having a felony conviction within three years of release from confinement.⁹⁷

The instrument was adopted state-wide in 2002, for all felony larceny, fraud, and drug cases.⁹⁸ Thus, in 2002, the NVRA was included as one of the sentencing worksheets to be completed for all eligible offenders convicted of one of four drug and property crimes—Larceny, Fraud, Drug Schedule I/II (e.g. possession of cocaine), and Drug/Other (i.e., marijuana distribution). In 2012, the Commission re-validated its risk-assessment instruments on large samples of eligible drug and larceny/fraud offenders.⁹⁹ The instruments for each offense examine only the following static factors: (1) offender age at the time of the offense; (2) gender; (3) prior adult felony convictions; (4) prior adult incarcerations; (5) whether the person was legally restrained at the time of the offense¹⁰⁰; and for drug offenses, additionally (1) prior juvenile adjudication, and (2) prior arrest or confinement within past twelve months rather than legal restraint at the time of offense.¹⁰¹ If the offender’s total score on the instrument is below the cut-off, the offender is recommended for an alternative sanction. If the offender’s score on the instrument is above the cut-off, the prison or jail term recommended by the sentencing guidelines remains in effect.

Since the NVRA instrument was adopted as part of the sentencing guidelines that were adjusted in 1994, use of the NVRA is not considered a “departure” from the sentencing guidelines. Rather, an alternative sentence, when provided after using the NVRA, is considered in compliance with the guidelines. After the NVRA is completed, judges have complete discretion whether or not to follow the recommendation for an alternative sentence. Judges also have discretion regarding which alternative sentence, if any, to impose.

⁹⁷ *2005 Annual Report, supra* note xxx, at 35, 78, 84 (“According to the Commission’s data, less than 17% of the offenders recommended for an alternative sanction by the risk instrument were identified as recidivists.”).

⁹⁸ Re-validation of the Nonviolent Offender Risk Assessment Instrument: Study Update, at <http://www.vcsc.virginia.gov/Nonviolent%20Offender%20Risk%20Assessment%20Update%202011-14-11%20HANDOUT.pdf>.

⁹⁹ In these samples, 63% of drug offenders scored in the low-risk group and 37% scored in a higher-risk group, while 43% of the larceny/fraud offenders scored in the low-risk group and 57% scored in a higher-risk group. Recidivism in this research was defined as reconviction for a felony offense within three years of release from incarceration. Of drug offenders designated as low risk, 12% recidivated; by comparison, 44% of higher-risk drug offenders recidivated. Of larceny/fraud offenders designated as low risk, 19% recidivated; by comparison, 38% of higher-risk larceny/fraud offenders recidivated. Virginia Criminal Sentencing Commission, 2012 Annual Report (2012), <http://www.vcsc.virginia.gov/2012VCSCAnnualReport.pdf>.

¹⁰⁰ Virginia Sentencing Guidelines, Larceny, Section D, at http://www.vcsc.virginia.gov/worksheets_2012/Larceny.pdf.

¹⁰¹ Virginia Sentencing Guidelines, Drug/Schedule I/II Section D, at http://www.vcsc.virginia.gov/worksheets_2016/Drug-I_II2.pdf.

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We aimed to study whether the non-violent risk assessment instrument is being used divert from prison, 25% of the “lowest-risk, incarceration-bound, drug and property offenders,” and if so, what types of alternative sentences they receive.¹⁰²

B. Judicial Reliance on The Non-Violent Risk Assessment Instrument

We reviewed 2016 sentencing data shared with us by the VCSC concerning the use of the NVRA instrument.¹⁰³ The use of this instrument is important in a large number of cases; over 8,000 people were convicted of eligible offenses in Virginia in fiscal 2016. In that year, there were a total of 23,713 sentencing guidelines worksheets received by the Commission.¹⁰⁴ Thus, one quarter of felony convicts were convicted of crimes that were eligible for the use of the NVRA. Of those, 6,787 people were eligible offenders for whom a risk assessment form was received. Over a thousand additional offenders were eligible offenders for whom a risk assessment form was not filled out or shared by the judge with the VCSC. The Table below displays our analysis of the receipt of alternative sentences under the NVRA in fiscal 2016.

Table 1: NVRA Eligible Offenders Who Received an Alternative Sanction

Alt. Sanction	NVRA Recommendation			Total
	Higher Risk	Low Risk	Missing	
Imposed	941 23.4%	1,433 42.2%	408 39.7%	2,782
Not Imposed	3,079 76.6%	1,963 57.8%	619 60.3%	5,661
Total	4,020 47.6%	3,396 40.2%	1,027 12.2%	8,443

Of the entire population of 8,443 offenders eligible for risk assessment under the NVRA, 3,396 or 40.2% scored in the category of least violent offenders, and were

¹⁰² See Virginia Criminal Sentencing Commission, Re-validation of the Nonviolent Offender Risk Assessment Instrument: Study Update 4 (2011), at <http://www.vcsc.virginia.gov/Nonviolent%20Offender%20Risk%20Assessment%20Update%202011-14-11%20HANDOUT.pdf> (summarizing data from 2002 to 2010, and showing beginning in 2005, a consistent group of about 50% were eligible as low-risk offenders, for alternative sentences).

¹⁰³ These data were presented to the Virginia Criminal Sentencing Commission at its April 9, 2018 meeting. The materials presented, including PowerPoint, are available on the VCSC website: <http://www.vcsc.virginia.gov/meetings.html>.

¹⁰⁴ Id. at 14.

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therefore eligible for an alternative sentence. Of those, only 42.2% (1,433 people) did in fact receive such an alternative sentence. Of violent offenders, 23.4% (941 people) received alternative sentences.

Of the group of offenders for whom NVRA information was missing, 39.7% (408 people) received alternative sentences. For that group, the NVRA information was not included in the sentencing record; it is not known whether that information was considered or not. The cases in which the NVRA was missing are systematically different than those in which the NVRA was filled out in the following main ways: the sentencing information was far more likely to be prepared by a commonwealth attorney (83% vs. 53%); the cases were far more likely to include a written plea agreement (62% vs. 39%) and/or a guilty plea (94% vs. 87%). It is possible that commonwealth’s attorneys and defense attorneys sometimes considered the NVRA when negotiating plea bargains, even if it was not filled out.

Second, we examined what types of alternative sentences were offered under the NVRA. Those alternatives range from jail-time to release for time served or under supervised probation, and they also include rehabilitative options such as drug treatment. Table 2, below, displays for all eligible offenders who received an alternative sentence in FY 2016, which type of alternative sentences were imposed. Since cases may, and often do, involve more than one type of alternative sanction, the totals add up to more than 100% of cases.

Table 2: Types of Alternative Sanctions Imposed in NVRA Cases

Sanction	Cases (N)	Cases (%)
Supervised Probation	1,238	86.39
Diverted from Prison to Jail	680	47.45
Restitution	496	34.61
Unsupervised Probation	314	21.91
Substance Abuse Treatment	284	19.82
Fines	178	12.42
Time Served	159	11.10
Diversion Center	105	7.33
Detention Center	69	4.82
Comprehensive Community Corrections	61	4.26
First Offender	59	4.12
Electronic Monitoring	40	2.79
Day Reporting	40	2.79
Litter Control	35	2.44
Intensive Supervision	20	1.40
Drug Court	15	1.05
Work Release	3	0.21
Youth Offender	1	0.07

Sample: Individuals who were recommended for, and received, alt. sanction(s)

Total Observations: 1,433.

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The most common alternative sanction offered was supervised probation, with almost half of those receiving alternative sentences receiving jail-time. Jail, as opposed to prison, while they both involve incarceration, may be a somewhat more lenient option in that it may be easier for relatives to maintain visits.

The variation between judicial districts and judges was also striking. There are 120 Circuit Courts in Virginia, organized into 31 Circuits. The Circuits varied widely in the ratios of those diverted, in the ratios of missing NVRAs, and in provision of alternative sentences to persons who score low versus high risk under the NVRA. The 31 Circuits had a mean alternative sentencing rate of 33%, with a minimum of 19% diverted and a maximum of 54% diverted. Low risk alternative sentencing rates varied by Circuit from 22% to 67%. Higher risk alternative sentencing rates varied by Circuit from 11% to 51%. The variation among individual Circuit Court judges was as follows: judges had a mean alternative sentencing rate of 32%, with a minimum of 11% diverted and a maximum of 65% diverted. Low risk alternative sentencing rates varied among individual judges from 7% to 85%. Higher risk alternative sentencing rates varied among individual judges from 0% to 60%.

If the NVRA was intended to provide more uniformity among courts and judges, that goal does not yet appear to have been achieved. That said, we express no view on the optimal level of consistency among courts and judges. Different courts or different judges may have different offender populations or resources available to them. The judicial survey, which we describe next, addresses some of those questions.

