# OPEN THE JAIL CELL DOORS, HAL: A GUARDED EMBRACE OF PRETRIAL RISK ASSESSMENT INSTRUMENTS

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*In recent years, criminal justice reformers have focused their attention on pretrial detention as a uniquely solvable contributor to the horrors of modern mass incarceration. While reform of bail practices can take many forms, one of the most pioneering and controversial techniques is the adoption of actuarial models to inform pretrial decision-making. These models are designed to supplement or replace the unpredictable and discriminatory status quo of judicial discretion at arraignment. This Note argues that policymakers should experiment with risk assessment instruments as a component of their bail reform efforts, but only if appropriate safeguards are in place.*

*Concerns for protecting individual constitutional rights, mitigating racial disparities, and avoiding the drawbacks of machine learning are the key challenges facing reformers and jurisdictions adopting pretrial risk assessment instruments. Absent proper precautions, risk assessment instruments can reinforce, rather than alleviate, modern criminal justice disparities. Drawing from a case study of New Jersey's recent bail reform program, this Note examines the efficacy, impact, and pitfalls of risk assessment instrument adoption. Finally, this Note offers a broad framework for policymakers seeking to thoughtfully experiment with risk assessment instruments in their own jurisdictions.*

## INTRODUCTION

"Sometimes you sit and you stare at the defendant, you get a sense that this defendant is just going to take a hike."[1] A New York Supreme Court justice made this startling comment about the defendant's risk of flight when pressed by a defense attorney to only consider New York's nine required statutory

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    1. Transcript of Proceedings at 9, People v. [redacted] (N.Y. Sup. Ct. July 11, 2017) (on file with author). The author worked on this case while at the Legal Aid Society of New York. The defendant's name is redacted to protect their privacy.

factors when setting bail.[2]  Such bold assertions about risk of flight—while clearly unlawful—are appealable.[3]  This judge was at least forthcoming about the proprietary black box of assumptions she uses to determine whether a defendant would be a flight risk and, thus, incarcerated pretrial.[4]  Most judges are less transparent.  Although this particular judge happened to state her lack of formal adherence to the statutory factors, she is by no means the only judge to demonstrate this behavior.  She is the norm.  That is the nature of judicial discretion—appointed or elected individuals are given the power to fix bail,[5] regardless of whether they are honest about or aware of their reasoning.

Judges are entrusted to weigh various factors to issue a judgment and do so through the lens of their own perceptions and implicit biases.[6]  If personal intuition was not an expected part of the equation, then courts could simply input the statutory factors into an algorithm and render a mechanical judgment based on the actuarial outcome.  Some believe that this is exactly what should be done.[7]

Risk assessment instruments (RAIs) are gradually being implemented in criminal justice systems[8] across the United States to, in theory, more efficiently render parole, sentencing, and bail decisions.[9]  At the bail stage, before conviction or trial, this type of decision-making presents unique challenges and opportunities for reform.[10]  Current racial disparities in the incarcerated population, for example, can be maintained or worsened by such modeling.[11]  While some of these concerns have been tested only at sentencing,[12] the increasing prevalence of such models throughout the duration of an individual's criminal justice experience offers revealing insight into how policymakers and judges do, and should, implement actuarial risk assessment tools.[13]

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2. N.Y. CRIM. PROC. LAW § 510.30(2) (2018).

3. Indeed, this judge nearly dared the defense attorney to appeal the decision:  "Let me know what the Appellate Division does." Transcript, *supra* note 1, at 13.

4. In New York, judges must determine a person's risk of flight to set appropriate bail. *See id.*

5. *See* N.Y. CRIM. PROC. LAW § 500.10(3) (2018).

6. *See infra* Part I.A.1.  *See generally* Praatika Prasad, Note, *Implicit Racial Biases in Prosecutorial Summations:  Proposing an Integrated Response*, 86 FORDHAM L. REV. 3091 (2018).

7. *See infra* Part I.B.3.

8. This Note uses "criminal justice systems" as a plural phrase to highlight the lack of one overarching "system" in the United States.  Criminal justice is mostly a local process driven by small jurisdictions and their complex interactions. *See* JOHN F. PFAFF, LOCKED IN: THE TRUE CAUSES OF MASS INCARCERATION—AND HOW TO ACHIEVE REAL REFORM 13 (2017) ("A major barrier to reform . . . is the fractured nature of our criminal justice system.  In fact, there is no single 'criminal justice system,' but instead a vast patchwork of systems that vary in almost every conceivable way.").

9. *See infra* Part I.C (discussing these models).

10. *See infra* Part I.B.3.

11. *See infra* Part II.B.2.

12. *See infra* Part I.C.1.

13. *See infra* Parts II.C, III.A.

To date, little is known about the maintenance or exacerbation of the disparate impact such modeling can have on defendants.[14] What is known is that models are subject to human regulation and they can only analyze the world as it exists today, blemishes and all.[15] Many proprietary risk assessment tools employ hidden algorithms subject only to the owner's, or sometimes the purchaser's, oversight.[16] However, judicial discretion is always based on a black box of individual assumptions, biases, and prejudices,[17] even within a "strict" statutory framework.[18] While assumptions about the impact of risk assessment tools on economic and racial disparities are prevalent,[19] little scholarship has placed that criticism alongside the only alternative: the status quo of judicial discretion.

The increased adoption of RAIs at multiple touchpoints in criminal justice systems presents a host of novel challenges and opportunities for reform.[20] With the goal of reducing the pretrial jail population,[21] this Note offers potential steps forward for criminal justice systems. Readers will hold various opinions about how punitive, retributive, deterrent, incapacitative, or rehabilitative criminal justice systems should be.[22] In the pretrial context in particular, before any finding of guilt, reduction of the incarcerated population seems to better adhere to the well-known maxim and international norm of "innocent until proven guilty."[23] Yet any proposed reforms will only offer broad recommendations and theoretical frameworks rather than detailed prescriptions for every local situation.

This Note explores the inequities in modern bail systems and analyzes one of the most controversial options for reform: RAIs as opposed to judicial discretion. Part I provides an overview of the functions and limitations of judicial discretion and explains how current bail systems operate, drive mass

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14. The Northpointe model, for example, offers a disappointing case study on racial outcomes. *See infra* Part I.C.1.

15*. See "Not in It for Justice": How California's Pretrial Detention and Bail System Unfairly Punishes Poor People*, HUM. RTS. WATCH (Apr. 11, 2017) [hereinafter *Not in It for Justice*], https://www.hrw.org/report/2017/04/11/not-it-justice/how-californias-pretrial-detention-and-bail-system-unfairly [https://perma.cc/YBX5-4YVG] ("Despite the veneer of objectivity, the risk scores are subjectively defined and can be manipulated to direct fewer or greater numbers of people into custody or under supervision, depending on the needs of those administering the tools."); *see also infra* Parts II.D.2, III.C.

16. Jason Tashea, *Courts Are Using AI to Sentence Criminals. That Must Stop Now*, WIRED (Apr. 17, 2017, 7:00 AM), https://www.wired.com/2017/04/courts-using-ai-sentence-criminals-must-stop-now/ [https://perma.cc/CRK6-SH9A]; *see also infra* Part I.C.1.

17*. See infra* Part I.A.1. *See generally* Jeffrey J. Rachlinski et al., *Does Unconscious Racial Bias Affect Trial Judges?*, 84 NOTRE DAME L. REV. 1195 (2009).

18*. See* N.Y. CRIM. PROC. LAW § 510.30 (2018).

19*. See* Melissa Hamilton, *Risk-Needs Assessment: Constitutional and Ethical Challenges*, 52 AM. CRIM. L. REV. 231, 273 (2015) (discussing former Attorney General Eric Holder's warnings about RAI adoption).

20*. See* JOHN F. PFAFF, SENTENCING LAW AND POLICY 132 (2016). *See generally* Malenchik v. State, 928 N.E.2d 564, 569 (Ind. 2010).

21*. See infra* Parts I.B.2–3, III.A.

22*. See* PFAFF, *supra* note 20, at 37.

23. Coffin v. United States, 156 U.S. 432, 459 (1895); *see also* G.A. Res. 217 (III) A art. 11, Universal Declaration of Human Rights (Dec. 10, 1948).

incarceration, and may be reformed.  Part I also describes how actuarial risk assessment models have taken shape over the past sixty years.  Next, Part II analyzes the potential pitfalls of RAI adoption, offers a case study from New Jersey's experience with RAIs, and describes how both judicial discretion and RAIs respond to correction.  Finally, Part III offers a sober-minded acceptance of RAI adoption, with the caveat that the proper goals, factors, and monitoring mechanisms must be in place.

## I.  INCARCERATED UNTIL PROVEN GUILTY

The United States's incarceration record is abysmal.[24]  While myriad errors, inequalities, and abuses plague federal and state criminal justice systems, there is something particularly egregious about pretrial incarceration.  A deprivation of liberty based merely upon suspicion of wrongdoing is legal, but subject to special constitutional and court-prescribed protections.[25]  This Note focuses on reform of pretrial incarceration as a uniquely solvable aspect of criminal justice inequality.  Many policymakers across the political spectrum are amenable to, if not outright supportive of, bail reform.[26]  States have attempted reform with varying degrees of success.[27]  There appears to be widespread consensus that reform is necessary, but debate continues over what form it should take.[28]  One increasingly popular approach is the adoption of actuarial risk assessment tools.

To best understand the issues surrounding RAI adoption, Part I.A discusses the ever-changing power and influence of judicial discretion, affected by both individual judges' own cognitive abilities and pressure from other actors in criminal justice systems.  Next, Part I.B offers an overview of modern pretrial incarceration and explores bail systems and why reforms are needed.  Part I.C focuses on the development of one proposed pretrial reform: actuarial risk assessment instruments.

### A.  The Ebb and Flow of Judicial Discretion

Judges have a special role in society:  they are appointed or elected to interpret, uphold, and enforce the law.  The respect afforded to judges enforces a system of deference and trust in those seated on the lofty bench.  Society places special reverence and power upon these individuals who are considered to be in the best position to safeguard the rule of law.  Yet, judges are human, and thus imperfect.  They are beholden to the influences of their

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24. *See infra* Part I.B.2.

25. *See generally* United States v. Salerno, 481 U.S. 739 (1987).

26. *See* Kamala D. Harris & Rand Paul, *Kamala Harris and Rand Paul:  To Shrink Jails, Let's Reform Bail*, N.Y. TIMES (July 20, 2017), https://www.nytimes.com/2017/07/20/opinion/kamala-harris-and-rand-paul-lets-reform-bail.html [https://perma.cc/GCZ6-Y466].

27. *See infra* Part II.C; *infra* note 354 (discussing challenges in Kentucky's adoption of RAIs).

28. *See* Alan Feuer, *New Jersey Is Front Line in a National Battle over Bail*, N.Y. TIMES (Aug. 21, 2017), https://www.nytimes.com/2017/08/21/nyregion/new-jersey-bail-reform-lawsuits.html [https://perma.cc/3NX8-NMZN].

environments and must balance respect for precedent against equitable solutions for those before them. With limited information, they must decide who is deprived of their liberty before trial, who is guilty of crime, what type of punishment is necessary to carry out the policy goals of the legislature, and how to balance a packed docket of cases, each of which demand full due process. These practical limitations are only made worse by the computational limitations of the brain.[29]

Judges have varying intelligence levels and experiences, which makes broad analysis of their behavior impracticable and prone to error. Yet, these idiosyncrasies alone are not enough to create skepticism about a judge's ability to dole out equal justice. In addition to a judge's own cognitive limitations, myriad guidelines, schedules, statutes, levels of prosecutorial discretion, and other criminal justice processes influence their free decision-making. Politics also play a role because judges, particularly around election times, are more likely to be "tough on crime" to avoid a newsworthy reoffense by someone to whom they showed leniency.[30] Part I.A.1 describes the individual and cognitive factors which limit the computational abilities of judges. Then, Part I.A.2 examines how competing actors in criminal justice systems limit and influence judicial discretion.

### 1. The Bounds of Judicial Thought: Assumptions, Biases, and Cognitive Limitations

When rendering decisions, judges consciously and subconsciously combine their individual cognitive abilities with necessary assumptions, imperfect information, and prejudices and biases developed throughout their lives. Judges are further impacted by their educational and legal experiences, which create a veritable black box of judicial decision-making that can be just as unpredictable and opaque as any inscrutable RAI.[31] Judicial discretion is particularly influenced by implicit biases, which all people carry.[32]

Studies have shown that judges discriminate against defendants on racial grounds.[33] While explicit racism undoubtedly "accounts for many of the racial disparities in the criminal justice system,"[34] implicit bias is perhaps

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29. *See infra* Part I.A.1.

30. *See* PFAFF, *supra* note 20, at 112; Samuel R. Wiseman, *Fixing Bail*, 84 GEO. WASH. L. REV. 417, 431 (2016) ("Faced with strong pressure to err on the side of detaining defendants and bearing none of the costs of pretrial detention, judges are thus unlikely to act independently to accomplish legislatures' stated goals of limiting detention to very dangerous defendants or those that pose high flight risks.").

31. *See infra* Parts I.A.I, I.C.1.

32. Implicit bias is defined here as "stereotypical associations so subtle that people who hold them might not even be aware of them." *See* Rachlinski et al., *supra* note 17, at 1196.