C. Judicial Survey Findings

In addition to analyzing sentencing data concerning low-risk offenders in Virginia, we aimed to study *why* judges differ so widely in their use of risk assessment information. There have been very few efforts to survey judges to assess their attitudes regarding their use of risk assessment in the United States.

We located one such survey: a recent white paper by Steven Chanenson and Jordan Hyatt. That paper asks whether judges use risk assessment well and notes how little data we have on that question. They conducted a survey of judicial attitudes, surveying 137 judges in 37 states, including both state and county-level judges.¹⁰⁵ Acknowledging that it was a “non-representative and small sample,” the authors noted that the effort at least provided some suggestive data on the question. They found that many judges were familiar with risk assessment but believed that “their judgment was more accurate than actuarial at-sentencing assessments.”¹⁰⁶ Judges were more favorable towards the use of risk assessment to release low-risk individuals than to imprison high-risk offenders, and the vast majority supported the

¹⁰⁵ Steven L. Chanenson and Jordan M. Hyatt, *The Use of Risk Assessment at Sentencing: Implications for Research and Policy* (2016), at https://digitalcommons.law.villanova.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&https_redir=1&article=1201&context=wps.

¹⁰⁶ *Id.* at 10.

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use of risk assessment in sentencing in some manner.¹⁰⁷ We also located a survey of judges and probation officers concerning juvenile justice in four states; it found that half frequently override recommendations from both needs and risk assessments (the distinction between the two is discussed more in Part IV). Their overrides were particularly high regarding community and residential placements for which there was limited availability.¹⁰⁸ The authors of the study concluded that lack of training, inadequate resources, and inappropriate instruments hampered the use of risk assessment.¹⁰⁹

Judges in many states, including Virginia, are the primary “consumers” of risk assessment at sentencing, yet their views on risk assessment are not typically solicited. In Virginia, since the NVRA instrument was adopted statewide in 2002, we expected that judges would be familiar with the instrument and able to comment on how they use it. We sent judges a brief survey asking them to answer several questions concerning the use of the risk assessment.¹¹⁰ The survey was anonymous. We also included postcards that judges could separately mail if they agreed to be interviewed further concerning their views on the use of the NVRA, with results to be similarly described with anonymity for participating judges. We conducted the survey between November 2017 and January 2018, sending the survey by mail to all 161 Circuit Court judges in Virginia. In Virginia, each city and county has a Circuit Court, which handles all criminal felony cases. There are 31 Circuits and 161 Circuit Court judges. Virginia is one of two states in which judges are selected by legislative election, based on a majority vote of the Virginia House of Delegates and Senate. Circuit Court judges serve for terms of eight years.

We received responses from 85 judges (a response rate of 52.8 percent). To our knowledge, this is the highest response rate reported to a statewide judicial survey. (We note that surveys of federal judges conducted by the U.S. Sentencing Commission have reported similarly high response rates.)¹¹¹ We found, in summary,¹¹² that:

¹⁰⁷ Id. at 10.

¹⁰⁸ Jeffrey Shook and Rosemary C. Sarri, *Structured Decisionmaking in Juvenile Justice: Judges’ and Probation Officers’ Perceptions and Use*, 29 CHILDREN AND YOUTH SERVICES REV. 1335 (2007).

¹⁰⁹ Id. at 1335.

¹¹⁰ We are grateful to the Chief Justice Donald Lemons of the Virginia Supreme Court, who provided a cover letter encouraging Virginia judges to participate in the survey. These data were presented to the Virginia Criminal Sentencing Commission at its April 9, 2018 meeting. The materials, including PowerPoint, are available on the Commission’s website: <http://www.vcsc.virginia.gov/meetings.html>. Statistical analyses of survey data can be found in John Monahan, Anne L. Metz, & Brandon L. Garrett, *Judicial Appraisals of Risk Assessment in Sentencing*, Behavioral Sciences and the Law (in press).

¹¹¹ U.S. Sentencing Commission, *Results of 2014 Survey of United States District Judges* (2015), at http://www.ussc.gov/sites/default/files/pdf/research-andpublications/research-projects-and-surveys/surveys/20150225_Judges_Survey.pdf.

¹¹² The survey first asked Virginia judges whether sentencing of drug and property offenders should be based only on the seriousness of the crime, or also on the risk that the offender will commit another crime in the future. Second, the survey asked how familiar judges were with the use of the NVRA for sentencing drug and property offenders in Virginia. Third, the survey asked how often the judge considers the results of the NVRA before sentencing a drug or property offender. Fourth, the survey

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Eight-out-of-ten judges believe that sentencing drug and property offenders should be based not only on the seriousness of the crime committed and the offender's blameworthiness, but also on the risk the offender will commit another crime in the future. In addition, eight-out-of-ten judges state that they are either "familiar" or "very familiar" with the use of NVRA instrument in sentencing drug and property offenders. However, somewhat fewer, or approximately half of all judges state that they "always" or "almost always" consider the results of the NVRA instrument in sentencing drug and property offenders, and approximately one-third state that they "usually" do so. Indeed, approximately half of all judges state that they rely equally on the NVRA instrument and on their judicial experience in sentencing a drug or property offender, and approximately one-third state that they rely primarily on their judicial experience.

In explaining how they exercise discretion, we found that seven-out-of-ten judges rate availability of alternative interventions—such as outpatient drug or mental health programs—within their jurisdiction as "less than adequate," and five percent rate such alternatives as "virtually non-existent." In addition, three-quarters of the judges responded affirmatively when asked whether an increase in availability of alternative interventions for drug and property offenders would change their sentencing practices.

We also asked about whether adopting a policy requiring judges to provide a written reason for declining to impose an alternative intervention on an offender who scores as "low risk" would increase the likelihood of judges imposing such alternative interventions. Six-in-ten judges believe that such a policy would increase the use of alternatives, and four-in-ten believe that it would not do so. However, when asked if they favored or opposed the adoption of the policy described in the previous question, one-third of the judges responded that they favored adopting such a policy, and two-thirds responded that they opposed it.

After completing the survey, judges also had the opportunity to provide additional written comments. Judges were candid in their views of risk assessment. Some were quite opposed to the use of risk assessment generally. Others described the need for more treatment resources in their districts.

Our survey yielded three primary conclusions. First, a strong majority of Virginia judges endorsed the principle that sentencing eligible offenders should include a consideration of the risk the persons will commit new crimes. The judges are familiar with the use of the NVRA in sentencing, and usually or always consider the results of the NVRA in relevant cases. Judges reported that the NVRA: "Constitutes a useful tool within the general sentencing scheme." Another judge said

asked whether judges rely on their judicial experience or on the NVRA to determine the risk that an offender will commit another time. Fifth, the survey asked how judges would rate the current availability of alternative sanctions, such as outpatient drug or mental health programs. Sixth, the survey asked whether availability of more alternative sanctions would change sentencing practices. Finally, the survey asked whether it would affect the use of alternative sanctions if the NVRA was presumptive, and were judges were required to provide a reason in writing for declining to impose an alternative sanction. We also asked judges whether they would favor the adoption of such a procedure.

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that: “I support the use of these risk assessments under current usage—specifically the risk assessment is used to reduce and not increase incarceration recommendations.” A more skeptical judge said that “[i]t should be clarified to judges and litigants alike that Evidence Based Practices like the Nonviolent Risk Assessment are but another tool that aids but does not supplant judicial judgment.”

In contrast, a significant minority exclude considerations of risk when sentencing eligible drug and property offenders and are largely unfamiliar with the NVRA. For example, one judge said:

“Frankly, I pay very little attention to the [NVRA] worksheets. Attorneys argue about them, but I really just look at the Guidelines. I also don’t go to psychics.”

Second, a strong majority of judges find the availability of alternative interventions for eligible drug and property offenders in their communities to be inadequate at best. Those judges stated that they believe that an increase in the availability of alternative interventions would change their sentencing practices. As one judge put it: “The assessment is useful. The problem is the lack of useful alternatives. In several counties in my Circuit, there are no inpatient treatment options.” Another judge said, “We need more alternative options—lack sufficient treatment programs and follow-up. Unfortunately, that costs money which communities are reluctant to provide.” Or another judge said, “bona fide alternative programs must first exist.” One judge said, offering still more detailed concerns:

There is presently no valid alternative in our area. Referral to local mental health takes 13 weeks for the initial interview. Who knows how long to start treatment... We need a statute which requires that all areas of the state have equal access to drug treatment.