33. *See id.* at 1225. Using the Implicit Association Test, researchers found: "First, implicit biases are widespread among judges. Second, these biases can influence their judgment. Finally, judges seem to be aware of the potential for bias in themselves and possess the cognitive skills necessary to void its influence." *Id.*

34. *See id.* at 1196 ("Researchers have found a marked decline in explicit bias over time, even as disparities in outcomes persist.").

more insidious.[35]  For example, judges in Connecticut set bail amounts "twenty-five percent higher for black defendants than for similarly situated white defendants."[36]  As this Note's opening quote suggests, the line between implicit and explicit bias can be thin, but both are evident in the bail context:

> Hidden biases against the poor and minorities can easily creep into [judicial] decision-making.  And a growing body of evidence indicates that the nation's bail system keeps many low-risk defendants incarcerated before trial, while those who may pose a higher risk are released because they have the money to make bail.[37]

While little is known about the full impact RAIs can have on racial disparities,[38] model developers have at least avoided race as an explicit input in most algorithms.[39]  However, many other factors are proven to track along racial lines and to lead to racial disparities, whether considered in judicial discretion or as model inputs.[40]

Beyond biases, human judgment is prone to outright error.  Empirical studies have identified several sources of error in judgment, including:

> (1) ignoring or using incorrect base rates, (2) assigning suboptimal or incorrect weights to information . . . , (3) failing to take into account regression toward the mean, (4) failing to properly take into account covariation, (5) relying on illusory correlations between predictor variables and the criterion . . . , (6) failing to acknowledge the natural bias among forensic examiners toward 'conservative' judgments . . . , and (7) failing to receive, and thus benefit from, feedback on judgment errors.[41]

These sources of error are dangerous alone.[42]  And they are worse in combination.  In many ways, RAIs can mitigate the impact of such errors by at least removing cognitive incapacities and the inability to see the fullest picture available.  Professors Eric Janus and Robert Prentky argue that "even

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35.  *See id.* at 1221 ("[O]ur data suggest that an invidious homunculus might reside in the heads of most judges in the United States, with the potential to produce racially biased distortions in the administration of justice.").  *See generally* Justin D. Levinson et al., *Guilty by Implicit Racial Bias: The Guilty/Not Guilty Implicit Association Test*, 8 OHIO ST. J. CRIM. L. 187 (2010).

36.  *See* Rachlinski et al., *supra* note 17, at 1196.

37.  Shaila Dewan, *Judges Replacing Conjecture with Formula for Bail*, N.Y. TIMES (June 26, 2015), https://www.nytimes.com/2015/06/27/us/turning-the-granting-of-bail-into-a-science.html [https://perma.cc/HXX9-7C2V].

38.  *See* Sari Horwitz, *Eric Holder: Basing Sentences on Data Analysis Could Prove Unfair to Minorities*, WASH. POST. (Aug. 1, 2014), https://www.washingtonpost.com/world/national-security/us-attorney-general-eric-holder-urges-against-data-analysis-in-criminal-sentencing/2014/08/01/92d0f7ba-1990-11e4-85b6-c1451e622637_story.html [https://perma.cc/5DZU-UW3T].

39.  *See* Julia Angwin et al., *Machine Bias*, PROPUBLICA (May 23, 2016), https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing [https://perma.cc/8BRV-3E35]; *infra* Part I.C.

40.  *See infra* Part II.B.2.

41.  *See* Eric S. Janus & Robert A. Prentky, *Forensic Use of Actuarial Risk Assessment with Sex Offenders: Accuracy, Admissibility and Accountability*, 40 AM. CRIM. L. REV. 1443, 1457–58 (2003).

42.  Consider that most judges, and "problem-solving courts," cannot know the best way to expertly address mental health or addiction issues. *See* PFAFF, *supra* note 20, at 690–96.

the weakest of the actuarial assessment methods appears to be systematically better than clinical judgments."[43]   While judges and human-developed algorithms can never have complete information about a defendant, algorithms are undoubtedly better at analyzing the available information consistently and accurately.[44]

### 2. Nonjudicial Discretion

Although the preceding section presented judicial discretion as a uniform block with singular limitations, in reality a judge's level of discretion varies across jurisdictions.  While that discretion may be outlined clearly via statute, it is also informally subject to the tug-of-war between actors across criminal justice systems.[45]   Police and prosecutors name the charges against a defendant, defense attorneys bargain to limit client exposure to punishment, governors and state attorneys general influence statewide attitudes toward punitiveness and criminal justice culture, parole boards and officers impact actual time served, and sentencing commissions develop guidelines and policies to limit discretion.[46]  Judicial discretion operates in the remaining space.  This push and pull is most evident, however, in the relationship between prosecutors and judges.[47]

Legislative and guideline-based changes to sentencing regimes have greatly expanded the discretion of prosecutors who "effectively determine the guideline sentence by choosing what charges to file."[48]  This same power dynamic can affect the statutory factors judges consider when setting bail, in particular the possible sentence if convicted and the strength of the evidence.[49]   While judicial discretion does change over time, judges generally have greater discretion in the bail context than in sentencing.[50] Before trial, judicial discretion is at its height.[51]  While levels of discretion vary, this Note will view judicial discretion as pure in its absolute power over bail determinations at arraignment in order to compare it to the actuarial alternative.

### B.  *Fixing Bail*

The U.S. Supreme Court has held that "[i]n our society liberty is the norm, and detention prior to trial or without trial is the carefully limited

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43.  *See* Janus & Prentky, *supra* note 41, at 1458.

44.  *See id.*

45.  *See generally* PFAFF, *supra* note 20, ch. 3.

46.  *Id.*

47.  *See generally* PFAFF, *supra* note 8, ch. 5.

48.  *See* PFAFF, *supra* note 20, at 112.

49.  These are two bail determination factors used in New York. N.Y. CRIM. PROC. LAW § 510.30 (2018).

50.  However, bail schedules reflect the power of legislatures and boards to rein in judicial discretion, relative to prosecutors who bring charges against a defendant.  Still, judges typically remain the main actor in setting bail.

51.  In New Jersey, for example, a 2014 constitutional amendment gave judges very broad discretion to order pretrial detention with limited restrictions. *See infra* Part II.C.

exception."[52]   Upon arrest, courts determine whether an individual will be released unconditionally, whether he will be released subject to conditions—such as bail, supervised release, or other programs—or whether he will be remanded to jail before trial.[53]   When a person is conditionally released, bail has historically been employed as a mechanism to prevent an undue deprivation of liberty, while ensuring a person does not flee a jurisdiction's reach or pose a real danger to the community.[54]   Contrary to what the Eighth Amendment might suggest, there is no federal "right to bail," but there is a "right to liberty."[55]   The Eighth Amendment enshrines bail as a legitimate tool for maintaining an accused individual's liberty for a price, while simultaneously protecting people from bail that is "excessive."[56]   What constitutes "excessive bail" is up for interpretation.

Many state constitutions go a step further than the U.S. Constitution by creating an affirmative right to bail.  A typical state provision reads:  "all persons shall be bailable by sufficient sureties, unless for capital offenses, where the proof is evident, or the presumption great."[57]   This provision has varying state interpretations, including giving different weights to the word "shall" or granting unfettered judicial discretion in bail determinations outside of capital offenses.[58]   Nine state constitutions simply mirror the language of the U.S. Constitution and protect only the right to freedom *from* excessive bail.[59]

The right to liberty is supposed to be constitutionally protected in the pretrial arena.[60]   While the Eighth Amendment prevents excessive bail, it does not define the word "excessive," nor does it explain when bail should or should not be fixed.[61]   The U.S. Supreme Court, however, described

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52.   United States v. Salerno, 481 U.S. 739, 755 (1987) ("We hold that the provisions for pretrial detention in the Bail Reform Act of 1984 fall within that carefully limited exception.").

53. *Moving Beyond Money:  A Primer on Bail Reform*, CRIM. JUST. POL'Y PROGRAM HARV.  L.  SCH.  5  (Oct.  2016)  [hereinafter  *Moving  Beyond  Money*], http://cjpp.law.harvard.edu/assets/FINAL-Primer-on-Bail-Reform.pdf [https://perma.cc/9KN4-JYZG].

54. *Id.*

55. *See* U.S. CONST. amend. VIII.

56. *Id.*  "Excessive" might even mean bail that someone simply cannot afford. *See* Marie Solis, *The Justice Department Says It's Unconstitutional to Jail People Who Can't Afford Bail*, BUS. INSIDER (Aug. 22, 2016, 8:22 PM), http://www.businessinsider.com/doj-unconstitutional-to-jail-people-who-cant-afford-bail-2016-8 [https://perma.cc/C7QD-KYAT] ("Fixed bail schedules that allow for the pretrial release of only those who can pay, without accounting for the ability to pay, unlawfully discriminate based on indigence.").

57. *Moving Beyond Money*, *supra* note 53, at 9.

58. *See id.*

59. *Id*.

60. *See id.* at 8.  The Fourth Amendment protects people from unreasonable seizures, guaranteeing that a defendant receives a probable cause determination by a neutral magistrate within forty-eight hours of arrest. *See* County of Riverside v. McLaughlin, 500 U.S. 44, 56–57 (1991).  This right has given rise to the concept of "individualized suspicion," the apparent lack of which is a major criticism leveled against actuarial risk assessment models. *See* Tracey Maclin, *The* Pringle *Case's New Notion of Probable Cause:  An Assault on* Di Re *and the Fourth Amendment*, 2004 CATO SUP. CT. REV. 395, 410–12.

61. *Moving Beyond Money*, *supra* note 53, at 8.

excessive bail in *Stack v. Boyle*[62] as "[b]ail set at a figure higher than an amount reasonably calculated" to assure the presence of the defendant at trial.[63] This tenuous calculus suggests that the Eighth Amendment calls for a "sliding scale, linking constitutionally permissible bond amounts (or other conditions of release) to the amount needed to incentivize particular defendants to appear at court proceedings."[64]

Following *Stack*, however, courts have rarely exercised any serious restraint when setting bail.[65] To best address the discriminatory and arguably unconstitutional status quo, it is first important to understand how bail decisions are made across criminal justice systems—a process outlined in Part I.B.1. Then, Part I.B.2 describes how current bail systems have contributed to the growing jail population in the United States. Part I.B.3 explains why reform is needed.

### 1. How Judges Make Bail Decisions

Judges across the country are directed to set bail to meet varying statutory goals. State legislatures often stipulate several factors for judges to consider when evaluating whether to set bail and in what amount. These factors can include the person's character, community ties, criminal record, past court appearances, the weight of the evidence, the likely sentence if convicted, and financial resources.[66] Judges have discretion to make bail determinations, or "fix bail," using these factors.[67] In New York, for example, judges are required to set at least two of nine total possible types of bail.[68] The most popular types are money bail and insurance company bail bonds.[69] However, these types of bail are the most onerous, especially for people without financial resources.[70] They are also the most discriminatory because those

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62. 342 U.S. 1 (1951).

63. *Id.* at 5.

64. *Moving Beyond Money*, *supra* note 53, at 8 (endnote omitted).

65. *See McLaughlin*, 500 U.S. at 53; United States v. Salerno, 481 U.S. 739, 752 (1987); Carlson v. Landon, 342 U.S. 524, 546 (1952) ("[T]he very language of the [Eighth] Amendment fails to say all arrests must be bailable.").

66. *See, e.g.*, CAL. PENAL CODE § 1270.1 (2018); N.Y. CRIM. PROC. LAW § 510.30 (2018).

67. As demonstrated by this Note's opening quote, some judges unpredictably pick and choose which factors to consider or ignore. *See supra* text accompanying note 1.

68. N.Y. CRIM. PROC. LAW § 520.10 (2018) (listing permissible bail types: (1) cash bail, (2) insurance company bail bond, (3) secured surety bond, (4) secured appearance bond, (5) partially secured surety bond, (6) partially secured appearance bond, (7) unsecured surety bond, (8) unsecured appearance bond, and (9) credit card or similar device).

69. These bonds are issued by bondsmen for a fee and sufficient collateral. Bondsmen organizations across the country lobby heavily for the continued use of insurance company bail bonds. *See* Feuer, *supra* note 28.

70. INSHA RAHMAN, VERA INST. OF JUSTICE, AGAINST THE ODDS: EXPERIMENTING WITH ALTERNATIVE FORMS OF BAIL IN NEW YORK CITY'S CRIMINAL COURTS 2 (2017), https://storage.googleapis.com/vera-web-assets/downloads/Publications/against-the-odds-bail-reform-new-york-city-criminal-courts/legacy_downloads/Against_the_Odds_Bail_report_FINAL3.pdf [https://perma.cc/5WDG-T7EV].

with means can pay their way out of pretrial detention, while others are deprived of their fundamental liberty merely due to a lack of finances.[71]

Typically, state jurisdictions embrace one of two reasons to set bail:  to prevent risk of flight or to mitigate danger to the community.[72]  The federal Bail Reform Act of 1966 prohibited courts from needlessly detaining defendants accused of federal crime before trial unless there was a legitimate risk of flight.[73]  The Act also blocked courts from considering danger to the community when setting bail, except in capital offense cases.[74]  In 1984, however, Congress replaced the 1966 Act and expanded the use of community danger as a legitimate consideration.[75]  The Supreme Court upheld this expansion in *United States v. Salerno*,[76] stating:

> Congress did not formulate the pretrial detention provisions as punishment for dangerous individuals.  Congress instead perceived pretrial detention as a potential solution to a pressing societal problem.  There is no doubt that preventing danger to the community is a legitimate regulatory goal.[77]

Determining whether an individual is dangerous to the community is subject to the whims of judicial discretion,[78] although some states have further limited bail determinations to solely considering risk of flight.[79]

Some jurisdictions—both state and local—also set mandatory or advisory bail schedules, which attribute certain bail amounts to different crimes in an effort to avoid the discrimination and lack of uniformity that comes with judicial discretion.[80]  However, these schedules are premised on the false assumption that the arrested individual actually committed the alleged activity, an assumption that gives great power to prosecutors.  They weaken judicial discretion, which can take a person's idiosyncrasies into account, for better or worse.  Yet, some judicial discretion makes sense.[81]  No person or case is identical, and it takes a discerning mind to identify and weigh varying material factors to prevent an unnecessary deprivation of liberty within statutory goals.[82]

Rigid guidelines for pretrial detention leave great power in the hands of the police and prosecutors who arrest and charge individuals prior to an adversarial hearing.[83]  Judges are trusted with sifting through the limited information gathered upon arrest, and within the accused individual's

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71.  Wiseman, *supra* note 30, at 419.

72.  *See Moving Beyond Money*, *supra* note 53, at 14.

73.  *See* Timothy R. Schnacke et al., *The History of Bail and Pretrial Release*, PRETRIAL JUST. INST. 12 (Sept. 23, 2010), https://cdpsdocs.state.co.us/ccjj/Committees/BailSub/Handouts/HistoryofBail-Pre-TrialRelease-PJI_2010.pdf [https://perma.cc/Z4MF-BBBG].

74.  *Id.*

75.  *Id.* at 17.

76.  481 U.S. 739 (1987).

77.  *Id.* at 747 (citations omitted).

78.  *See infra* Part I.A.

79.  *See, e.g.*, N.Y. CRIM. PROC. LAW § 510.30(2)(vi) (2018).