Third, a majority of judges believe adopting a policy requiring a written reason for declining to impose an alternative intervention on eligible offenders who score as “low risk” would increase the likelihood such sentences would be imposed. Currently, Virginia judges are asked to provide reasons when departing from sentencing guidelines, but the use or non-use of the NVRA is not considered a sentencing departure. Requiring judges to express reasons might affect their behavior. However, a majority of judges oppose the adoption of such a policy. Virginia judges responded, for example:

Having to write out reasons for Guidelines departure is already an added time and effort burden on the sentencing process. To add another requirement to explain the sentencing decision would simply complicate and drag out the sentencing even more.

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Another judge added, “At some point someone must realize that adding more paperwork. . . takes time and when court staffing remains the same, this takes time away from hearing cases, deciding cases, reading, signing orders, etc.” Another judge, similarly noted the time it would take to provide reasons for not following NVRA recommendations: “Requiring judges to take 3-10 minutes per such sentencing to explain will be an unnecessary drag on our criminal dockets.”

In conclusion, we found that most judges are familiar with and embrace risk assessment as a major consideration in sentencing property and drug offenders, but find that community alternatives to imprisonment in their jurisdictions are often scarce. Further, most judges oppose the adoption of a policy requiring them to write out reasons for declining to impose alternative interventions on low risk offenders. Judicial education in structured risk assessment,¹¹³ increased resources for community programs addressing criminogenic needs, and the adoption of automated web-based information systems may make help realize the promise of risk assessment as a means of reducing mass incarceration.

III. EMPIRICAL EVIDENCE FROM OTHER JURISDICTIONS

As risk assessment has been increasingly used in criminal justice settings, more data has emerged regarding how judges and other decisionmakers use such assessments in practice. The evidence is not encouraging but it is highly informative. Consistent with research on structured decisionmaking generally, the evidence suggests that decisionmakers do not take account of quantitative information when they do not value it or it is not incorporated into the structure of their work. Where decisionmakers appreciate the value of quantitative evidence, it informs their goals, and it is well incorporated into their work, they can make better use of the information. Below we discuss evidence from risk assessment in pretrial decisionmaking in Kentucky, which Megan Stevenson has studied, and evidence from risk assessment in probation in Pennsylvania, which Richard Berk and others have studied.

A. Pretrial Risk Assessment in Kentucky

Kentucky is one of a growing group of states that now requires risk assessment in pretrial decisionmaking.¹¹⁴ Kentucky is only one of a handful of states to eliminate

¹¹³ We asked the Virginia Criminal Sentencing Commission to share the training that judges receive on the use of the NVRA. That training consisted of two PowerPoint slides that are a part of a twenty-six slide pre-bench training that newly appointed judges receive. That training briefly explains what the NVRA is, that alternative sanctions are possible for eligible offenders, and notes that “compliance with the risk assessment recommendation is discretionary.” In addition, failure to follow sentencing guidelines is not reviewable on appeal in Virginia. No further judicial training is provided on the NVRA at present.

¹¹⁴ John Clark, Pretrial Justice Inst., *The Fundamentals of Pretrial Risk Assessment: Achieving Inter-Rater Reliability 10* (2014) (listing states that use pre-trial risk assessment, at that time, as: Colorado, Delaware, Hawaii, Kentucky, New Jersey, and West Virginia); Shaila Dewan, *Judges Replacing*

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commercial bail, which it did in 1976 legislation.¹¹⁵ In 2011, lawmakers enacted a Public Safety and Offender Accountability Act, which required use of “evidence-based practices to reduce the likelihood of future criminal behavior,” including the use of risk assessment to make decisions regarding pre-trial release.¹¹⁶ The pre-existing state criminal procedure statute had required that a judge release a defendant on personal recognizance or an unsecured bail bond, unless the judge decided “in the exercise of discretion” that such release will not “reasonably assure” the appearance of the defendant in court; such discretion shall rely with “due consideration” to recommendations of the pre-trial services agency.¹¹⁷

Implementing this legislation, in 2013, the Kentucky Supreme Court issued an order requiring all judges to expedite release of pre-trial offenders who score a low to moderate risk using the Public Safety Assessment (PSA) risk assessment developed by the Laura and John Arnold Foundation.¹¹⁸ If judges chose to impose cash bail, they have to provide written reasons for doing so. However, many judges did not follow the recommendations of the instrument.¹¹⁹ Some judges simply write “flight risk” or “danger” as their reason for not using the PSA.¹²⁰ One prosecutor even created bumper stickers objecting to risk assessment, stating: “Catch and release is for fish not felons.”¹²¹ In 2017, the Kentucky Supreme Court issued a new rule making the program “uniform” for judges, expanding the applicability of risk assessment to new classes of defendants, and asking pretrial services to provide bi-annual reports to the Chief Justice to monitor the judicial use of the risk assessment.¹²²

In a forthcoming paper, “Assessing Risk Assessment in Action,” Megan Stevenson has analyzed data from Kentucky from 2009 to 2016 (pre-dating the most recent 2017 Kentucky Supreme Court rule).¹²³ Analyzing over 1.5 million criminal cases resulting from an arrest for a new criminal offense, Stevenson found that the adoption of pretrial risk assessment had a sharp effect in 2011 upon release rates,

Conjecture with Formula for Bail, NY Times (June 26, 2015), <http://www.nytimes.com/2015/06/27/us/turning-the-granting-of-bail-into-a-science.html> (describing use of pre-trial risk assessment in 21 states).

¹¹⁵ Ky. Rev. Stat. Ann. § 431.510 (1).

¹¹⁶ Ky. Rev. Stat. Ann. § 431.066; *see also* John D. Minton, Jr., Laurie Dudgeon & Connie Payne, *Report on Impact of House Bill 463: Outcomes, Challenges, and Recommendations* 4 (2012); Ky. Rev. Stat. Ann. § 196.288 (measurement and documentation of cost savings resulting from reduced incarceration).

¹¹⁷ KY. R. CRIM. P. 4.10.

¹¹⁸ Laura and John Arnold Foundation, *Results from the First Six Months of the Public Safety Assessment – Court in Kentucky* (July 2014), at <http://www.arnoldfoundation.org/wp-content/uploads/2014/02/PSA-Court-Kentucky-6-Month-Report.pdf>.

¹¹⁹ Robert Veldman, *Pretrial Detention in Kentucky: An Analysis of the Impact of House Bill 463 During the First Two Years of its Implementation*, 102 KENTUCKY L. J. 777, 778 (2013).

¹²⁰ Alysia Santo, *Kentucky’s Protracted Struggle to Get Rid of Bail*, Nov. 12, 2015, Marshall Project, at <https://www.themarshallproject.org/2015/11/12/kentucky-s-protracted-struggle-to-get-rid-of-bail>.

¹²¹ *Id.*

¹²² Supreme Court of Kentucky, Amended Order, In Re: Authorization for the Non-Financial Uniform Schedule of Bail Administrative Release Program, 2016-10, at https://courts.ky.gov/courts/supreme/Rules_Procedures/201610.pdf.

¹²³ Stevenson, *supra* note xxx.

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but that effect immediately began to fall.¹²⁴ When the Kentucky Supreme Court adopted the PSA in 2013, the same effect was observed, with an initial increase in release rates, followed by a decline in release rates.¹²⁵ Over time, Stevenson describes, judges reverted to their prior habits in bail-setting pretrial; the increase in release rates was “shortlived,” and by 2015, release rates were lower than they had been prior to the 2011 legislation.¹²⁶ Stevenson found no meaningful change in the pre-trial arrest rate during this time period, and an increase in pre-trial failure to appear.¹²⁷ Stevenson also found very different responses based on type of jurisdiction, with urban regions far more likely to experience a decline in their pre-trial release rates.¹²⁸ Stevenson notes that in part due to this variation between urban and rural jurisdictions, and with disproportionately white rural jurisdictions relying on the risk assessment instrument to release pre-trial more often, there was no detectable impact of the adoption of risk assessment on racial disparities in pre-trial release in Kentucky.¹²⁹

Stevenson’s results are consistent with the frustration the Kentucky Supreme Court has itself expressed in adopting new measures to try to corral judges into implementing risk assessment pretrial. James Doyle has written that this experience suggests that “covert work rules, workarounds, and informal drift will always develop, no matter what the formal requirements imposed from above try to require.”¹³⁰ What Stevenson documents, is that not only may judges return to prior practices, but even increased use of risk assessment may be uneven and may not improve outcomes in the intended manner. Time will tell whether the Kentucky court rule adopted in 2017 is any more successful than prior interventions. As we describe in the next Part, a different approach towards educating judges and restructuring their decisionmaking may be needed.

B. Additional Risk Assessment Jurisdictions

Despite the use of risk assessment instruments at almost all phases of the criminal justice process across a large number of state and local jurisdictions, we typically do not know how jurisdictions are actually using risk assessment instruments in practice.¹³¹ Thus, in Arizona, a risk instrument has been encouraged state-wide, but not required and not incorporated into guidelines. Steven Chanenson and Jordan Hyatt report anecdotal evidence that lawyers in Arizona sometimes use

¹²⁴ Id. at 36.