80.  *Moving Beyond Money*, *supra* note 53, at 11.

81.  *See infra* Part III.C.

82.  *See* Part I.A.

83.  *See infra* Part I.A.2.

history, to assess the risk of flight or danger to society the person poses.[84] While judicial discretion offers some benefits of "individualized assessment" through a holistic view of an arrested person's situation,[85] it remains rife with error and implicit bias and contributes to the steep rise in the incarcerated population.[86]

### 2.  Bail as a Driver of Mass Incarceration

The United States has the largest rate of imprisonment in the world:  655 incarcerated for every 100,000 people.[87]  Representing merely 5 percent of the world's population, the United States has over 20 percent of the global incarcerated population in its jails and prisons.[88]  Mass incarceration as a political topic and national challenge is perhaps more popular now than in any other time in American history.[89]  Bipartisan proposals have been put forth to curb the size of the nation's prison and jail populations.[90]

Yet, it is important to analyze prisons and jails separately.[91]  In the United States, the main difference between prisons and jails is that those in prison remain there for longer periods of time, whereas jails churn people in and out at a much faster pace.[92]  Prisons typically hold those convicted of felonies with sentences of over one year, while jails are *supposed* to imprison people convicted of crimes (typically misdemeanors) with sentences of a year or less.[93]  Unfortunately, a majority of the national jail population is made up of those who have been incarcerated before trial without any sort of conviction or final disposition of their case.[94]  Between 2000 and 2014, "95% of the growth in the overall jail inmate population (123,500) was due to the

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84. CAL. PENAL CODE § 1275(a) (2018); N.Y. CRIM. PROC. LAW § 510.30.

85. *See infra* Part II.A.

86. *See infra* Part I.B.2.

87. *World Prison Brief:  Highest to Lowest—Prison Population Rate*, INST. FOR CRIM. POL'Y RES., http://www.prisonstudies.org/highest-to-lowest/prison_population_rate? field_region_taxonomy_tid=All [https://perma.cc/F5ZQ-52KS] (last visited Aug. 24, 2018).

88. *See id.*

89. *See, e.g.*, PFAFF, *supra* note 8, at 8–13.

90. *See* Harris & Paul, *supra* note 26.

91. Specifically, this Note will focus on state systems, rather than the federal criminal justice system.  It will further focus on state and local jail populations.  Jail populations, which are ever changing, are estimated to be far greater than the national prison population in any given year. *See* PFAFF, *supra* note 8, at 2.

92. *See, e.g.*, *id.* at 2.

93. *FAQ Detail*, BUREAU JUST. STAT., https://www.bjs.gov/index.cfm?ty=qa&iid=322 [https://perma.cc/7SP2-6X3B] (last visited Aug. 24, 2018).  However, this was not always the case. *See, e.g.*, Michael Schwirtz & Michael Winerip, *Kalief Browder, Held at Rikers Island for 3 Years Without Trial, Commits Suicide*, N.Y. TIMES (June 8, 2015), https://www.nytimes.com/2015/06/09/nyregion/kalief-browder-held-at-rikers-island-for-3-years-without-trial-commits-suicide.html [https://perma.cc/W53M-SMUY].

94. *See* Peter Wagner & Bernadette Rabuy, *Mass Incarceration:  The Whole Pie 2017*, PRISON POL'Y INITIATIVE (Mar. 14, 2017), https://www.prisonpolicy.org/reports/pie2017.html [https://perma.cc/P8ZZ-B4WE].

increase in the unconvicted population (117,700 inmates)."[95]   In 2014, approximately twelve million people passed through county jails.[96]   The Prison Policy Initiative has estimated that of the expected 630,000 adults in local jails across the United States on any given day in 2017, 443,000, or 70 percent, of them were not convicted of any crime.[97]

This Note focuses on the massive incarcerated population that exists due to pretrial detention in jails, rather than the broader issue of prison population growth in the United States.  In jail complexes, such as Rikers Island in New York City, pretrial detention remains one of the largest barriers to reducing the incarcerated population.  "Three-quarters of the jail population in New York City consists of people who are being held while their cases are awaiting an outcome in court. . . .  In nearly all of these cases, the individuals are held due to their inability to make bail."[98]   To address the issue of crowded jails and bloated pretrial incarceration, particularly for poor people and people of color, some have called for the use of actuarial tools that train criminological expertise toward a fairer bail allocation system[99] by reducing human error and bias.[100]   Yet, these efforts have been met with counterarguments focused on the discriminatory potential and constitutional concerns that arise when a state replaces judicial discretion with data-based decision-making.[101]

Contact with criminal justice systems inevitably leads to cumulative disadvantage.[102]   This phenomenon occurs "when prior negative events . . . increase the likelihood of later negative events."[103]   After arrest, pretrial

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95.  TODD D. MINTON & ZHEN ZENG, BUREAU OF JUSTICE STATISTICS, JAIL INMATES AT MIDYEAR 2014, at 4 (2015), https://www.bjs.gov/content/pub/pdf/jim14.pdf [https://perma.cc/2Y42-3TUC].

96.  *See, e.g.*, PFAFF, *supra* note 8, at 2.

97.  *See* Wagner & Rabuy, *supra* note 94.

98.  INDEP. COMM'N ON N.Y. CRIMINAL JUSTICE & INCARCERATION REFORM, A MORE JUST NEW YORK CITY 25 (2017), https://static1.squarespace.com/static/577d72ee2e69cfa9dd2b7a5e/t/58e0d7c08419c29a7b1f2da8/1491130312339/Independent+Commission+Final+Report.pdf [https://perma.cc/77Q3-ZGBQ].

99.  Wiseman, *supra* note 30, at 433.

100.  *See supra* Part I.A.

101.  Angwin, *supra* note 39; *see also infra* Part II.B.  *See generally* Hamilton, *supra* note 19.

102.  This is particularly true for communities of color. *See* Cassia Spohn, *Race, Sex, and Pretrial Detention in Federal Court:  Indirect Effects and Cumulative Disadvantage*, 57 U. KAN. L. REV. 879, 881 (2009) ("If black offenders . . . are more likely than white offenders . . . to be held in custody at the time of sentencing, and if pretrial custody results in longer sentences for offenders generally, the 'detention penalty' will be greater [for black defendants]."); John Wooldredge et al., *Is the Impact of Cumulative Disadvantage on Sentencing Greater for Black Defendants?*, 14 CRIMINOLOGY & PUB. POL'Y 187, 217 (2015); *see also* Besiki L. Kutateladze et al., *Cumulative Disadvantage: Examining Racial and Ethnic Disparity in Prosecution and Sentencing*, 52 CRIMINOLOGY 514, 532 (2014).

103.  William Y. Chin, *Racial Cumulative Disadvantage: The Cumulative Effects of Racial Bias at Multiple Touchpoints in the Criminal Justice System*, 6 WAKE FOREST J.L. & POL'Y 441, 441 (2016); *see also* Jeffrey Manns, *Liberty Takings:  A Framework for Compensating Pretrial Detainees*, 26 CARDOZO L. REV. 1947, 1973 (2005) ("The personal costs of detention range from the demoralization effects of being placed in alien surroundings, cut off from friends and family, to the financial costs of loss of work, to the loss of reputation and self-

incarceration sets the stage for the rest of a person's contact with criminal justice systems, demonstrating why it is so important to get pretrial criminal justice exposure right.

Beyond the psychological and physical harms that jail imposes upon a person, an incarcerated individual can lose their job, housing, important personal connections, and many other tangible and intangible opportunities.[104]   These effects are particularly problematic before trial, when a person is merely alleged to have committed a crime, rather than convicted and sentenced to a prison term with all its attendant social stigma and collateral consequences.[105]   Pretrial imprisonment often also causes people to plead guilty simply to get out of jail.[106]   When a defendant is acquitted or his case is dismissed, there is no restitution for the losses he suffered while he was incarcerated before trial.[107]   This is why a presumption of release is so critical[108] and why reforming bail is so important to individuals.  An arraignment, where bail is determined, sets the stage for the remainder of a person's interaction with criminal justice systems and leads to the snowballing of cumulative ill effects.  On a large scale, incarceration produces so many more devastating effects than simply incapacitating individuals.[109]

### 3. Bail Reform

As hundreds of thousands of people languish in jail without a criminal conviction,[110] it is worth asking whether the adage "innocent until proven guilty" is at all accurate in the United States today.[111]  Reformers across the

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esteem."); Marian R. Williams, *The Effect of Pretrial Detention on Imprisonment Decisions*, 28 CRIM. JUST. REV. 299, 312–13 (2003) (finding that pretrial detention was the strongest predictor of subsequent incarceration and longer sentences compared with variables like race, gender, and prior felony convictions); Deema Nagib, Note, *Jail Isolation After* Kingsley*: Abolishing Solitary Confinement at the Intersection of Pretrial Incarceration and Emerging Adulthood*, 85 FORDHAM L. REV. 2915, 2946 (2017) (discussing the particular ill effects of pretrial incarceration on emerging adults).

104. Adam Neufeld, *In Defense of Risk-Assessment Tools*, MARSHALL PROJECT (Oct. 22, 2017), https://www.themarshallproject.org/2017/10/22/in-defense-of-risk-assessment-tools [https://perma.cc/3MZA-G9DV].  *See generally* Will Dobbie et al., *The Effects of Pretrial Detention on Conviction, Future Crime, and Employment: Evidence from Randomly Assigned Judges*, 108 AM. ECON. REV. 201 (2018).

105. *See* Neufeld, *supra* note 104. *See generally* Dobbie et al., *supra* note 104.

106. Neufeld, *supra* note 104.

107. Pursuant to the Eleventh Amendment of the U.S. Constitution and some state constitutions, states have sovereign immunity from such mistakes. *See* Alden v. Maine, 527 U.S. 706, 733 (1999). *See generally* Hans v. Louisiana, 134 U.S. 1 (1890).

108. *See infra* Part III.A.

109. Tony N. Brown & Evelyn Patterson, *Wounds from Incarceration That Never Heal*, NEW REPUBLIC (June 28, 2016), https://newrepublic.com/article/134712/wounds-incarceration-never-heal [https://perma.cc/SM9V-K9AQ].

110. *See supra* Part I.B.2.

111. Jaime Hawk, *No Money, No Freedom: The Need for Bail Reform*, ACLU WASH. 2 (2016), https://www.aclu-wa.org/sites/default/files/media-legacy/attachments/Bail%20 Position%20Paper%2C%20Final%20II.pdf [https://perma.cc/H668-AMX2] ("Current practices that force people to stay in jail before their trial are contrary to the fundamental

political spectrum have offered proposals to address bail systems'
contributions to the high rate of incarceration in the United States.[112]  These
efforts include altering the statutory factors judges consider when fixing
bail,[113] ending cash or money bail entirely,[114] expanding electronic
monitoring programs,[115] replacing bail with supervised release or
rehabilitative programs,[116] financing bail funds to pay small bail amounts for
those accused of low-level crimes,[117] and supplementing or replacing judicial
bail decision-making with RAIs.[118]

   The end of money bail is perhaps the most popular proposal.[119]  While
jurisdictions offer varying types of bail options, money bail is considered the
most onerous.[120]  To afford steep bail amounts, many defendants must turn
to bail bondsmen who pay the full bail amount for a nonrefundable fee.
Bondsmen usually demand collateral of at least 10 percent of the total bail
amount to secure the bond.[121]  This combined fee and collateral amount can
be burdensome for individuals who are already hard-pressed for cash.  The
real injustice here is that wealthy people can pay their way to liberty while
indigent defendants are forced to spend a relatively great sum to contract with
a bondsman or remain in jail.

   To combat this money-bail inequity, nonprofits in jurisdictions including
New York City have supported the launch of bail funds that will pay small

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American principle that one is innocent until proven guilty.  Accused people who can't afford
bail are instead treated as if they have already been tried and convicted.").

   112.  Harris & Paul, *supra* note 26.

   113.  Curtis E. A. Karnow, *Setting Bail for Public Safety*, 13 BERKELEY J. CRIM. L. 1, 2
(2008).

   114.  Innocence Staff, *Video:  Tell California Lawmakers to End Money Bail*, INNOCENCE
PROJECT (May 4, 2017), https://www.innocenceproject.org/video-tell-california-lawmakers-
end-money-bail/ [https://perma.cc/4MMU-AWKV]; *see also* Cherise Fanno Burdeen, *The
Dangerous Domino Effect of Not Making Bail*, ATLANTIC (Apr. 12, 2016),
https://www.theatlantic.com/politics/archive/2016/04/the-dangerous-domino-effect-of-not-
making-bail/477906/ [https://perma.cc/WN2S-D3A7]; Jamiles Lartey, *New Legislation
Encourages States to End Discriminatory 'Money Bail' Practice*, GUARDIAN (July 20, 2017,
14:42), https://www.theguardian.com/us-news/2017/jul/20/bail-reform-legislation-money-
bail-incarceration-us-jail [https://perma.cc/M2AC-3E2H].

   115.  *See Electronic Monitoring:  Proceed with Caution*, PRETRIAL JUST. INST.:  THE
PRETRIAL BLOG 12 (Mar. 20, 2018), https://www.pretrial.org/electronic-monitoring-proceed-
caution/ [https://perma.cc/C9QC-MLR3].

   116.  *See generally id.*

   117.  Alysia Santo, *Bail Reformers Aren't Waiting for Bail Reform*, MARSHALL PROJECT
(Aug. 23, 2016), https://www.themarshallproject.org/2016/08/23/bail-reformers-aren-t-
waiting-for-bail-reform [https://perma.cc/N8KJ-5GWC].

   118.  Cindy Redcross et al., *New York City's Pretrial Supervised Release Program*, VERA
INST. JUST. (Apr. 2017), https://storage.googleapis.com/vera-web-assets/downloads/
Publications/new-york-citys-pretrial-supervised-release-program/legacy_downloads/
Supervised-Release-Brief-2017.pdf [https://perma.cc/LV2N-MHWG].

   119.  Udi Ofer, *We Can't End Mass Incarceration Without Ending Money Bail*, ACLU
(Dec. 11, 2017, 4:30 PM), https://www.aclu.org/blog/smart-justice/we-cant-end-mass-
incarceration-without-ending-money-bail [https://perma.cc/M5HT-3W5X].

   120.  *See* RAHMAN, *supra* note 70, at 4.

   121.  *See* Insha Rahman, *Chipping Away at New York City's Unjust and Misguided Bail
System*, VERA INST. JUST. (Apr. 29, 2016), https://www.vera.org/blog/chipping-away-at-new-
york-citys-unjust-and-misguided-bail-system [https://perma.cc/YLP4-DQBM].

bail amounts for a person who meets certain criteria, like only being accused of a misdemeanor with bail set under a specified maximum.[122]  New Jersey has reformed its pretrial system by ending money bail altogether and adopting risk assessment tools with a presumption of release for many defendants, which effectively destroyed the local bail bonds industry.[123] Reformers continue to debate the efficacy of certain reform options, but RAI adoption has proven particularly controversial.

## C. The Rise of Risk Assessment Instruments

The adoption of risk assessment instruments is a contested option for bail reform.[124]  Modern risk assessment tools are the product of decades of criminal justice debates, philosophical shifts, and experimentation.[125]  When rehabilitation became the focus of criminal justice in the late nineteenth century,[126] individuals began to be given unique individualized sentences and treatments "to prepare them for safe reentry into society."[127] Simultaneously, judges were given great discretion in sentencing.[128]  Reform efforts in the 1970s and 1980s, however, caused a shift toward more retributive goals of criminal justice to theoretically provide more predictability and equal treatment to all defendants.[129]  Due to this overcorrection, which led to increased levels of incarceration, evidence-based practices (EBPs) were introduced to use empirical analyses to inform sentencing decisions and outcomes.[130]  This strategy was hailed by some as a "constructive middle ground" between rehabilitation and retributivism.[131]

EBP has fueled the modern evolution of risk assessment tools.[132]  These mechanisms assess the relationship between dynamic and static risk factors and offer a score based on a preset algorithm.[133] Dynamic factors can change over time, including current age, employment status, and current medical or rehabilitation treatment programs.[134]    Static factors, conversely, are unchangeable and cannot be targeted for treatment, such as criminal history,

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122. *See, e.g.*, BROOK. COMMUNITY BAIL FUND, https://brooklynbailfund.org/ [https://perma.cc/YJ66-EQES] (last visited Aug. 24, 2018).

123. *See infra* Part II.C.

124. *Moving Beyond Money*, *supra* note 53, at 19.

125. *Id.*

126. A rehabilitative focus dominated criminal justice discussions until the 1970s, emphasizing punishment based on an individual's characteristics rather than just the crimes that they committed. *See* Danielle Kehl et al., Algorithms in the Criminal Justice System: Assessing the Use of Risk Assessment in Sentencing (unpublished paper, Harvard Law School), https://dash.harvard.edu/bitstream/handle/1/33746041/2017-07_responsive communities_2.pdf [https://perma.cc/UW58-KYZK].

127. *Id.*

128. *Id.* (stating that this led to disproportionate sentencing of racial minorities).

129. *Id.* at 7.

130. *Id.*; *see also* Richard E. Redding, *Evidence-Based Sentencing:  The Science of Sentencing Policy and Practice*, 1 CHAP. J. CRIM. JUST. 1, 3–4 (2009).

131. Kehl et al., *supra* note 126, at 8.

132. *See id.* (discussing four "generations" of risk assessment development in sentencing).

133. *Id.* at 9.

134. *Id.*

age at first arrest, and gender.[135]  Risk assessment tools today often embrace both types of factors, with varying results.[136]  Unarguably, modern risk assessment tools are more advanced and pervasive than the basic tools used to generate parole decisions in the 1920s.[137]  Modern tools often employ machine learning in their algorithms to inform models that are based on big data sets.[138]  Models have been widely used in the parole and sentencing contexts.[139]  There is also a growing trend toward modifying actuarial models to improve pretrial detention outcomes, which tend to focus on static risk factors.[140]

Some states do not employ risk assessments at all, and other states, like New York, offer judges a risk score with a full breakdown of factors, which they are free to ignore.  Still other states, like New Jersey, are increasing the importance of risk assessment tools, making them one of the most influential factors in a judge's decision.[141]  In the latter circumstance, some judges may look at the risk scores and little else.[142]  There are generally two types of pretrial risk assessment mechanisms in use:  "clinical tools, which rely on specialists within the court system . . . to exercise judgment, and actuarial risk assessment instruments, which generate risk scores based on statistical analysis."[143]  This Note focuses on the latter and assesses whether actuarial models are in fact useful tools for courts to employ before trial.

In a meta-analysis related to the use of actuarial risk assessment tools to assess sex offender reoffending, Janus and Prentky explain that clinical prediction was superior to actuarial prediction in only 8 out of 136 studies, whereas actuarial models were comparable or superior to clinical prediction in the remaining 128 studies.[144]  The focus of these studies was on recidivism—a back-end metric[145]—but the same limitations of clinical inaccuracy should hold true for front-end processes, such as pretrial detention.  Another working paper by the National Bureau of Economic

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135.  *Id.*

136.  *See infra* Part I.C.

137.  *Id.*; *see also* Richard A. Berk & Justin Bleich, *Statistical Procedures for Forecasting Criminal Behavior:  A Comparative Assessment*, 12 CRIMINOLOGY & PUB. POL'Y 1, 2 (2013); Howard G. Borden, *Factors for Predicting Parole Success*, 19 J. CRIM. L. & CRIMINOLOGY 328, 328–36 (1928).

138.  *See* Exec. Office of the President, *Big Data:  A Report on Algorithmic Systems, Opportunity, and Civil Rights*, WHITE HOUSE 8–10 (May 2016), https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/2016_0504_data_di scrimination.pdf [https://perma.cc/4C2W-DLAF]; *see also infra* Part II.B.4.

139.  *Moving Beyond Money*, *supra* note 53, at 18.

140.  *Id.* at 22.

141.  *See infra* Part II.C.

142.  Letter from John Raphling, Senior Researcher, Human Rights Watch, to Alexis Wilson Briggs, Dir. of Research & Dev., Katal Ctr. for Health, Equity & Justice, and Alec Karakatsanis, Founder & Exec. Dir., Civil Rights Corps (July 17, 2017), https://www.hrw.org/news/2017/07/17/human-rights-watch-advises-against-using-profile-based-risk-assessment-bail-reform [https://perma.cc/FQ5B-GHNC].

143.  *Moving Beyond Money*, *supra* note 53, at 18; *see also* PFAFF, *supra* note 20, at 132.

144.  *See* Janus & Prentky, *supra* note 41, at 1456 ("Actuarial prediction was found to be superior in 33% to 47% of the studies.").

145.  *See infra* Part II.B.3.

Research examined simulations of RAIs using New York City arrest data between 2008 and 2013 and found that "crime could be reduced by nearly a quarter with no change in jailing rates, and the number of people detained in jails could be reduced by 42 percent with no increase in the crime rate."[146] But such tools can only be successful if the people creating them tune them for the right usage.[147]

RAIs have been implemented across state jurisdictions, such as Kentucky, New Jersey, and Arizona, as well as for certain federal crimes.[148] These actuarial regimes are created for government use by both non- and for-profit organizations.[149] Some reformers have embraced RAIs to "ensure greater fairness and efficacy in pretrial justice,"[150] especially compared to inelastic bail schedules or judicial whims.[151] New Jersey has specifically used the expected efficiency of RAIs as a justification for ending discriminatory money-bail systems statewide.[152]

While often idealized as a fairer and more equitable option for bail determination, these models have also been met with skepticism by actors across the criminal justice process—even those who want to abolish cash bail cannot agree on how to remedy the system.[153] Implementation can be difficult as adversaries across the political spectrum dig into tough-on-crime dogmatism[154] or fear-based aversion.[155] These efforts have also been met with legal challenges and have generated varying results.[156] Yet, adopting such models can undoubtedly be transformative—for better or worse—and

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146. Dan Rosenblum, *The Fight to Make New York City's Complex Algorithmic Math Public*, CITY & ST. N.Y. (Nov. 21, 2017), http://cityandstateny.com/articles/politics/new-york-city/making-new-york-city-algorithms-public.html [https://perma.cc/EQ4Z-ZNTT].

147. *See infra* Parts II.B.3, III.A.

148. *Pretrial Justice*, LAURA & JOHN ARNOLD FOUND., http://www.arnoldfoundation.org/initiative/criminal-justice/pretrial-justice/ [https://perma.cc/LE29-UAWQ] (last visited Aug. 24, 2018); *see also* Wiseman, *supra* note 30, at 442 n.145.

149. *See, e.g.*, *Case Management for Supervision*, EQUIVANT, http://www.equivant.com/solutions/case-management-for-supervision [https://perma.cc/KB6Q-JHNE] (last visited Aug. 24, 2018); *The Colorado Pretrial Assessment Tool (CPAT)*, COLO. ASS'N PRETRIAL SERVICES (2015), http://capscolorado.org/yahoo_site_admin/assets/docs/CPAT_Manual_V21_06-29-2015.179175025.pdf [https://perma.cc/C34L-5TUX].

150. *Moving Beyond Money*, *supra* note 53, at 20.

151. *See supra* Part I.A.

152. *Supra* Part I.A.; *see infra* Part II.C.

153. *See* Teresa Mathew, *Why New York City Created Its Own Fund to Bail People Out of Jail*, CITYLAB (Dec. 1, 2017), https://www.citylab.com/equity/2017/12/nyc-bail-fund/546155/ [https://perma.cc/YY33-GVQ4] ("Politicians tend to be in favor of using risk-assessment tools, a method that has nearly eliminated cash bail in New Jersey. Many activists, on the other hand, believe those tools are flawed and biased against poorer communities of color.") .

154. Beth Schwartzapfel & Bill Keller, *Willie Horton Revisited*, MARSHALL PROJECT (May 13, 2015), https://www.themarshallproject.org/2015/05/13/willie-horton-revisited [https://perma.cc/N86V-RCQP].

155. Letter from 5 Boro Defs. et al. to Andrew Cuomo, Governor, N.Y. State (Nov. 2017), https://www.politico.com/states/f/?id=0000015f-c1db-d7af-a9df-c3fbebb00000 [https://perma.cc/9XPX-LFME].

156. *See generally* State v. Loomis, 881 N.W.2d 749 (Wis. 2016).

present a host of practical, discriminatory, and constitutional questions.[157] These challenges, however, do not eclipse the need for reform nor the potential that RAIs offer for improved pretrial dispositions.[158]  Reform, through the use of RAIs, demands that policymakers carefully consider (1) what goals the model seeks to achieve,[159] (2) who creates the model,[160] and (3) what factors the model includes.[161]

### 1.  Proprietary and For-Profit Models

While rarely used before trial, for-profit risk assessment tools present a number of challenges for adopting jurisdictions.  The Correctional Offender Management Profiling for Alternative Sanctions (COMPAS) RAI is the leading for-profit tool, developed by Northpointe, Inc.[162]  This suite of proprietary algorithms is closed from public view and legislative review.[163] While COMPAS has different iterations for varying aspects of the criminal justice system, it is most famously used to predict recidivism.[164]  In 2016, ProPublica released a critical study of the tool's racial outcomes, which found that "black defendants were far more likely than white defendants to be incorrectly judged to be at a higher risk of recidivism, while white defendants were more likely than black defendants to be incorrectly flagged as low risk."[165]  While Northpointe's software is one of the most widely adopted RAIs in the United States, Northpointe "does not publicly disclose the calculations used to arrive at defendants' risk scores, so it is not possible for either defendants or the public to see what might be driving the disparity."[166]

Northpointe shared some of the 137 factors included in its COMPAS model with ProPublica, yet it did not share its weighting or specific calculations.[167]  Interestingly, the survey asks defendants questions like:

> 'Was one of your parents ever sent to jail or prison?' 'How many of your
> friends/acquaintances are taking drugs illegally?' and 'How often did you
> get in fights while at school?'  The questionnaire also asks people to agree

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157. *See infra* Part II.
158. *See infra* Part III.
159. *See infra* Part II.B.3.
160. *See infra* Part I.C.1–2.
161. *See infra* Parts II.B.2, III.A.
162. *See Case Management for Supervision*, *supra* note 149.
163. *See* Angwin, *supra* note 39.
164. *See id.*
165. Jeff Larson et al., *How We Analyzed the COMPAS Recidivism Algorithm*, PROPUBLICA (May     23,     2016),     https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm [https://perma.cc/98VZ-5K92]; *see also* Issie Lapowsky, *One State's Bail Reform Exposes the Promise and Pitfalls of Tech-Driven Justice*, WIRED (Sept. 5, 2017), https://www.wired.com/story/bail-reform-tech-justice/ [https://perma.cc/VF8P-KS9Q]; *All Things Considered:  The Hidden Discrimination of Criminal Risk-Assessment Scores* (NPR radio broadcast May 26, 2016) (stating that a system that calls black defendants high risk twice as often as white defendants is not a fair one).
166. *See* Angwin, *supra* note 39.
167. *See id.*

> or disagree with statements such as 'A hungry person has a right to steal'
> and 'If people make me angry or I lose my temper, I can be dangerous.'[168]

The usefulness of such questions, and the likely racially disparate outcomes they produce, are concerning. Yet in *State v. Loomis*,[169] the Wisconsin Supreme Court upheld the use of the COMPAS model in sentencing, while finding that the corollary "risk scores may not be considered as the determinative factor in deciding whether the offender can be supervised safely and effectively in the community."[170] The court added that, if they were considered as such, it "would raise due process challenges regarding whether a defendant received an individualized sentence."[171] While different constitutional protections may be afforded to individuals at sentencing and pretrial detention,[172] defendants are still severely crippled from challenging the RAI's determination where jurisdictions rely heavily on proprietary models.

This is the key benefit of fully transparent nonprofit models. Whereas proprietary models mirror judicial discretion in employing an unknown and unchallengeable black box of assumptions and biases,[173] open algorithms allow individuals to know how a model views them and why a particular score was reached.[174] In 2017, the AI Now Institute issued a report encouraging governments to "eschew 'black box' tools in favor of openness, test appropriately for any bias and encourage staff with diverse backgrounds and from various specialties to help develop and test the algorithms."[175] This Note endorses this prescription because transparent models are far preferable to closed algorithms which prevent policymakers, defendants, and judges alike from fully understanding a given risk score.[176]

However, proprietary models are not all bad. The use of RAIs in parole settings offers a useful analogy for actuarial bail determinations. Since 2012, New York has used COMPAS scoring in parole decisions.[177] Although usually ignored by the parole board, COMPAS scores could provide benefits and increased fairness to defendants.[178] Parole boards, which can be filled by inexperienced political appointees, regularly avoid letting anyone out of prison who poses even the tiniest bit of unpredictability for fear of a

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168. *See id.*

169. 881 N.W.2d 749 (Wis. 2016).