¹²⁵ Id. at 36-39.

¹²⁶ Id. at 40.

¹²⁷ Id. at 42-43.

¹²⁸ Id. at 47.

¹²⁹ Id. at 47.

¹³⁰ James M. Doyle, *Fewer Prisoners, Less Crime? The Elusive Promise of Algorithms*, The Crime Report, Nov. 14, 2017.

¹³¹ For a recent study of pretrial risk assessment in 30 jurisdictions, see Matthew DeMichele et al *What do Criminal Justice Professionals Think About Risk Assessment at Pretrial?* (2018), at www.arnoldfoundation.org/wp-content/uploads/4-Criminal-Justice-Professionals.pdf

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that information in plea negotiations and that judges sometimes consider the risk assessment, but the impact of it is unclear.¹³² There is no systematic evidence documenting those results. To provide another example, in Utah, judges are provided as part of pre-sentencing reports, evidence from a risk assessment instrument, but there has been no evaluation of the use of that instrument or study of its use by researchers. The 2015 Justice Reinvestment Initiative legislation emphasized that judges should use risk assessment, but we do not know if they in fact are doing so or if so how they are doing so.¹³³

In 2016, journalists reported the results of a review of over 1,500 cases in Chicago in which judges 85% of the time made bail decisions contrary to a new risk instrument to be used to help determine pre-trial decisions.¹³⁴ The review found that the amount and conditions of bail varied widely by judge. The Illinois Supreme Court Justice raised the concern that these judges are not just unwilling to use risk assessment but “they are not being sufficiently trained and supervised and are not being held accountable by the system.”¹³⁵ Attitudes towards types of crimes may also explain the judicial resistance to the risk assessment. The review noted that bail was most commonly required for gun possession charges, with bail set for 98% of suspects, while the risk assessment called for it in only about 5% of such cases.¹³⁶

In Maryland, in response to concerns about the constitutionality of the use of bail, the Court of Appeals adopted rules intended to end the use of cash bail; in response, according to a study, detention rates have apparently increased, as judges have issued “no bond” detention orders rather than use cash bail.¹³⁷ The University of Baltimore Pre-Trial Justice Clinic analyzed data from Prince George’s County, and found that while cash bail declined 11 percent, detention without bond rose almost 15 percent.¹³⁸ Professor Colin Starger commented that: “In a time where judges are politically accountable, there’s a fear you’re going to release someone who will go on to commit a crime so there’s a lot of public pressure to detain people.”¹³⁹

A study by Richard Berk examined the use of risk assessment by the Pennsylvania Board of Probation and Parole, which commissioned a machine-learning study to develop prediction instruments. The information generated by the instrument was provided to the Board members as they made decisions, beginning in 2013. The risk information, if used, could have reduced recidivism substantially; 58% of those released on parole reoffended within two years, while the risk instrument predicted that if those recommended had been released, the recidivism rate would

¹³² Chanenson and Hyatt, *supra*, at 7.

¹³³ *Id.* at 11.

¹³⁴ Main, *infra* note 16 (describing Chicago data concerning non-use of pre-trial risk assessment by judges).

¹³⁵ *Id.*

¹³⁶ *Id.*

¹³⁷ Lynh Bui, *Reforms intended to end excessive cash bail in Md. are keeping more in jail longer, report says*, Washington Post, July 2, 2018.

¹³⁸ *Id.*

¹³⁹ *Id.*

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have been 27%.¹⁴⁰ The study concluded that when they began to use the instrument, there was “little change after the forecasts became available in the proportions of inmates released for different levels of forecasted risk and the reliabilities attached.”¹⁴¹ The Board largely followed their same practices. Perhaps this was because of inertia; these forecasts were advisory, after all, and: “All members of the Board were experienced and highly credentialed. There was no reason to expect that old ways that had served them well would be rapidly altered.”¹⁴² A second study by Berk examined risk assessment in corrections, and found that using a risk assessment instrument better predicted inmate violence than traditional classifications used by prison administrators.¹⁴³ A final study by Jill Viglione, Daniell S. Rudes, and Faye S. Taxman examining the use of risk and needs assessment in two adult probation districts in a state found that the tool was overwhelmingly administered, but “rarely” linked the resulting scores to their management or supervision decisions.¹⁴⁴

C. Non-Risk Assessment Jurisdictions

We can also learn from jurisdictions that do not use risk assessment. One case in point is North Carolina. In North Carolina, risk assessment is not used, except in a few pilot jurisdictions, concerning bail and pre-trial decisionmaking.¹⁴⁵ However, the statute does not preclude a judge’s consideration on pre-trial risk; in an open-ended way it provides for a right to have a judge set conditions for release.¹⁴⁶ Inconsistent with that preference, the statute then conveys the notion that pre-trial risk should be assessed by focusing on what the criminal charges are, and the way to address the risk posed by those charges is to impose money bail. Thus, North Carolina statutory provisions require judicial officials to impose a secured bond “[i]f the judicial official determines that the defendant poses a danger to the public,” or if

¹⁴⁰ Id. at 3.

¹⁴¹ Richard Berk, *An Impact Assessment of Machine Learning Risk Forecasts on Parole Board Decisions and Recidivism*, 13 J. EXP. CRIMINOL. 193, 193 (2017)

¹⁴² Id.

¹⁴³ Richard Berk et al., *A Randomized Experiment Testing Inmate Classification Systems*, 2 CRIMINOL. & PUB. POL’Y 215, 232 (2003).

¹⁴⁴ Jill Viglione, Daniell S. Rudes, and Faye S. Taxman, *Misalignment in Supervision: Implementing Risk/Needs Assessment Instruments in Probation*, 42 CRIM. J. & BEHAV. 263 (2015). See also Joel Miller and Carrie Maloney, *Practitioner Compliance With Risk/Needs Assessment Tools: A Theoretical and Empirical Assessment*, 40 CRIM. J. & BEHAV. 716 (2013) (surveying a national sample of probation and parole officers and finding that half “were ‘formal’ in their compliance [with risk assessment instruments]: filling out the tools, but often making decisions that did not correspond with tool results” Id at 716.)

¹⁴⁵ Criminal Investigation and Adjudication Committee Report, *Evidence-Based Recommendations to Improve the State’s Criminal Justice System, Appendix C, Pre-Trial Justice* 40 n.121 (October 2016) [NCCALJ Final Report], at https://nccalj.org/wp-content/uploads/2017/pdf/nccalj_criminal_investigation_and_adjudication_committee_report_pretrial_justice.pdf.

¹⁴⁶ Id. at 32; see also N.C. G.S. § 15A-533.

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a defendant commits a crime on pretrial release, an official can double the amount of money required.¹⁴⁷ Such statutes focus judges on pre-trial risk, but they conflate public safety with imposition of a money bond, and risk is considered to be reflected only by the criminal charges, and not by other evidence such as risk assessment. For that reason, a task force in North Carolina suggests that in order to change decisionmaking the system must overcome “faulty assumptions,” which will require more than just adopting risk assessment.¹⁴⁸

IV. REGULATING RISK ASSESSMENT IN CRIMINAL JUSTICE

The experience of a range of jurisdiction with risk assessment adds support to our concern that far more attention must be paid to the structure of decisionmaking that is supposed to be informed by risk assessment. Empirical research on judges has generally asked whether extra-legal factors influence their decisionmaking and has found that judges, like all decisionmakers, can be influenced by forms of biasing information.¹⁴⁹ These problems are not unique to the risk assessment setting. For example, in the area of forensic science, judges have been criticized for not applying scientific criteria for screening out unreliable and invalid forensic evidence.¹⁵⁰ Efforts to encourage judges to use more stringent gatekeeping in the forensic science area have been largely unsuccessful.¹⁵¹

In this Part, we develop proposals for improving how decisionmaking can be designed to encourage actual deliberation and more thoughtful use of risk assessment and we discuss how they fit in with a Due Process framework for judicial review. In this Article, we provide a roadmap for: (1) presenting risk information in a more comprehensible way to decisionmakers; (2) structuring decisionmaking to better make use of that information; and (3) accompanying these reforms with ongoing monitoring, through judicial review and open peer review, of data to assess on-the-ground use of risk assessment. Section A discusses (1) the presentation of risk information. Section B discusses (2) how to structure decisionmaking. Section C turns to regulation of risk information both through judicial review and peer review by researchers.

A. Conveying Risk Information to Judges

¹⁴⁷ G.S. §15A- 534(d2)(1), (d3).

¹⁴⁸ At 34.

¹⁴⁹ Jeffrey J. Rachlinski and Andrew J. Wistrich, *Judging the Judiciary by the Numbers: Empirical Research on Judges*, 13 ANN. REV. L. & SOC. SCI. 203 (2017).

¹⁵⁰ Stephanie Damon-Moore, *Trial Judges and the Forensic Science Problem*, 92 N.Y.U. L. REV. 1532 (2017); Nat'l Research Council, *Strengthening Forensic Science in the United States: A Path Forward* 106 (2009) (“Review of reported judicial opinions reveals that, at least in criminal cases, forensic science evidence is not routinely scrutinized pursuant to the [applicable] standard of reliability”).

¹⁵¹ Brandon L. Garrett and M. Chris Fabricant, *The Myth of the Reliability Test*, 86 FORDHAM L. REV. 1559 (2018).

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As this section will describe, more research needs to be done on how most effectively to convey risk information to decisionmakers. One challenge in this regard is that decisionmakers may prefer information presented to them in categories rather than frequencies or probabilities, which then raises important policy questions regarding how risk categories are defined. That problem suggests why the design of structured decisionmaking processes must be preceded by a more fundamentally transparent process: the regulation of risk assessment requires a set of rules designed to ensure public approval and ongoing review of risk assessment in criminal justice.

An initial question is whether changing the way that risk information is conveyed can improve its use. Social science scholarship studying how to communicate risk of recidivism in criminal justice has been the subject of decades of scholarship, but it is comparatively thin compared with studies on how to communicate assessment of risk for violent behavior in other legal contexts, such as involuntary civil commitment.¹⁵² That literature describes how it is not enough to simply provide information about risk. That information, to be used effectively, must be presented in a way that overcomes misunderstandings about its meaning and emphasizes its relevance to the decisionmaking task at hand.¹⁵³

Even if valid risk information is being communicated, perceptions of risk can differ depending on the *how* risk is communicated.¹⁵⁴ The format may matter, including how risk is framed.¹⁵⁵ Not all decisionmakers are numerate and comfortable with quantitative information.¹⁵⁶ Presenting information in the form of frequencies (20 out of 100 offenders), versus probabilities (20% of offenders), versus categorical terms (such as “high risk”) can powerfully impact how well decisionmakers use the information.¹⁵⁷ Judges and other decisionmakers in the criminal system tend to prefer categorical information, such as estimates of low, moderate, or high risk. However, such categorization raises crucial questions

¹⁵² N. Zoe Hilton, Nicholas Scurich and Leslie-Maaiké Helmus, *Communicating the Risk of Violent and Offending Behavior: Review and Introduction to this Special Issue*, 33 BEHAV. SCI LAW 1 (2015).

¹⁵³ *Id.* (summarizing literature).

¹⁵⁴ Varela, J. G., Boccaccini, M. T., Cuervo, V. A., Murrie, D. C., & Clark, J. W., *Same Score, Different Message: Perceptions of Offender Risk Depend On Static-99R Risk Communication Format*, 28 L. & HUM. BEHAV. 418 (2014).

¹⁵⁵ Hilton et al, *supra* at 3 (summarizing literature in the healthcare context).

¹⁵⁶ *Id.* at 3 (summarizing literature on numeracy or specifically “risk illiteracy”).

¹⁵⁷ Many studies have shown how participants’ risk perception differs when risk is framed as a frequency versus a percentage. See, e.g. *id.* at 3; Nicholas Scurich et al., *Innumeracy and Unpacking: Bridging the Nomothetic/Idiographic Divide in Violence Risk Assessment*, 36 LAW & HUM. BEHAV. 548, 548 (2012); Paul Slovic et al., *Violence Risk Assessment and Risk Communication: The Effects of Using Actual Cases, Providing Instruction, and Employing Probability Versus Frequency Formats*, 24 LAW & HUM. BEHAV. 271 (2000); Leam A. Craig & Anthony Beech, *Best Practice in Conducting Actuarial Risk Assessments with Adult Sexual Offenders*, 15 J. SEXUAL AGGRESSION 193, 197 (2009); Nicholas Scurich, Richard S. John, *The Effect of Framing Actuarial Risk Probabilities on Involuntary Civil Commitment Decisions*, 35 LAW & HUM. BEHAV. 83 (2011); N. Bodemer et al., *Communicating Relative Risk Changes with Baseline Risk: Presentation Format and Numeracy*, 34 Medical Decisionmaking 615 (2014). Additional research suggests that categorical presentations are still more effective, although they raise questions concerning the definitions and consequences of the categories set out.

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regarding how categories should be defined.¹⁵⁸ Decisions regarding thresholds to place individuals into risk categories should be made through a public regulatory process. In Virginia, for example, the categorization of “low risk” offenders to be recommended for “alternative sentences” was made by a public agency through an open process. When private companies design risk assessment instruments, categorization is often neither public nor transparent.¹⁵⁹

Some jurisdictions have used visual models to display what risk information conveys and how to incorporate the information into decisions, and research shows that graphs can sometimes improve assessments of risk (although perhaps less so for less numerate people).¹⁶⁰ A risk/detention matrix can display and convey the recommended structure of decisionmaking, rather than simply supply risk information and ask the decisionmaker to incorporate it in his or her judgment. However, research is currently inconclusive regarding whether conveying risk assessment using images—graphs, charts, or histograms—improves the effectiveness of decisionmaking in criminal justice contexts.¹⁶¹

Studies have shown that like all decisionmakers, judges can be influenced by a range of factors, including their political beliefs, desire for promotion, and consideration for reappointment or election.¹⁶² Particularly relevant to risk assessment of offenders is the concern that judges may not want to be perceived as “soft” in their sentencing practices, out of concern regarding reappointment and reelection; the recall of the judge in the Brock Turner case is a high profile example of the public scrutiny that can result from sentencing decisions.¹⁶³

Separate and apart from any career-oriented influence on behavior, there is research finding that judges, like all individuals, rely on shortcuts or heuristics when processing information.¹⁶⁴ That suggests that judges may not give sufficient weight to statistical evidence that fails to confirm their prior beliefs. Studies have found that judges ostensibly relying on a range of factors in setting bail, for example, often rely solely on prosecutor’s recommendations, rather than all of the other data that they receive. Even judges who believe they rely on many types of information in fact rely “almost exclusively on prosecutorial recommendation.”¹⁶⁵ Studies have also found

¹⁵⁸ See, e.g. S.A. Evans and K.L. Salekin, *Involuntary Civil Commitment: Communicating with the Court Regarding “Danger to Other,”* 38 *LAW & HUM. BEHAV.* 325 (2014) (finding in a survey of judges that judges gave the same weight to frequency-based and probabilistic presentations, but that categorical messages were viewed as more probative); Hilton et al, *supra* at 7-8.

¹⁵⁹ See Eaglin, *Constructing Recidivism Risk*, *supra* note xxx, at 60, 117.

¹⁶⁰ Hilton et al, *supra* at 3 (summarizing literature on use of graphs to communicate risk); ACLU NJ, NACDL, NJ Public Defenders, *The New Jersey Pretrial Justice Manual*, Dec., 2016, at 11.

¹⁶¹ Hilton et al, *supra* at 6.

¹⁶² For an excellent summary of the literature, see Jeffrey Rachlinski and Andrew J. Wistrich, *Judging the Judiciary by the Numbers: Empirical Research on Judges*, 13 *ANN. REV. L. & SOC. SCI.* 203 (2017),

¹⁶³ Cristal Hayes and John Bacon, *Judge Aaron Persky, Wo Gave Brock Turner Lenient Sentence in Rape Case, Recalled From Office*, USA Today, June 6, 2018.

¹⁶⁴ *Id.* at 212-213.

¹⁶⁵ *Id.* at 213.

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troubling evidence that judges rely on an offender's race when making decisions concerning sentencing.¹⁶⁶

The approach taken by the Pennsylvania Commission on Sentencing has been to convene focus groups of judges, district attorneys, public defenders, and probation officers, in order to create a survey and solicit evidence on what methods for communicating risk at sentencing might be effective.¹⁶⁷ Not only may it create more legitimacy and accountability to involve a range of actors in the decisions whether and how to use risk assessment, but input may be useful regarding how to present and incorporate risk information in decisionmaking.

Whether attorneys are making presentations to the decisionmaker and advocating for the use of risk assessment information at the time that the decision is made may also make a difference. In the pre-trial context, studies suggest that provision of counsel at hearings can powerfully affect release rates.¹⁶⁸ Further research is needed on the role of counsel regarding risk-based decisionmaking.