170. *See id.* at 768.

171. *Id.* at 764 ("As the defense expert testified at the post-conviction motion hearing, COMPAS is designed to assess group data. He explained that COMPAS can be analogized to insurance actuarial risk assessments, which identify risk among groups of drivers and allocate resources accordingly."); *see also infra* Part II.A.

172. *See* Kehl et al., *supra* note 126, at 23 n.160.

173. *See supra* Part I.A.I.

174. *See infra* Part I.C.2.

175. *See* Rosenblum, *supra* note 146.

176. *See infra* Parts I.C.2, III.C.

177. Michael Winerip et al., *For Blacks Facing Parole in New York State, Signs of a Broken System*, N.Y. TIMES (Dec. 4, 2016), https://www.nytimes.com/2016/12/04/nyregion/new-york-prisons-inmates-parole-race.html [https://perma.cc/CBR9-9HCZ].

178. *See id.*

publicized new offense, which can harm the political aspirations of their appointers.[179]  In this context, even a proprietary RAI could provide political cover, and some semblance of unbiased expertise, to inefficient, racist, and overly punitive board decision-making.[180]  While proprietary RAIs can offer some fairness benefits, if given the choice, legislatures should still implement transparent models, which are far superior for all parties involved in pretrial outcomes.[181]

### 2. Nonprofit Models

Perhaps the most widely adopted pretrial risk assessment tool is produced by the Laura and John Arnold Foundation ("Arnold Foundation"), a nonprofit organization with a partial focus on criminal justice reform.[182]  The Arnold Foundation developed the Public Safety Assessment (PSA) as a universal tool to analyze whether a person "will commit a new crime, commit a new violent crime, or fail to return to court."[183]  With a sample of 1.5 million cases from over 300 jurisdictions across the United States, the PSA model has been applied to both front-end and back-end situations.[184]  While this universal application raises serious concerns,[185] the model focuses on limited static factors that may be the most desirable for pretrial RAIs.[186]  The PSA specifically ignores race, gender, education level, income level, and zip code as explicit inputs.[187]  The Arnold Foundation claims that the model has been adopted in over forty jurisdictions, including New Jersey,[188] Kentucky, and Arizona.[189]

The PSA spits out a risk score between one and six, with six being the highest risk that triggers a recommendation for remand.  Yet, the model's website cautions that "[t]he decision about what to do always rests with the

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179.  *Id.* ("The board rarely released violent offenders of any race, denying nearly 90 percent of them at their initial interview."); *see also* PFAFF, *supra* note 20, at 118.

180.  *See* Winerip, *supra* note 177 ("[A]mong offenders imprisoned for more minor felonies, the racial disparity is glaring. . . .  Among male prisoners under 25 who had no prior state prison sentences, the parole board released 30 percent of whites but only 14 percent of blacks and Latinos.").

181.  *See infra* Part I.C.2.

182.  *See Pretrial Justice*, *supra* note 148.

183.  *Id.*; *see also* Kehl et al., *supra* note 126, at 13 ("[I]t has become increasingly common to augment judicial decision-making with risk assessment software like Public Safety Assessment in order to help reduce the number of individuals behind bars before trial without increasing risk to the public."); Anna Maria Barry-Jester et al., *Should Prison Sentences Be Based on Crimes That Haven't Been Committed Yet?*, FIVETHIRTYEIGHT (Aug. 4, 2015), https://fivethirtyeight.com/features/prison-reform-risk-assessment/ [https://perma.cc/MWU2-GPWZ] ("There is little question that well-designed risk assessment tools 'work,' in that they predict behavior better than unaided expert opinion.").

184.  *Pretrial Justice*, *supra* note 148; *see also infra* Part II.B.3.

185.  *See infra* Part II.B.3.

186.  *See supra* Part I.C.

187.  *See supra* Part I.C.

188.  *See infra* Part II.C.

189.  *Pretrial Justice*, *supra* note 148.

judge."[190]    New Jersey, for example, combines the PSA with other considerations and flags defendants for rearrests upon pretrial release and gun possession, among other factors.[191]  The benefit of nonprofit models is they are rarely confidential, which provides public notice of which factors matter to policymakers and affect defendants.[192]  This transparency is key for any RAI because it offers defendants and their attorneys full knowledge of the facts against them and allows the public and policymakers to compare data over time to remedy emerging concerns regarding model outcomes.[193]

## II. AMERICA'S NEXT BAIL MODEL: EVALUATING ACTUARIAL OUTCOMES

Regardless of whether bail is set using risk assessment instruments or judicial discretion, an absolute lack of false positives and false negatives is impossible.  The real goal should be determining which alternative, or combination of methods, is most beneficial to society, victims, and accused individuals.  It is critical to seek real and deliverable reform rather than merely avoiding flawed models or frameworks without an alternative to the profound injustices in modern pretrial detention.  Besides the potential to maintain, or exacerbate, the racial disparities in the incarcerated population,[194] the main theoretical criticism of risk assessment tools is that they deprive defendants of an individualized assessment of their full history and activity.[195]  Yet, this criticism is arguably a legal fiction.[196]

There is no question that criminal justice systems today result in discrimination, unfairness, and often horrible dispositions.[197]    While criticism for the sake of criticism may be useful for bringing awareness to injustice, it does little to elicit real and practical solutions to the deficient policies in place today.  A blanket rejection of a reform can wrongly focus on reaching *perfect* results rather than *better* results for those facing criminal prosecution.  Realizing that no policy will ever produce perfect results is critical, and freeing, for policymakers to be able to experiment with necessary system improvements.

Reformers must be sober-minded about what is politically, procedurally, and financially possible.  For example, in the RAI context, many fear that actuarial models will maintain current pretrial racial disparities,[198] and thus RAI implementation should not be attempted.   Yet, if racial disparity

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190. Lapowsky, *supra* note 165 (quoting Leila Walsh, spokesperson for the Arnold Foundation).

191. *See infra* Part II.C.

192. The Arnold Foundation was criticized for demanding confidentiality from jurisdictions.  The Foundation has apparently amended its policy to no longer require confidentiality. *See* Tom Simonite, *When Government Rules by Software, Citizens Are Left in the Dark*, WIRED (Aug. 17, 2017), https://www.wired.com/story/when-government-rules-by-software-citizens-are-left-in-the-dark/ [https://perma.cc/FX98-CXCP].

193. *See infra* Part II.D.2.

194. *See infra* Part II.B.2.

195. *See infra* Part II.A.

196. *See infra* Part II.A.

197. *See supra* Part I.B.2.

198. *See supra* Parts I.A.1, I.B.2.

percentages are maintained while the overall incarcerated population is reduced, this reduction is inarguably a better outcome than the status quo. This Note attempts to cut through these criticisms by asking not only whether models are better than judges at setting bail, but whether one is more amenable to correction when discrimination and errors are identified.[199]  This does not mean that better systems should be free from criticism. Policymakers should always strive for improvements, especially where technologies or evolving conceptions of equity and efficiency demand legal permutations over time.  Risk assessment tools can and do lead to disparate outcomes.   Under RAI regimes, people of color may continue to be incarcerated at a higher rate than whites.  But the great potential for improved outcomes is, at least, worth considering.

In that endeavor, Part II.A identifies an oft-cited legal fiction, "individualized assessment," which arguably should not be used to block RAI adoption.  Part II.B outlines legitimate criticisms and concerns about RAI adoption and Part II.C looks at the recent experience of RAI-based bail reform in New Jersey.  Part II.D assesses the capacities of both judges and RAI designers to realize and correct inevitable biases and errors in their approaches.

### A.  The Legal Fiction of Individualized Assessment

One perhaps overused phrase in the RAI debate is "individualized suspicion," or "individualized assessment."[200]   The opponents of risk assessment tools argue that algorithms infringe on the right to an individualized assessment because they compare people to a model's sample average, rather than to their own personal conduct or past behavior.[201]  This criticism makes sense in a vacuum.  But the same concerns should arise when considering the only current alternative:   pure judicial decision-making. Suspicion, after all, is itself a comparative concept.  As humans, judges bring their own biases and memories to the table, resulting in decisions based on a defendant's alleged behavior as compared to a judge's past psychological inputs and limitations, particularly their experience of other individuals.  This is what suspicion is built upon.  Because no human assessment of another person can ever be made without the lens of personal bias and comparison, individualized assessment is, in reality, a legal fiction.[202]   In fact, individualized assessment can only really exist if a computer determines a defendant's fate with a fully personalized set of inputs.  This type of model is not scalable or particularly useful as broad policy and may still inaccurately predict a person's future activity.

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199.  *See* PFAFF, *supra* note 20, at 141.

200.  *See* Oliver v. United States, 682 A.2d 186, 192 (D.C. 1996).

201.  *See* PFAFF, *supra* note 20, at 140.  *See generally* State v. Loomis, 881 N.W.2d 749 (Wis. 2016).

202.  Legal fictions, such as the idea of the "reasonable person," are useful in law.  But it is important to be fair about criticizing actuarial models for not offering an individualized assessment while leveling the same criticism against judicial discretion.

Former Attorney General Eric Holder, when discussing the potential for broad RAI adoption at a 2014 National Association of Criminal Defense Lawyers conference, expressed this same popular concern about the lack of individualized assessment:

> I am concerned that [risk assessments] may inadvertently undermine our efforts to ensure individualized and equal justice. By basing sentencing decisions on static factors and immutable characteristics—like the defendant's education level, socioeconomic background, or neighborhood—they may exacerbate unwarranted and unjust disparities that are already far too common in our criminal justice system and in our society.
>
> Criminal sentences must be based on the facts, the law, the actual crimes committed, the circumstances surrounding each individual case, and the defendant's history of criminal conduct. They should *not* be based on unchangeable factors that a person cannot control, or on the possibility of a future crime that has not taken place. Equal justice can only mean individualized justice, with charges, convictions, and sentences befitting the conduct of each defendant and the particular crime he or she commits.[203]

His concerns about the discriminatory impact of many of these factors is well-founded[204] but basing these concerns on the need for individualized assessment is misleading. Ideally, all those accused of crime could be assessed in light of their own potential for flight, dangerousness, or recidivism. But judges are not oracles. A person's past behavior, compared to how others have behaved in like circumstances, is exactly the type of individualized assessment judges are expected to undertake.

Interestingly, there are certain aggregate or group traits courts can appropriately consider and others they cannot. Juvenility, for example, is a universal mitigating factor,[205] while, conversely, homelessness or joblessness is used as evidence of a lack of ties to the community in bail determinations.[206] These factors are only seen as relevant, for example, when assessing flight risk because of societal assumptions about individuals who do not have a home, a phone number, or a steady job. The assumptions that follow from these factors are viewed as legitimate considerations for a judge. However, they are not truly individualized—the lack of a contact person means nothing about flight risk on an individual level.[207] But

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203. Eric H. Holder, Attorney Gen., U.S. Dep't of Justice, Remarks at the National Association of Criminal Defense Lawyers 57th Annual Meeting and 13th State Criminal Justice Network Conference (Aug. 1, 2014), https://www.justice.gov/opa/speech/attorney-general-eric-holder-speaks-national-association-criminal-defense-lawyers-57th [https://perma.cc/6D98-HM2F]; *see also* Horwitz, *supra* note 38.

204. *See infra* Part II.B.2.

205. *See* PFAFF, *supra* note 20, at 233–34.

206. N.Y.C. CRIMINAL JUSTICE AGENCY, ANNUAL REPORT 2016, at 13–14 (2018), https://www.nycja.org/lwdcms/doc-view.php?module=reports&module_id=1621& doc_name=doc [https://perma.cc/MRB8-A96A].

207. This is one factor arraignment courts consider when setting bail in New York. *See id.* at 13.

generally, courts have determined that not having a person to contact demonstrates a weak connection to the local community, and a higher likelihood of flight risk, because of stereotypes about those who may be alone or who may not want to list another individual.

Actuarial risk assessments and judges alike render decisions based on a comparison to the average of their sample. For judges, that means a comparison to all previous people before them, including family, friends, neighbors, and defendants. For actuarial models, that means the average of the selected sample population.[208] Both activities are prone to human error and inaccuracy,[209] yet while one has more legitimacy in law today, the other is likely more correctable once errors are identified.[210]

### B. Artificial Unintelligence: The Limits of Actuarial Risk Assessment

With all their potential benefits, risk assessment instruments pose major legal and practical challenges. Critics are right to fear the discriminatory potential of RAIs,[211] their implication for constitutional rights,[212] and their predilection for myopia.[213] The most basic criticism, however, is that actuarial models ignore factors that might have idiosyncratic value for certain individuals.[214] The ultimately false "broken leg" problem centers on the fact that models can only see what humans tell them to see,[215] not a surprise broken leg that would prove a defendant could not have committed an act.[216] Judges, this criticism claims, can consider such unique factors while models cannot. This ability, however, is a "double-edged sword."[217] Judges are just as likely to "rely on irrelevant factors or to include appropriate factors incorrectly."[218] Evidence suggests that this flexibility in judicial discretion ultimately does more harm than good.[219] Yet, until RAIs are more broadly tested, human observation and judicial discretion will still play a role in model implementation.[220]

Before endorsing the limited usefulness of today's RAI options, this Note reviews potential obstacles and pitfalls to RAI adoption. Part II.B.1 analyzes the constitutional and fundamental rights at stake when setting bail using algorithms. Part II.B.2 explores the most vocal criticism of RAIs: that they

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208. The sample population could, and should, change over time. *See infra* Part II.D.2.

209. *See infra* Part II.B.5.

210. While risk assessments are likely more "correctable," they can be easily tuned to either less or greater discrimination and incarceration. *See infra* Part II.D.2.

211. *See infra* Part II.B.2.

212. *See infra* Part II.B.1.

213. *See infra* Part II.B.4.

214. *See* PFAFF, *supra* note 20, at 135.

215. *See infra* Part II.B.5.

216. PFAFF, *supra* note 20, at 135.

217. *Id.*

218. *Id.*

219. *Id.* ("For every case where the human sees the broken leg and makes a better call there is more than one case in which the human takes into account something irrelevant that the model ignores and thus reaches a worse conclusion.").

220. *See infra* Part III.C.

can maintain or exacerbate racial disparities in criminal justice systems. Part II.B.3 explains that finding the right goals for pretrial RAIs is critical, yet controversial. Part II.B.4 discusses the actuarial propensity for homing in on the target population and thus becoming blind to surprise situations, while Part II.B.5 notes that the most fundamental challenge for RAI efficacy is ultimately human design.

### 1. Constitutional Rights at Stake

Pretrial deprivation of liberty creates due process and equal protection concerns.[221] To ensure due process, a judge who certifies such a deprivation at arraignment must realize that "any system providing for pretrial detention must be narrowly tailored to the compelling government interest put forward to justify detention. Where that substantive requirement is met, a deprivation of liberty must also reflect procedural safeguards designed to balance public and private interests and to minimize the risk of error."[222] But when RAIs play a large role in bail determinations, a violation of both substantive and procedural due process may be hard to challenge, especially if algorithm inputs and their weights are not publicly disclosed.[223] In the pretrial context, the Supreme Court has held that adequate procedural due process demands procedures through which judicial officers can accurately evaluate the potential for future dangerousness.[224] This same conception of due process should be reflected in decisions that incorporate flight-risk evaluations and the use of RAIs in general. Thus, an individual must have the opportunity to challenge potentially inaccurate or unfair risk assessment procedures if an RAI is a determining factor in his incarceration.[225]

In addition to due process, the Equal Protection Clause proscribes the deprivation of liberty before trial based on explicit immutable characteristics, namely gender, race, and national origin.[226] These classifications are implicated in the inputs that inform actuarial risk assessments. Equal protection demands that models never use these factors as overt inputs in their analyses because they can lead to intentional (or facial) discrimination. But the Equal Protection Clause does not forbid algorithms that unintentionally cause disparate impact on these grounds, even if that impact

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221. When models are proprietary or confidential they could implicate the Confrontation Clause of the Sixth Amendment. Defendants must be able to confront the witnesses offering evidence against them. A hidden model thus prevents a person from hearing and challenging the full set of facts against them. *See* U.S. CONST. amend. VI.

222. *Moving Beyond Money*, *supra* note 53, at 8; *see also* Washington v. Glucksberg, 521 U.S. 702, 720–21 (1997); Reno v. Flores, 507 U.S. 292, 302–03 (1993); United States v. Salerno, 481 U.S. 739, 749–51 (1987).

223. *See supra* Part I.C.1 (discussing proprietary models).

224. *Salerno*, 481 U.S. at 750–51.

225. There is currently little case law elaborating on what that pretrial challenge looks like, but case law in other areas suggests some ways jurisdictions might ensure adequate procedures. *See generally* State v. Loomis, 881 N.W.2d 749 (Wis. 2016).

226. U.S. CONST. amend. XIV; *see also* Craig v. Boren, 429 U.S. 190, 208–09 (1976); Kehl et al., *supra* note 126, at 19.

is predictable.[227]  Yet, such limited equal protection interpretations alone do not determine policy.  This Note explains that state and local policymakers can, and should, find that disparate impact, while constitutional, must still be avoided when building the best risk assessment tools possible.[228]

### 2. Discriminatory Factors

A risk assessment instrument is only as useful or discriminatory as the inputs it considers.  Humans are responsible for selecting what is included in a model, and each additional factor can lead an algorithm down a different and unpredictable road.[229]  Some factors explicitly track along racial, gender, or socioeconomic lines.[230]  Others, such as prior criminal history,[231] zip code, or housing status, have a facially neutral description, but can maintain the racial divisions in criminal justice systems.[232]   The usefulness and discriminatory impact of each of these factors are subject to debate.  And while the use of these factors may be constitutional,[233] they require careful consideration and continued skepticism to avoid disparate impact in pretrial incarceration.[234]

After all, even the best RAIs can create severe disparities along racial, gender, or other demographic lines.[235]  To avoid continued or emboldened discrimination in sentencing, Professor Sonja Starr argues against the use of RAIs altogether.[236]   Starr explains, "[T]he socioeconomic and family variables that [RAIs] do include are highly correlated with race, as is criminal history, so they are likely to have a racially disparate impact."[237]  Starr is undoubtedly correct.  However, these same concerns must apply to judicial discretion in the bail context as well.

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227. *Moving Beyond Money*, *supra* note 53, at 23.

228. For example, policymakers should seek to avoid adopting the notion of colorblindness, which limits a realistic view of the disparate impact criminal justice policies have on people of color. *See generally* MICHELLE ALEXANDER, THE NEW JIM CROW:  MASS INCARCERATION IN THE AGE OF COLORBLINDNESS ch. 3 (2012); Elise C. Boddie, *The Indignities of Color Blindness*, 64 UCLA L. REV. DISCLOSURE 64 (2016); *infra* Part III.B.

229. *See infra* Part II.B.5.

230. However predictive a category might be, policymakers should also be aware of labeling.  For example, if gender is used as a factor, men might internalize that criminal behavior is natural or expected from them, and that they deserve punishment. *See* PFAFF, *supra* note 20, at 230–32.

231. *See generally* Hamilton, *supra* note 19.

232. *See* Jennifer L. Skeem & Christopher T. Lowenkamp, *Risk, Race, & Recidivism: Predictive Bias and Disparate Impact*, 54 CRIMINOLOGY 680, 681 (2016) (explaining that "[a]lthough race is omitted from these instruments, critics assert that risk factors that are sometimes included (e.g., marital history and employment status) are 'proxies' for minority race and poverty," and thus risk assessments become discriminatory). *See generally* Sonja B. Starr, *Evidence-Based Sentencing and the Scientific Rationalization of Discrimination*, 66 STAN. L. REV. 803 (2014).

233. *See supra* Part II.B.1.

234. *See infra* Part III.B–C.

235. *Moving Beyond Money*, *supra* note 53, at 20.

236. Starr, *supra* note 232, at 806.

237. *Id.* at 838.

The statutory factors a judge considers when fixing bail are equally correlated with race.[238] Yet, the difference, perhaps, is that risk assessment factors systematize,[239] and thus institutionalize, certain factors and their repercussions as valid metrics and outcomes.[240] That danger is real and must remain ever present in the mind of RAI developers and adopters.[241] Judges are less susceptible to that replicable and systematic application of inputs, and are perhaps able to craft a more full picture of the defendant's circumstances.[242] Yet, while some model inputs can lead to maintaining the inequalities of the status quo, such considerations likely lead to the same or worse results under judicial discretion.[243]

Former Attorney General Holder speculates that RAIs could aggravate current racial disparities,[244] but, as others have predicted, risk assessment tools could just as easily alleviate those disparities.[245] These concerns about RAIs are untested in a comparative sense, and judicial discretion must be met with similar scrutiny.[246] While discrimination may become enshrined in a given instrument,[247] the array of available risk assessment tools offers a variety of ways to evaluate risk, to give different weights to inputs, and to supplement criminal justice tasks, including fixing bail. Current models are also not static or final—policymakers can continue to monitor and update models as inefficiencies and disparate impacts are identified, a benefit not available for judicial discretion en masse.[248] The true benefit of using RAIs is the relative ease with which data can be collected, outcomes evaluated, and changes implemented.[249]

### 3. Goal-Limited Results: Front-End and Back-End Modeling

Modeling is employed on both the front end and back end of the criminal justice system. Front-end modeling focuses on a person's entrance into criminal justice systems through sentencing, whereas back-end models deal with a person's ultimate release, parole, or recidivism.[250] One RAI should not be applied across the board; back-end and front-end models must weigh different factors and must be tuned toward different goals.[251] On the back

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238. *See id.*
239. *See infra* Part II.B.4.
240. *See Not in It for Money, supra* note 15.
241. *Moving Beyond Money, supra* note 53, at 20.
242. *See supra* Part II.B.
243. *See* Janus & Prentky, *supra* note 41, at 1456–58. *Contra* Sophia Arakelyan, *Artificial Intelligence May Reflect the Unfair World We Live In*, ENTREPRENEUR (Nov. 14, 2017), https://www.entrepreneur.com/article/304467 [https://perma.cc/252R-T86C] ("AI systems are being trained to reflect the general opinions, prejudices and assumptions of their creators . . . .").
244. *See supra* Part II.A.
245. Skeem & Lowenkamp, *supra* note 232, at 681.
246. *See id.* at 681–82.
247. *See Not in It for Money, supra* note 15.
248. *See infra* Part II.D.2.
249. *See id.*
250. *See* PFAFF, *supra* note 20, at 138.
251. *See id.*

end, reducing recidivism once a sentence is served is a useful goal,[252] whereas on the front end, reducing flight risk or danger to society may be more appropriate in the bail context.[253] This Note argues that a presumption of release should be the overarching goal of pretrial RAIs.[254]

While this Note focuses on the front-end use of pretrial modeling, a short survey of how courts have viewed more prevalent back-end modeling regimes is informative. In *Loomis*, the Wisconsin Supreme Court upheld the use of RAIs in sentencing and delineated several due process requirements.[255] Most notably, the court held that "risk scores may not be considered the determinative factor in deciding whether the offender can be supervised safely and effectively in the community."[256] This stipulation may be applicable on the front end as well, as the use of risk assessment tools could be similarly limited before trial. The court in *Loomis* further held that RAI determinations—particularly from proprietary algorithms—must be accompanied by certain disclaimers for judges, including "that risk assessment scores are based on group data and are able to identify groups of high-risk offenders, not a particular high risk offender . . . and that risk assessment tools must be constantly monitored and re-calibrated for accuracy as the population changes."[257] As long as risk assessments, particularly those that are proprietary and nontransparent, are not determinative, they can be used as one piece of the judicial-discretion puzzle in Wisconsin's sentencing regime.[258]

The major challenge for adopting actuarial models across criminal justice systems, however, is to not simply repurpose back-end tools for use on the front end.[259] Even on the back end, varying goals lead to different results.[260] Starr argues that judges often use the wrong kind of tool in order to achieve the results they desire.[261] She criticizes current sentencing RAIs because many focus on recidivism risk at the moment of conviction, not once the sentence has been served.[262] She posits that taking the effect of the imposed sentence itself into account can provide more accurate and useful results.[263] Actuarial models are thus only as useful as the goals they are designed to achieve and the questions they are expected to answer.[264] Professor John Pfaff points out, for example, that "[t]ime spent in prison is relatively unimportant for parole guidelines . . . but critical to sentencing tools."[265] The

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252. *See* Starr, *supra* note 232, at 861.

253. *See* PFAFF, *supra* note 20, at 138.

254. *See infra* Part III.A.

255. *See generally* State v. Loomis, 881 N.W.2d 749 (Wis. 2016).

256. *Id.* at 760.

257. *Moving Beyond Money*, *supra* note 53, at 24; *see also Loomis*, 881 N.W.2d at 769.

258. *See Loomis*, 881 N.W.2d at 760.

259. *See* PFAFF, *supra* note 20, at 138–39.

260. *Id.*

261. *See* Starr, *supra* note 232, at 807.

262. *See id.* at 861.

263. PFAFF, *supra* note 20, at 140–41.

264. *Id.* at 141; *infra* Part III.A.

265. *See* PFAFF, *supra* note 20, at 141.

solution, he explains, could simply be to "produce models that better incorporate factors that [are] more relevant to front-end decision-making."[266]

### 4. Tunnel Vision in Machine Learning: When Hyperfocus Creates Blind Spots

Bernard Harcourt, in a book dedicated to critiquing the use of predictive modeling in criminal justice systems, describes RAIs as self-defeating.[267] His harsh rebuke of actuarial tools focuses on the idea that, if a rational person is aware of the factors included in a risk assessment algorithm, she may act in a way that avoids satisfying or exacerbating only those factors to evade detection entirely.[268] Put simply, if, for example, race is used as the sole factor in a model, then people who meet that race classification will be overtargeted and those who do not can completely avoid detection.[269] The picture is more complicated when there are multiple or even dozens of factors in a model, but can still lead to the same avoidance behavior.

Absent the explicit use of race, a model may develop "tunnel vision" by focusing more and more on defendants that meet a narrow set of factors, such as income level, prior criminal history, and education level.[270] But a successful model cannot ignore those individuals who may be equally risky due to unpredictable reasons.[271] Left to their own devices, these RAIs could then maintain or worsen current racial disparities in criminal justice systems.[272]

In the bail context, where models rely more on past behavior than immutable characteristics, this issue may be less prevalent than at sentencing or parole. In the Arnold Foundation formula, for example, the included factors focus on prior criminal history, violent criminal history, and prior failures to appear.[273] These predictors are inarguably less facially discriminatory than the overt use of race or gender that Harcourt analyzes. People, after all, should undoubtedly avoid being violent and building a criminal record, and absent racist enforcement, these factors are useful for assessing risk of flight or dangerousness to the community. Unfortunately, our society is not without this troubling reality.[274]

Harcourt's criticism is valid. The factors included can lead to self-fulfilling prophesies that encourage actuarial models to develop myopia over

266. *See id.* (acknowledging the likely difficulty in designing such well-tuned models).
267. *See id.* at 136–37. *See generally* BERNARD E. HARCOURT, AGAINST PREDICTION: PROFILING, POLICING, AND PUNISHING IN AN ACTUARIAL AGE (2006).
268. PFAFF, *supra* note 20, at 137–38.
269. *Id.*
270. *Id.* at 137.
271. *Id.* at 137–41.
272. *See supra* Part II.B.2.
273. *See supra* Part I.C.2.
274. Overenforcement of communities of color is a persistent problem across the United States. This is a strong reason to avoid colorblindness in modern policymaking because, even absent explicit racism, racist outcomes permeate current criminal justice systems and must be accounted for in any RAI implementation. *See generally* ALEXANDER, *supra* note 228.

time as they evolve to identify what "type" of person tends to commit crime.[275]   When this happens, even the legally fictitious notion of individualized assessment becomes more attenuated.  Yet accounting for the likelihood of developing such tunnel vision through an algorithm's own proactive machine learning is critical for designing and maintaining useful and fairer models.[276]  Most importantly, developers must realize that as a model identifies the same types of people as high risk, then those who should be detained before trial yet do not meet a narrow set of factors, could perhaps evade the system more easily than if a judge's intuition ruled the day.[277]  This could result in more arrests and more crime at the same time.[278]

Further complicating this process, people do not fully comprehend how a machine teaches itself.[279]  This should worry policymakers.  But such an actuarial tendency can also be monitored and corrected.[280]  While this Note endorses the reserved use of RAIs, without a clear understanding of this issue, policymakers should avoid RAI adoption altogether.[281]

### 5.  Human Limitations Are Computer Limitations

As Ezekiel Edwards of the American Civil Liberties Union explains, "Algorithms and predictive tools are only as good as the data that's fed into them . . . .  Much of that data is created by man, and that data is infused with bias."[282]  Absent artificial intelligence (AI), computers can only process what humans request.  The selection of the goal and algorithm inputs is a human process.[283]  Subsequent calculations are done perfectly by a machine, but they can only produce what a limited human mind demands.