B. Structured Decisionmaking and Risk Assessment

This Section focuses on how to structure decisionmaking to better make use of risk information. Structured decisionmaking is defined simply as a formal or rule-based procedure for making decisions. Some states have incorporated risk assessment into decisionmaking frameworks, providing structured guidance on how to make use of risk assessment information. Other jurisdictions, like Virginia, preserve fairly unfettered discretion of decisionmakers, regarding whether and how to make use of risk assessment information. It may be that even requiring reasoned decisionmaking and providing for review and data collection on decisionmaking is not enough. Efforts to incorporate quantitative information into decisionmaking may need to rethink the fundamental structure of that decisionmaking process. The danger of structuring professional judgment is that the value judgements made may not be consistently or reliably reflective of the underlying risk information.¹⁶⁹ The interface between risk information and the structure or categories recommended must be carefully assessed. Fast-paced bail decisionmaking may need to be adapted to permit the time to make efficient use of risk assessment information. Sentencing

¹⁶⁶ Id. at 221.

¹⁶⁷ Interim Report 8, *Communicating Risk at Sentencing*, Risk/Needs Assessment Project, Pennsylvania Commission on Sentencing (2014). The study, however, received responses from only 21% or 200 of the 962 surveyed. Id. at 6. That study found that respondents found risk information easiest to understand and interpret when receiving full information and reported that respondents found that tables were more useful than graphs. Id. at 12. See also R. Barry Ruback et al, *Communicating Risk Information at Sentencing in Pennsylvania*, 80 Federal Probation 47 (September 2016).

¹⁶⁸ American Council of Chief Defenders, *Policy Statement on Fair and Effective Pretrial Justice Practices* (2011), at 14; Douglas L. Colbert, Ray Paternoster and Shawn Bushway, *Do Attorneys Really Matter? The empirical and Legal Case for the Right of Counsel at Bail*, 23 CARDOZO L. REV. 1719 (2002).

¹⁶⁹ Scurich, *supra* note xxx, at 8-9.

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guidelines may need to be made more binding, and more user-friendly in their incorporation of risk assessment. Substantial judicial education efforts may be needed.

1. Presumptive Risk Assessment

An alternative approach could simplify decisionmaking to make the use of risk assessment presumptive, rather than rely on traditional exercise of discretion by judges or other decisionmakers. Studies suggest that providing a numerical “anchor” can affect judges’ risk assessments.¹⁷⁰ A sentencing recommendation that judges impose no jail or prison time to the lowest risk offenders might be far more salient than a notation that a person is a low-risk offender, without any guidance as to what alternative sentence is the appropriate one in that situation.

Another approach would be to require the sentencing judge to state on the record a cogent reason whenever he or she disregards the sentence-lowering implications of a low-risk designation. Asking judges to give reasons in writing may result in more careful reasoning than an approach where a decision can be made quickly and without any reasoned justification. The approach has its drawbacks, however. The Kentucky experience suggests that judges that are opposed to the risk-based recommendation can readily offer cursory explanations for not using it. That information, though, can influence policymakers. State sentencing commissions could periodically review the “cogency” of these rationales from presumptive deference to empirical findings of low risk.

Providing feedback to judges concerning their use of risk assessment may improve their performance. It is difficult and uncommon for there to be a successful appeal of a pre-trial bail decision or a sentencing decision. Judges are essentially unreviewed by appellate courts in settings in which risk assessments are made. The same is typically the case in juvenile cases and for parole or probation decisions as well. The only accountability may come in the form of election or reappointment by legislators or supervising administrators. Moreover, judges and other criminal justice officials with large caseloads have strong incentives not to spend time on matters that they are unlikely to be asked to revisit ever again. A real concern could arise regarding the way in which feedback could skew incentives. Some jurisdictions have many more alternative sentencing and treatment options than others, and some judges could be penalized for not being in a high-resource jurisdiction in which risk-based sentencing is more feasible. Any effort to review and provide feedback to judges would have to take account of the options available to judges or other decisionmakers.

2. Automating the Use of Risk Assessment

One approach that might reduce the perceived burden on judges or other decisionmakers would be to automate part of their work. In Virginia, for example,

¹⁷⁰ Id. at 215.

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one development that might assist judges in applying the NVRA, and explaining reasons for not granting alternative sentences under the NVRA, is the adoption of the automated web-based Sentencing Worksheets and Interactive File Transfer (“SWIFT”) program, which has now been pilot-tested throughout the state.¹⁷¹ This program will allow for much more rapid recording of all types of information required at sentencing, including the Nonviolent Risk Assessment for eligible offenders. Drop-down menus could supply the most common reasons a judge might decline to impose an alternative intervention on an offender who scores as low risk (e.g., “I believe the offender’s risk is higher than indicated by the Nonviolent Risk Assessment,” “No appropriate community program to address this offender’s needs exists in this jurisdiction,” or “[This offender appears not to be responsive to treatment intervention.” Automated systems can help to structure decisionmaking by setting out the order of decisions to be made and requiring entry of information to explain each decision.

3. Needs and the Mitigation of Risk

In a range of settings, risk assessments may accompany needs assessments, e.g., mental health screenings, substance abuse screenings, educational assessments where the goal is not just to assess risk but also to mitigate it by providing rehabilitative interventions.¹⁷² For example, in juvenile justice decisionmaking, it is common for risk assessment to be considered alongside needs assessments of various types.¹⁷³ Substance abuse screenings may be used to address whether a person could benefit from drug treatment. When decisionmakers are evaluating not just future risk but also how to mitigate it through treatment and other rehabilitation, they will need to look at more than just risk assessments. They must then have guidance on how to evaluate and incorporate information from very different sources---to examine not just risk, but needs.

Risk assessment instruments are not designed to tell decisionmakers anything about whether an alternative to punishment (or bail, or supervised probation) might mitigate risk. Indeed, risk factors on such instruments that are not *causal* are not directly relevant to the reduction of risk.¹⁷⁴ For example, substance abuse is a causal risk factor for recidivism, a risk factor which often can be changed using a treatment

¹⁷¹ Virginia Criminal Sentencing Commission, 2017)

¹⁷² For an excellent overview of a wide range of screening and assessment instruments used in the area of co-occurring mental and substance abuse disorders, see Substance Abuse and Mental Health Services Administration (SAMHSA), *Screening and Assessment of Co-Occurring Disorders in the Justice System* (2015).

¹⁷³ See Shook and Sari, *supra* note xxx, at 1342 (describing interviews with juvenile justice professionals in several states and describing how 35% described using three forms of decisionmaking: risk assessment, needs assessment, and security classification).

¹⁷⁴ John Monahan and Jennifer L. Skeem, *Risk Assessment in Criminal Sentencing*, 12 ANNU. REV. CLIN. PSYCHOL. 489, 497 (2016).

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intervention, and if substance abuse is changed recidivism can be reduced.¹⁷⁵ Similarly, to reduce failure to appear in the pre-trial setting, messaging and reminders may reduce the risk of failure to appear.¹⁷⁶ Other risk factors, such as a prior criminal history or age, are not changeable by any intervention.

One challenge faced by judges and other decisionmakers is that they may face complex choices concerning both risks and needs and tradeoffs between the two. For example, judges may be reluctant to divert a low risk offender from prison if no community program to address the offender's is available in the court's jurisdiction. Correspondingly, an offender assessed as at high risk of recidivism might benefit most from a community treatment program, but even if such community treatment were available, diverting that offender from prison to community treatment might well be precluded on public safety grounds.. As the National Center for State Courts evaluation of Virginia's approach noted:

One of the primary concerns of judges and probation officers is the difficulty many young males have qualifying for alternative punishment. Unemployed, unmarried, males under age 20 begin with a score of nine points [on the NVRA], and any additional points render them ineligible for a diversion recommendation. Judges and probation officers know that VCSC research shows this type of offender has a high rate of recidivism, but they also believe this is the group most in need of services.¹⁷⁷

We similarly found that Virginia judges often raised this concern in their survey responses. In doing so, they were conflating risk assessment with needs assessment. The NVRA and other risk assessment tools can tell decisionmakers that an offender is low-risk and might be diverted from prison without endangering public safety. However, such instruments do not inform judges or probation officials or corrections officials which offenders might benefit the most from messaging, or drug treatment, or mental health treatment, or jobs programs.

In regulating risk assessment, policymakers should separate the tasks that we are asking judges to perform: make a recommendation regarding incarceration, whether pretrial or as punishment for a conviction, but also make a separate recommendation concerning any treatment interventions. When multiple sources of information are provided, it is all the more important that there be a structured decisionmaking process providing guidance on how to incorporate information from

¹⁷⁵ Id. It is very difficult to identify such causal risk factors where many programs “are aimed at multiple factors at the same time” in a “blunderbuss fashion” that makes it difficult to conduct randomized controlled trials. Id. at 498.

¹⁷⁶ See, e.g. Stanford Legal Design Lab, The Court Messaging Project, *available at* <http://www.legaltechdesign.com/CourtMessagingProject/>; See Pretrial Justice Institute, 2009 Survey of Pretrial Services Programs, August 11, 2009 at 50 (describing small number of pretrial programs that include messaging options).