Critics may prefer clinical risk assessments to actuarial models but, as William Grove and Paul Meehl point out, "[h]umans simply cannot assign optimal weights to variables, and they are not consistent in applying their own weights."[284]  Janus and Prentky additionally argue that even weak actuarial models produce better results than clinical decisions:  "any problems present in a poorly designed actuarial method are likely to be equaled or exceeded in clinical assessments."[285]  The difference between clinical and actuarial assessments is usually "more one of computational

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275. *See* PFAFF, *supra* note 20, at 136–37.

276. *See infra* Part II.D.2.

277. Consider also that this may be a valid reason for proprietary or confidential modeling—avoiding detection will be harder for individuals who no longer know exactly which factors ultimately condemned them. *See* PFAFF, *supra* note 20, at 136–37.

278. *See id.* at 137.

279. *See* Arakelyan, *supra* note 243.

280. *See infra* Part II.D.2.

281. *See infra* Part III.C.

282. *See* Lapowsky, *supra* note 165.

283. *See* PFAFF, *supra* note 20, at 135.

284. *See* William M. Grove & Paul E. Meehl, *Comparative Efficiency of Informal (Subjective, Impressionistic) and Formal (Mechanical, Algorithmic) Prediction Procedures: The Clinical-Statistical Controversy*, 2 PSYCHOL. PUB. POL'Y & L. 293, 315 (1996).

285. *See* Janus & Prentky, *supra* note 41, at 1458.

power than of approach."[286]   Yet, much like judges, RAI developers, legislative committees, and implementing officials are subject to limited data samples, expertise, and cognition that can poison an algorithm's results, no matter how careful the designer.[287]

## C. Seeds of Reform in the Garden State

A noteworthy experiment to address the problems of overcrowded jails and pretrial inequities is taking place in New Jersey.[288]  On January 2, 2017, New Jersey implemented a plan that ended money bail statewide while simultaneously adopting actuarial models to supplement—and heavily influence—judicial decision-making.[289]  Met with skepticism by the public defense community,[290] and outrage among bondsmen,[291] New Jersey pushed forward with risk assessment tools and saw an almost 30 percent decline in the jail population as of mid-2017.[292]

In 2014, former Governor Chris Christie, a Republican and previously a federal prosecutor, backed the bail overhaul, working with the Democratic-led legislature to place a controversial state constitutional amendment on the ballot.[293]  Approved by 60 percent of voters, the amendment curbed the universal right to bail by granting judges additional discretion to use preventative detention for all defendants, not just those accused of a capital offense.[294]  The only remaining limit on judicial discretion is the ability to revoke bail for those who "if released:  will not return to court; [pose] a threat to the safety of another person or the community; or will obstruct or attempt

286.  *See* PFAFF, *supra* note 20, at 134.

287.  *See supra* Parts I.A.1, II.B.5.

288.  *See* Lisa W. Foderaro, *New Jersey Alters Its Bail System and Upends Legal Landscape*, N.Y. TIMES (Feb. 6, 2017), https://www.nytimes.com/2017/02/06/nyregion/new-jersey-bail-system.html [https://perma.cc/S5VF-87VL]; *see also* Lapowsky, *supra* note 165 (calling New Jersey's approach to reforming bail "perhaps the most audacious"); Ephrat Livni, *In the US, Some Criminal Court Judges Now Use Algorithms to Guide Decisions on Bail*, QUARTZ (Feb. 28, 2017), https://qz.com/920196/criminal-court-judges-in-new-jersey-now-use-algorithms-to-guide-decisions-on-bail/ [https://perma.cc/964S-B6K2].

289.  *See* Foderaro, *supra* note 288.

290.  Letter from 5 Boro Defs. et al. to Andrew Cuomo, *supra* note 155.

291.  Feuer, *supra* note 28 ("[T]he president of the Professional Bail Agents of the United States, an industry trade group, issued what she called 'A Declaration of War.'").

292.  *All Things Considered:  In New Jersey, Sweeping Reforms Deliver Existential Threat to Bail Bonds Industry* (NPR radio broadcast July 6, 2016).

293.  *See* Matt Arco, *Full Text of Christie's 2017 State of the State*, NJ.COM (Jan. 10, 2017), http://www.nj.com/politics/index.ssf/2017/01/read_full_text_of_christies_2017_state_of_the_stat.html [https://perma.cc/6T47-7BKR] ("We now have a criminal justice system that . . . release[s] those non-violent offenders who have only remained in jail because they are poor and end the predatory bail system that has lobbyists roaming these halls advocating to keep people behind bars unless their clients are permitted to profit from their release."); Feuer, *supra* note 28; Editorial, *Gov. Christie Takes On the Bail Bondsmen*, N.Y. TIMES (Aug. 15, 2014), https://www.nytimes.com/2014/08/16/opinion/gov-christie-takes-on-the-bail-bondsmen.html [https://perma.cc/3D5H-JZCT].

294.  Stuart Rabner, *Chief Justice:  Bail Reform Puts N.J. at the Forefront of Fairness*, NJ.COM (Jan. 9, 2017, 10:32 AM), https://www.nj.com/opinion/index.ssf/2017/01/nj_chief_justice_bail_reform_puts_nj_at_the_forefr.html [https://perma.cc/JTM5-GXZM].

to obstruct the criminal justice process."295  The amendment also granted the legislature broad power to enact laws dealing with pretrial detention and release.296  The unlikely political allies pushed the amendment to pave the way for the 2014 Bail Reform and Speedy Trial Act.297  This layered and multistep process required enormous trust that the legislature would not develop overly harsh bail reforms, but rather work toward the stated goals of decarceration, increasing fairness for defendants, and enacting policies favoring remand for individuals that pose a risk of flight or dangerousness to the community.  The new law called for local officials to implement an RAI to augment judicial discretion when setting bail.298

New Jersey partnered with the Arnold Foundation to develop its risk assessment algorithm in order to intentionally avoid racialized factors.299 The new Public Safety Assessment assigns defendants a score from one to six, six being the most "risky."300  Scores are rendered within forty-eight hours of arrest, but some judges push to complete the assessment within twenty-four hours.301  It only takes pretrial services officers about two minutes to produce a PSA score.302  The score is not dispositive; judges recognize that the score does not tell the whole story and are still free to set bail at their discretion.303  Yet, while bail is "still an option, . . . the reality is that judges have nearly done away with it."304  In the first month of adoption, 3382 cases were processed statewide and judges set bail in only three instances.305    Judges held 283 defendants without bail because—in combination with the PSA—they judged them high risk.306  By combining both risk assessment tools and judicial discretion,307 the New Jersey Supreme Court Chief Justice Stuart Rabner explains:

> Most defendants will be released pretrial on a range of conditions that will not include money bail.  For low-risk defendants, the court may simply direct an officer to send a text message or place a phone call to remind defendants when they must appear in court.  Defendants who pose greater risks may be placed on electronic monitoring.  Those considered a serious

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295.  S. Con. Res. 128, 216th Leg. (N.J. 2014).
296. *See id.*
297. *See* Foderaro, *supra* note 288.
298. *See The Judiciary FY 2015–2016 Discussion Points*, N.J. LEGIS. 3–4, http://www.njleg.state.nj.us/legislativepub/budget_2016/JUD_response.pdf [http://perma.cc/62DY-G8QP].
299. *See supra* Part I.C.2.
300. *See* Foderaro, *supra* note 288.
301. *Id.*
302.  Lapowsky, *supra* note 165.
303.  Foderaro, *supra* note 288.
304. *Id.*
305. *Id.*
306. *Id.*
307.  Judge Glenn A. Grant, Acting Admin. Dir. of the Courts, Remarks Before the New Jersey Senate Budget and Appropriations Committee 4 (May 4, 2017), http://www.judiciary.state.nj.us/pressrel/2017/SenateBudgetCommitteeRemarks_May_4_2017.pdf [https://perma.cc/A3C8-8G3E].

threat to public safety or risk of flight will be detained. Judges can also modify conditions of release based on new circumstances.[308]

The reforms have produced stunning results. According to the New Jersey Drug Policy Alliance, prior to the model's adoption, "some 75 percent of New Jersey's jail population at any given moment was simply awaiting trial, and 40 percent of jailed people were there because they couldn't afford $2,500 or less in bail. On average, people spent 10 months in jail before even getting to trial."[309] A study of results from January 1 through March 31, 2017, the first three months of the program, showed that of the 10,193 defendants processed, preventive detention was ordered for 12.4 percent (1262 people);[310] 74.3 percent (7579 people) were given pretrial release with conditional programming;[311] and 10.7 percent (1095 people) were released on their own recognizance.[312] In that time, bail was only set for eight people.[313] The fledgling system and scoring is managed by new statewide pretrial services units.[314]

While statistics regarding the maintenance or expansion of race-based disparities in pretrial detention are not yet available, one New Jersey judge is cognizant of the very real potential for discrimination. "An effective risk assessment must be gender and race neutral," New Jersey Superior Court Judge Ernest Caposela, one of the PSA's early evangelists, explained.[315]

Decarceration has been so drastic in New Jersey that around five months into the program, fearing the perception of overleniency, the Attorney General issued new guidelines for prosecutors.[316] Lobbyists for the police, prosecutors, and bondsmen were particularly dismayed by a model factor they felt was too weak or unaccounted for in the PSA: gun possession.[317] Because the PSA is "trained on data from across the country, and because some states have far more lax gun regulations . . . the PSA doesn't consider mere gun possession as an outsized risk."[318] After a well-publicized murder

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308. Rabner, *supra* note 294; *see also* S. P. Sullivan, *Here's How Much N.J. Jail Population Fell Since Bail Reform*, NJ.COM (Aug. 23, 2017), http://www.nj.com/politics/index.ssf/2017/07/njs_bail_population_dropped_20_percent_in_6_months.html [https://perma.cc/4PJX-2VZN].

309. Lapowsky, *supra* note 165.

310. This accounts for "about 55% of the pretrial detention motions filed by prosecutors." Grant, *supra* note 307, at 4.

311. This "includ[es] regular reporting requirements and, in appropriate cases, home detention or electronic monitoring." *Id.* at 5.

312. *See id.* at 4. Note that the document's listed statistics do not add up to 100 percent.

313. *Id.* at 5.

314. *Id.* at 4–5 (noting that the system also needs increased appropriated funding to be fully implemented—right now it runs on the money produced from fees).

315. Lapowsky, *supra* note 165 ("The more risk factors you have, the less likely you'll be able to eliminate gender and racial bias.").

316. *Id.*; *see also* Press Release, Office of the Attorney Gen., Attorney General Strengthens Bail Reform Directive to Better Ensure that Dangerous & Recidivist Criminals are Kept in Jail Pending Trial (May 24, 2017), https://nj.gov/oag/newsreleases17/pr20170524c.html [https://perma.cc/U6MS-BGMR].

317. Lapowsky, *supra* note 165.

318. *Id.*

by a person deemed "low risk" by New Jersey's PSA,[319] the Attorney General directed prosecutors to "push for detention more frequently in a number of cases, such as for sex offenders, for people who commit crimes in which a gun is used and for those with a history of being a threat to public safety."[320]  It is important to note that implementing an RAI is just one piece of the bail reform effort in New Jersey.[321]  New Jersey has seen promising results, but not every national implementation has been as successful.[322]  As the experiment in New Jersey continues and new data becomes available, various local stakeholders will likely continue to seek alterations to the broad reforms.

### D.  Changing Hearts and Metrics

When error or inequality is identified in pretrial detention, RAIs can be recalibrated much more easily than the built-in assumptions of all judges. But this ease of correction comes with a converse problem:  RAIs can just as easily be tuned toward greater incarceration (and discrimination) depending on who sets the current policy.  Judges are idiosyncratic but, as a bloc, they are at least relatively immune to changing political climates.  They can sometimes also be trained individually to compensate for any bias to which they may be prone.  As Part II.D.1 explains, regulating human prejudice is possible, but difficult.  Next, Part II.D.2 analyzes how adjusting algorithms can be done quickly, but can just as easily be subject to abuse and the unintended consequences of machine learning.[323]

### 1.  Regulating Human Bias

When a 2007 report was released analyzing racial bias among referees in the National Basketball Association (NBA),[324] the league denied any such misconduct.[325]  But the report was conclusive that the effect on the game was

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319.  *Id.*

320.  Katherine Landergan, *Months into New System, Attorney General Toughens N.J. Bail Reform Rules*, POLITICO (May 24, 2017), https://www.politico.com/states/new-jersey/story/2017/05/24/months-into-new-system-attorney-general-revises-bail-reform-rules-112311 [https://perma.cc/F3B6-L2T8]; *see also* S. P. Sullivan, *N.J. Supreme Court Tightens Bail Reform for Gun Crimes, Repeat Offenders*, NJ.COM (May 25, 2017), http://www.nj.com/politics/index.ssf/2017/05/nj_supreme_court_tightens_bail_reform_rules_for_gu.html [https://perma.cc/2MM4-ZCVU].

321.  The elimination of money bail in New Jersey is perhaps the most important reform that allows for successful RAI usage.

322.  According to Human Rights Watch, for example "Harris County, Ohio, which uses the Arnold Foundation risk assessment tool, has seen increased rates of pretrial detention and increased rates of early guilty pleas." Letter from John Raphling to Alexis Wilson Briggs & Alec Karakatsanis, *supra* note 142.