¹⁷⁷ National Center for State Courts, *supra* note xxx, at 14.

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more than one source. Otherwise, risk assessment may be at odds with needs assessment.

4. Changing Institutional Incentives

Criminal justice actors may not readily incorporate risk assessment, or any other guidance to inform their discretion, if it conflicts with their pre-existing incentives. If judges have crushing dockets and very little time to consider pre-trial or sentence determinations, providing detailed quantitative information in a manner that would slow the process down will not likely succeed. Realigning those incentives may involve incorporating new approaches into official guidelines, providing resources to free decisionmaking time to consider new data, and rewarding decisionmakers for their use of new data.

Not just practical, professional, and reputational, but also financial incentives and resource constraints may strongly impact decisionmakers. If judges or prosecutors are funded based on numbers of felony convictions, then alternative sentencing may reduce their institutional budgets. If there are no resources for community treatment alternatives to prison, then judges will not be able to divert offenders to such programs. Approaches to re-orient institutional incentives include adopting a “justice reinvestment” model to fund the diversion of low-risk offenders. In this legislative scheme, the fiscal benefits of reducing incarceration rates are used to offset the costs of alternatives to incarceration (e.g., community-based mental health and substance abuse programs). In California, for example, a “realignment” approach enacted in legislation designed to comply with court orders to reduce prison overcrowding, provides localities fiscal incentives to reduce jail incarceration rates.

C. Regulation of Risk Assessment

This Section focuses on regulation, through judicial review and through peer review, of risk assessment as used in practice. Judicial review no longer seems so implausible an approach. In a widely noted ruling that may prove influential in other jurisdictions, the Fifth Circuit largely affirmed a federal judge order that the cash bail system in Harris County, Texas, violates the Due Process Clause.¹⁷⁸ The Fifth Circuit found a state-protected liberty interest in pretrial release and affirmed the judge’s findings that the system as administered was arbitrary. The opinion emphasized that the judges departed from release recommendations by pre-trial services as much as 66% of the time and that when pre-trial services informed the court that a person was indigent, judges insisted on bail knowing full well that the result would be detention.¹⁷⁹ What was also noteworthy, and consistent with our findings in Virginia, was that this pattern of behavior was not based on any written procedures, but rather an “unwritten custom and practice that was marred by gross

¹⁷⁸ O’Donnell v. Harris County, Texas, 892 F.3d 147 (5th Cir. 2018).

¹⁷⁹ Id.

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inefficiencies, did not achieve any individualized assessment in setting bail, and was incompetent to do so.”¹⁸⁰ As a result, the Fifth Circuit described how bail had been imposed “almost automatically on indigent arrestees” without any meaningful consideration of either risk or ability to pay.¹⁸¹

However, the panel also emphasized that it would be unduly burdensome to require that judges provide written decisions explaining their reasons for denying release or bail.¹⁸² Moreover, that ruling, as noteworthy as it is as a constitutional ruling, did not provide a roadmap for the improvement of judicial decisionmaking using risk information. Indeed, while it found the then-current system in Harris County to have been arbitrary, due to the rote insistence on cash bail for arrestees, the ruling at the same time encouraged individualized decisionmaking without any minimal accountability in the form of reason-giving. Perhaps the new procedures that are developed on remand will put an end to a process that automatically imposed detention, through the use of cash bail, on indigent arrestees. However, the procedures that the Fifth Circuit focused on, such as providing written reasons may not be the best way to ensure consistency and reliability in judicial decisionmaking. If decisionmakers provide “individualized, case-specific reasons” but continue to automatically impose cash bail on indigent arrestees, then the result will be no remedy at all.¹⁸³

We believe that the Due Process Clause demands some additional assurance of consistency and reliability above and beyond the minimal requirement that some individual decisionmaker consider, in theory, the relevant criteria, and state some reason for a decision. Moreover, an entrenched, unwritten custom and practice may take more forceful an intervention to displace. Additional language in the Fifth Circuit opinion, focusing on how in practice judges did not heed pre-trial services and did not apply informed criteria to their decisionmaking, supports our view. In the sections that follow, we discuss what should go into the design of a structure for judging risk and why they assist in assuring a non-arbitrary, constitutional, and sound risk assessment procedure.

We would hope that future rulings on the constitutionality of the use of risk assessment take into account these features of procedures that should govern. In this Article, we provide a roadmap for: (1) presenting risk information in a more comprehensible way to decisionmakers; (2) structuring decisionmaking to better make use of that information; and (3) accompanying these reforms with ongoing monitoring, through judicial review and open peer review, of data to assess on-the-ground use of risk assessment.

¹⁸⁰ Id. at 153.

¹⁸¹ Id. at 159.

¹⁸² Id. at 160 (“We decline to hold that the Constitution requires the County to produce 50,000 written opinions per year to satisfy due process.”). The Court also relied on empirical analysis of outcomes in the county. Paul Heaton et al., *The Downstream Consequences of Misdemeanor Pretrial Detention*, 69 STAN. L. REV. 711, 786–87 (2017).

¹⁸³ Id. at 159.

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1. Specifying Risk Assessment Criteria

The Fifth Circuit analysis noted the deference due to criminal justice actors, in a due process analysis. While liberty of arrestees, the court noted, is a very important interest, the court also noted that an efficient process stands to benefit arrestees, who desire prompt resolution of their cases.¹⁸⁴ As a result, the panel was reluctant to burden judges with reporting requirements, such as statements of written reasons. The ruling is consistent with the larger practice in criminal justice. We note also that for risk assessment used by judges at sentencing, or by other decisionmakers, such as corrections officials or parole officials, the same liberty interest cannot be asserted. The Due Process Clause provides for far less protection in those settings.¹⁸⁵ We nevertheless hope that the framework and practices that we discuss here will be used in those settings, even if judicial review will be still more deferential than in the pre-trial setting.

Criminal justice actors decisionmaking has typically lacked a practice of transparency and deliberation.¹⁸⁶ Some jurisdictions have incorporated public discussion and input into their development of risk assessment instruments.¹⁸⁷ Most jurisdictions have adopted risk assessment without setting out any such criteria and often without public discussion of what choices should be made. For example, Virginia did adopt risk assessment in sentencing in a statute, as described, and it specified that the lowest risk twenty-five percent of offenders should be given alternative sentences. That statute did not specify how risk assessment should be conducted, however. The Commission did make transparent the instrument selected for use in sentencing and sought input on its design. Nor, in Virginia, is there a framework for judges to use when deciding how to incorporate risk into decisionmaking. This is a contrast to the pre-trial instrument used in Virginia, the VPRAI, which is

¹⁸⁴ Id. The Fifth Circuit also rejected abstention in the case, where no case-specific remedies were sought. Id. at 156.

¹⁸⁵ *Greenholtz v. Inmates of the Nebraska Penal and Correctional Complex*, 442 U.S. 1, 8 (1979) (finding no liberty interest in parole decisionmaking); see also Kimberly Thomas and Paul Reingold, *From Grace to Grids, Due Process Protection for Parole*, 107 J. CRIM. L. & CRIMINOLOGY 213 (2017).

¹⁸⁶ Barry Friedman & Maria Ponomarenko, *Democratic Policing*, 90 N.Y.U. L. REV. 1827, 1865 (2015); Christopher Slobogin, *Policing as Administration*, 165 U. PA. L. REV. 91, 91 (2016); Christopher Slobogin, *Principles of Risk Assessment: Sentencing and Policing*, 15 OHIO ST. J. CRIM. L. 583 (2018). Andrew Manuel Crespo, *Systemic Facts: Toward Institutional Awareness in Criminal Courts*, 129 HARV. L. REV. 2049 (2016); Tracey L. Meares & Bernard E. Harcourt, *Foreword: Transparent Adjudication and Social Science Research in Constitutional Criminal Procedure*, 90 J. CRIM. L. & CRIMINOLOGY 733, 743 (2000); Rachel E. Barkow, *Institutional Design and the Policing of Prosecutors: Lessons from Administrative Law*, 61 STAN. L. REV. 869 (2009).

¹⁸⁷ See Mesa County Evidence-Based Pretrial Implementation Guide, 2015 Innovations in Criminal Justice, at 6, 11, at <http://www.apainc.org/wp-content/uploads/Mesa-County-Evidenced-Based-Pretrial-Implementation-Guide-1.pdf>.

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accompanied by a PRAXIS, or a matrix that gives decisionmakers a guide as to how to incorporate risk assessment information into pre-trial decisions.¹⁸⁸

2. Independent Review and Validation

The Fifth Circuit discussion, largely affirming the district court findings, did not discuss whether the pre-trial services data that judges had been considering or ignoring in their bail decisions, was accurate, and therefore, whether it was arbitrary for judges to be ignoring sound data. The Fifth Circuit ruling emphasized the importance of individual decisions, not accurate decisions. A due process analysis could instead emphasize the need for accurate decisionmaking. Indeed, the district court decision in the case did discuss in admirable detail empirical research, including by independent academics, who had studied the bail process in Harris County, Texas, and found that denial of bail had systematic harmful effects on outcomes in criminal cases.¹⁸⁹ The district court also cited to studies showing that cash bail is not more effective than alternatives at assuring appearances pre-trial for misdemeanor arrestees.¹⁹⁰

When constructing remedies, such an analysis could similarly examine empirical data to inform new procedures. The district court described how Harris County had agreed to use a new risk assessment tool, the PSA, to inform pre-trial decisionmaking, and was in the process of implementing this new risk-assessment-based approach.¹⁹¹ Judicial review can help to ensure that the relevant decisionmakers validate their data and select instruments that are valid. The review of risk assessment instruments has not always been public, or by researchers independent of those who developed the instrument. If instruments are only validated in-house, or by the originators of the instrument, then the validations cannot be verified independently. An additional concern, as described in Part I, with risk assessment use has been that the data, even if sound when the risk assessment instrument is adopted, may be out of date if criminal offending patterns change. Instruments should be re-validated over time, at reasonable intervals, and with attention to local variation in populations, resources, and crime patterns.¹⁹²

3. Monitoring Implementation in Practice

¹⁸⁸ Pretrial Services Agencies: Risk-Informed Pretrial Decisionmaking in the Commonwealth of Virginia, November 10, 2016, at <http://vscc.virginia.gov/Virginia%20Pretrial%20Services%20Presentation%2012-5-2016.pdf>.

¹⁸⁹ O'Donnell v. Harris County, Texas, 251 F.Supp.3d 1052, 1106 (S.D. Tex 2017) (citing Heaton et al., *supra* note xxx).

¹⁹⁰ *Id.* at 1120-21.

¹⁹¹ *Id.* at 1124-25.

¹⁹² For extended criticism of “zombie predictions” relying on outdated data, see John Logan Koepke and David Robinson, *Danger Ahead: Risk Assessment and the Future of Bail Reform*, WASH. L. REV. (forthcoming, 2018).

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A behavioral component of any risk assessment strategy, focusing on how decisionmakers actually use risk information is essential. The Fifth Circuit ruling, with its emphasis on custom and practice, and not just the criteria formally in place, was very helpful. That ruling supports a due process analysis of how risk assessment is actually judged. Indeed, the district judge noted that even once Harris County adopts a risk assessment approach, the concern remained that the risk assessment information provided by the PSA was only informative, and judges might ignore that information just like they had ignored 66 percent of the time, recommendations of pre-trial services.¹⁹³ Indeed, there is some evidence that in the first year of implementation of the risk assessment instrument, that it has not mapped on well to the bail schedule that judges use, failures to appear are still common, and some judges have “fallen back on their old ways, of trying to issue orders of preventive detention by setting money bail at an amount they know the person can't afford.”¹⁹⁴

A judicial remedy in this setting may require more ongoing supervision than the orders issued by the federal courts in Harris County, Texas. Our findings suggest the need for ongoing study regarding how judges and other decisionmakers use risk assessment instruments in the various contexts in which they are asked to do so.¹⁹⁵ The same is true for other types of decisionmakers who use risk assessments, such as police or probation officers. In the juvenile justice setting, one study found that “there was a positive relationship between frequency of use and perceptions of value.”¹⁹⁶ It may be that over time, judges and other decisionmakers become accustomed to and see value in using structured decisionmaking. However, if decisionmakers widely vary in how they appreciate the value of risk assessment, then their decisions may become even more non-uniform over time.

In addition, as described above, the evidence from these re-evaluations must be incorporated into training and feedback that judges and other decisionmakers receive. Just as judges receive guidance from sentencing guidelines and they know that departures from the guidelines will be reviewed more carefully or result in other types of scrutiny, judges should understand that poor use of risk assessment will

¹⁹³ O'Donnell v. Harris County, Texas, 251 F.Supp.3d at 1125.

¹⁹⁴ Megan Flynn, *Harris County Bail Systems Offers Little Help to Defendants Who Most Need it, Cases Reveal*, Houston Chronicle, January 22, 2018.

¹⁹⁵ See Koepke and Robinson, *Danger Ahead*, *supra*, at 52 (“By tracking concurrence, divergence, and why a judge diverged, policymakers may be able to create a positive feedback loop: The more that judges understand how a risk assessment tool works, and the more that the developers of a risk assessment tool understand how judges use — or don’t use — their tool, the better.”). See also Jodi L. Viljoen, Dana M. Cochrane, and Melissa R. Jonnson, *Do Risk Assessment Tools Help Manage and Reduce Risk of Violence and Reoffending? A Systematic Review*, 42 LAW & HUMAN BEHAV. 181 (2018): [R]ather than focusing exclusively on predictive validity studies and the development of new [risk assessment] tools, researchers need to pay greater attention to how tools are applied to guide real-world decisions, such as by testing the pathways between risk assessment and risk management, identifying areas of slippage, and developing strategies to facilitate the ability of risk assessments to translate into better risk management efforts. Such initiatives are essential to ensuring that the potential value of risk assessment is more fully realized. Id. at 205.

¹⁹⁶ Shook and Sari, *supra* note xxx, at 1347.

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similarly result in reversals or other types of scrutiny. Unreviewed discretion will predictably result in poor outcomes. Supplementing traditional exercise of discretion with risk assessment information will not itself lead to better outcomes, however. The use of risk assessment must actually limit and inform the discretion of judges, in a way in which they are accountable if they do not routinely take information on risk into account in their decisionmaking.

CONCLUSION

A central problem facing criminal justice today is that “appropriately reporting risk assessment results and commenting on its accuracy make little difference if the decision-makers do not understand the information, which is a serious possibility.”¹⁹⁷ In this Article, we have explored these challenges. Just as judicial sentencing guidelines have been criticized not just for the content of the guidelines, but how judges have applied them over time, we must look carefully at how judges apply risk assessment instruments in their courtrooms, and how other decisionmakers such as probation officers and parole officers apply them as well. Even if in theory, a risk assessment instrument can better sort offenders more and less in need of correctional supervision, in practice, officials may not use these instruments as intended.

We find in two studies of the use of risk assessment in Virginia, and in surveying literature concerning risk assessment in other criminal justice settings and jurisdictions, that judges are not using risk assessments consistently, even in Virginia, long held out as a national model for the use of clear, validated, and legislatively authorized use of risk at sentencing. Nor should that be a surprise, given that judges and other decisionmakers typically receive almost no training in risk assessment, and that there is no review of its use.

The use of risk assessment in criminal justice should be regulated, with rules to inform and structure decisionmaking, and a process for developing those rules. The Due Process Clause and other constitutional criminal procedure sources do not provide sufficiently definitive or informative guidance in this new world in which risk, but also needs, are judged at each stage of the criminal process. However, due process rulings could result in remedies that better structure and inform the risk assessment process. We view the Fifth Circuit ruling regarding pre-trial decisionmaking in Harris County as a step in the right direction, but also a missed opportunity. What was important about that ruling was emphasis on how judges do their work in practice. What was missing was a plan for ongoing oversight over how judges incorporate validated risk and other information into their decisionmaking, and a procedural framework designed to ensure consistency and accuracy. In Part IV, we set out a roadmap for how to better communicate risk assessment information to judges and other decisionmakers and how to improve the structure through which

¹⁹⁷ L. Maaike Helmus and Kelly M. Babchishin, *Primer on Risk Assessment and the Statistics Used to Evaluate its Accuracy*, 44 CRIM. J. & BEHAV. 8-9 (2017).

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risk assessment is considered, so that it can be used consistently and accurately in practice, to the degree intended by policymakers.

Using risk assessment to reduce reliance on incarceration and improve criminal justice outcomes is a salutary goal. As Richard Frase has argued, “with respect to low risk assessments, can we afford to renounce any major sources of mitigation, given our inflated American penalty scales and overbroad criminal laws?”¹⁹⁸ Risk assessment could be used to dramatically reduce reliance on incarceration. So far that promise has not been realized. Unless policymakers examine and address the problem of judging risk-assessment by the decisionmakers tasked with using it, the risk revolution in criminal justice will not achieve its intended goals.

¹⁹⁸ Richard S. Frase, *Recurring Policy Issues of Guidelines (and non-Guidelines) Sentencing: Risk Assessments, Criminal History Enhancements, and the Enforcement of Release Conditions*, 26 FED. SENT’G REP. 145, 149 (2014).