323.  *See supra* Part II.B.4.

324.  Alan Schwarz, *Study of N.B.A. Sees Racial Bias in Calling Fouls*, N.Y. TIMES (May 2, 2007), http://www.nytimes.com/2007/05/02/sports/basketball/02refs.html [http://perma.cc/FD89-DDC5].

325.  Ira Boudway, *NBA Refs Learned They Were Racist, and That Made Them Less Racist*, BLOOMBERG (Feb. 7, 2014, 5:55 AM), https://www.bloomberg.com/news/articles/2014-02-07/learning-they-were-racist-made-nba-referees-less-racist [https://perma.cc/E9XR-2HE6].

"large enough so that the probability of a team winning is noticeably affected by the racial composition of the refereeing crew assigned to the game."[326] Specifically, the report found that white referees called fouls against black players at a greater rate than they did white players.[327]  Following major publicity of the implicit bias in NBA refereeing since 2007,[328] scholars replicated the same study in 2014 and released the results with the title "Awareness Reduces Racial Bias."[329]  Researchers noticed a marked improvement, writing that "racial bias completely disappeared."[330]  They concluded that the media attention and self-awareness of racial bias among the referees must have led to a conscious effort to avoid discriminatory calls.[331]

The same potential for self-correction and reduced implicit bias could be possible for judges.  As Professor Jeffrey Rachlinski explains, "[J]udges seem to be aware of the potential for bias in themselves and possess the cognitive skills necessary to avoid its influence."[332]  With clear motivation and the possible threat of being charged with bias, judges can compensate to try to at least appear less biased.[333]  "Whether the judges engage their abilities to avoid bias on a continual basis in their own courtrooms, however, is unclear. . . .  Control of implicit bias requires active, conscious control."[334] Absent the impetus to regularly self-correct, however, it seems unlikely judges will significantly alter their behavior.[335]  Unfortunately, Rachlinski adds that it is likely "judges are overconfident about their ability to avoid the influence of race and hence fail to engage in corrective processes on all occasions."[336]

With training, constant effort, and regular pressure from outside observers, judges can self-correct.[337]  But as Rachlinski notes, "[C]ourtrooms can be busy places that do not afford judges the time necessary to engage the

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326. Joseph Price & Justin Wolfers, *Racial Discrimination Among NBA Referees*, 125 Q.J. ECON. 1859, 1885 (2010).

327. Schwarz, *supra* note 324 (finding that "black officials called fouls more frequently against white players, though that tendency was not as strong").

328. *Id.*

329. Devin G. Pope et al., *Awareness Reduces Racial Bias* 5 (Nat'l Bureau of Econ. Research, Working Paper No. 19,765, 2013), http://www.nber.org/papers/w19765.pdf [https://perma.cc/N7M3-AZYD].

330. *Id.*; *see also* David Berri, *What NBA Referees Can Teach Us About Overcoming Prejudice*, TIME (Dec. 16, 2014), http://time.com/3635839/implicit-bias-nba-referees/ [https://perma.cc/Z2RE-VNAH].

331. Pope et al., *supra* note 329, at 9 (explaining that "the evidence presented in this study suggests that the most likely mechanism through which the change in bias occurred is that the media reporting increased the awareness among referees about their own implicit racial bias and that this awareness led to a reduction in such bias").

332. Rachlinski et al., *supra* note 17, at 1225.

333. *See id.*

334. *Id.*

335. *See id.*

336. *Id.* at 1226.  Such bias is also evident in sex-based disparities in adjudicative outcomes. *Id.*

337. *See id.*

corrective cognitive mechanisms that they seem to possess."[338]  While public shaming or awareness can lead judges to correct their behavior, it is unlikely such correction will remain permanent.[339]  RAIs could possibly free up time to afford judges the ability to moderate their own biases or offer an alternative to exercising bias in the first place.

## 2.  Tweaking Algorithms

The "surprise me" feature on music streaming services offers an apt analogy for what may be needed to prevent actuarial models from becoming so focused as to be self-defeating and inefficient.[340]  Like the algorithms that monitor a user's music preferences, RAIs can begin to identify which combination of factors lead to the identification of high risk individuals and allocate greater weight to the factors that appear to regularly matter.[341]  To prevent the same track from playing on repeat, it is important to combat both the self-reinforcement of models themselves and the adaptive behavior of individuals by checking the actuarial model against a randomized sample.[342]  This can prevent the model from folding in on itself as it identifies the same types of people as high risk.

To avoid a similar phenomenon in the tax realm, for example, the Internal Revenue Service (IRS) has employed a special program used to correct its auditing model which "identifies those who are generally paid in cash as being more likely to evade their taxes.  As the model starts to flag such returns, auditors are likely to uncover more violations in such returns, which in turn only emphasizes the need to audit more and more such returns."[343]  But, as cash-only jobs are more closely scrutinized, other earners will evade taxes at a greater rate, knowing they are not being watched.[344]  Thus the model is no longer able to find "new evaders" outside the suspect type.[345]  Knowing this, the IRS has implemented the Taxpayer Compliance Measurement Program (TCMP), "which *randomly* selects thousands of returns for audit.  By casting a wide net over *all* returns, the TCMP can detect where malfeasance is moving . . . and it can update the [model] accordingly."[346]  Unfortunately, this means that the IRS audits many innocent *random* people.[347]  But that randomness is necessary to prevent model-reinforced biases from tainting the results.  Using such a corrective measure to improve RAIs could have the similarly negative consequence of unnecessarily depriving individuals of liberty who would typically be deemed "low risk."  Yet, while the model itself may produce results that harm

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338.  *Id.* at 1225.
339.  *See id.* at 1225–26.
340.  *See supra* Part II.B.4.
341.  *See supra* Part II.B.4.
342.  *See* PFAFF, *supra* note 20, at 137.
343.  This phenomenon is called the Discriminant Function. *Id.*
344.  *See id.*
345.  *Id.*
346.  *Id.*
347.  *See id.*

some random individuals, final judicial oversight over any RAI determination, as implemented in New Jersey, may alleviate this concern.[348]

Despite the possibility for this tunnel vision, and its attendant costs, actuarial models offer easier data collection that can be assessed for errors and impact as compared to judicial discretion. These metrics can be used to identify gaps in the model and alter the factors, weights, and goals of an algorithm to reach different results. This ease of attunement is impossible under a regime of pure judicial discretion. Of course, changing a model may require legislative action—a feat in itself—but RAIs open up at least the opportunity for large-scale and uniform change. Admittedly, an impulsive government could use this ease of attunement for ill, altering the pretrial detention population almost immediately to suit a nefarious political agenda. But regular data collection, testing, and the recording of risk scores provide such an enormous benefit to policymakers and defendants alike that this fear may be overridden. As a protective measure, legislatures could mandate that any changes to a model require testing periods or other hurdles before implementation. Despite the possibility of misuse, tweaking algorithms to achieve pretrial release goals is far easier than regulating the intuitions and biases of thousands of trial judges.[349]

### III. PRETRIAL DECARCERATION: COMBINING THE BEST OF HUMAN AND MACHINE POTENTIAL

The main challenge to RAI accuracy is its backwards-looking premise. All behavioral analyses inevitably look to past conduct to draw conclusions about the future. While the past is instructive, it cannot provide a perfectly predictive map of future behavior, particularly for individual actors. Risk assessments, however, attempt to do just that. While critics most fear overreliance on an RAI's errant and prophetic prescriptions, judicial discretion is rarely met with the same criticism.[350] Yet at arraignment, a judge also has a set of formal and informal factors before her which she uses to divine whether a defendant is likely to flee or pose some danger to the community. The difference between the two options is that judges are not regularly questioned about which factors they have found most compelling, while transparent RAIs clearly show policymakers which, and how strongly, factors are considered.

Models are subject to human inputs, which inevitably lead to error.[351] They should perhaps also be subject to human review after implementation. After all, judges have the added benefit of being able to include "broken leg" situations that provide an extra layer of leniency, or harshness, to a model's determination.[352] A healthy combination of judicial discretion and actuarial

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348. *See supra* Part II.C.
349. *See supra* Part II.D.1.
350. *See supra* Part II.A.
351. *See supra* Part II.B.5.
352. *See supra* Part II.B.

accuracy is the best, albeit imperfect, way to reduce pretrial incarceration rates today, while inhibiting pretrial injustices.[353]

First, Part III.A explains why a presumption of release is the ideal goal, and first ingredient, for a successful pretrial risk assessment algorithm. Part III.B then describes the types of factors which are most harmful and most useful for model developers and policymakers to include in pretrial RAIs. Finally, Part III.C cautions against a dogmatic reliance on RAI outcomes and to instead embrace a limited, flexible, and sober view of RAI-based bail reform.

### A. A Presumption of Release: Setting the Right Pretrial Goal

"Catch and release is for fish not felons."[354]  This sentiment has been promulgated by those who fear the pretrial release of accused individuals.[355] Yet this trite phraseology, an expression of tough-on-crime conservatism, reveals an important point about the political difficulty of passing reform that favors liberty rather than overincarceration.  Reform requires immense courage from lawmakers and the public alike to eschew modern preferences for security over liberty in favor of trust and opportunity for accused individuals.

Meaningful reform based on RAIs must be carried out intentionally and carefully.  RAIs employed at the very front end of criminal justice systems must be tuned to the unique situation of defendants preconviction and pretrial.[356]  To meet the aforementioned policy goal of reducing the astronomical and unsustainable pretrial incarcerated population,[357] a presumption of release is necessary.[358]  The U.S. legal system aspires to be one where a person is presumed *innocent* until proven guilty.  Unfortunately, U.S. legal tradition bends toward a system of *incarceration* until proven guilty.[359]  To recalibrate the unjust and untenable status quo, people should always be presumed innocent and should be shielded from incarceration except in extreme cases of actual imminent dangerousness to others.[360]

A presumption of release will undoubtedly mean that some who may need to be incarcerated, or rehabilitated, will be released to the public prior to conviction, leading to a false negative.  Some may flee a jurisdiction or

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353.  *See supra* Part II.C.

354.  This phrase is seen on bumper stickers passed out by critics of increased pretrial release in Kentucky. Alysia Santo, *Kentucky's Protracted Struggle to Get Rid of Bail*, MARSHALL PROJECT (Nov. 12, 2015), https://www.themarshallproject.org/2015/11/12/kentucky-s-protracted-struggle-to-get-rid-of-bail [https://perma.cc/8HR4-RFJV].

355.  *Id.*

356.  *See supra* Part II.B.3.

357.  *See supra* Part I.B.2.

358.  *See supra* Part II.C.

359.  *See supra* Part I.B.2.

360.  This author believes that bail is only necessary where a person poses a real threat to another individual.  The very slim risk of flight any defendant poses is not proven to be a real problem in criminal justice systems today.  Dangerousness is also overstated and overused, especially when other supervisory and restraining-order-type programming exists. *See* RAHMAN, *supra* note 70, at 9.

commit further crimes while awaiting trial.  But that is a necessary risk to take.[361]  The sustained horrors of current pretrial criminal justice systems and their lasting impacts far surpass momentary and specific incidences of failure or increased exposure to risk.[362]  Reform will require political courage in the face of public anger at every "Willie Horton moment."[363]  The public will need a higher tolerance for their fellow humans who have merely been accused of crime, trusting the system to make the best—not the perfect— determinations of a defendant's pretrial risk.[364]  Limited actuarial models, with judicial oversight, can offer the best risk assessment outcomes available today.

Custom models with separate goals for front-end and back-end processes are necessary for maximum effectiveness and fairness.[365]  On the back end, for example, reducing recidivism is a useful goal for sentencing.[366]  Before trial, however, states have voiced the goals of reducing risk of flight or preventing danger to society.  The goal of release meets many more of the modern policy aims legislators should seek.  It reduces the jail population, avoids the many documented false positives of the current system,[367] prevents the collateral horrors of even limited exposure to modern jails,[368] and maintains the United States's aspirational presumption of innocence until proof of guilt.  Pretrial incarceration should truly be the very "limited exception."[369]

The goal chosen by policymakers also informs the initial selection and weighing of factors included in a model.[370]  On the back end, for example, youthfulness might be a useful reason to impose a shorter prison term because people tend to age out of crime.[371]  On the front end, youthfulness might be an aggravating reason to incarcerate someone before trial because young people may be less likely to attend a court appearance or to understand

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361.  *See supra* Part I.B.2.

362.  *See* Wiseman, *supra* note 30, at 420 & n.7; *supra* Part I.B.2.

363.  Willie Horton, convicted of committing rape during a prison furlough, was famously used in a fearmongering campaign to discredit George H. W. Bush's Democratic rival, Michael Dukakis, as weak on crime during the 1988 presidential election. *See* Schwartzapfel & Keller, *supra* note 154; Editorial, *Los Angeles Is Facing a Willie Horton Moment*, L.A. TIMES (Oct. 30, 2017), http://www.latimes.com/opinion/editorials/la-ed-blue-ribbon-public-safety-20171030-story.html [https://perma.cc/8F7C-Q7WS].

364.  *See supra* Part II.

365.  *See supra* Part II.B.3.

366.  But, as Starr points out, recidivism generally is not enough.  Rather, the possibility for recidivism after a sentence is served is most useful in the sentencing context. *See* Starr, *supra* note 232, at 861.

367.  Justin Rohrlich, *Why Are There Up to 120,000 Innocent People in US Prisons?*, VICE NEWS (Nov. 10, 2014), https://news.vice.com/article/why-are-there-up-to-120000-innocent-people-in-us-prisons [https://perma.cc/2UBY-CJ5E].

368.  *See* Wiseman, *supra* note 30, at 419–20; Neufeld, *supra* note 104.  *See generally* Dobbie et al., *supra* note 104.

369.  United States v. Salerno, 481 U.S. 739, 755 (1987).

370.  *See* David G. Robinson, *The Challenges of Prediction:  Lessons from Criminal Justice*, 14 I/S (forthcoming 2018) (manuscript at 23–25) (describing the importance of goal setting to improving criminal justice outcomes).

371.  *See* PFAFF, *supra* note 20, at 209.

the seriousness of the charge against them.[372]  A well-defined policy goal for RAIs is the cornerstone of an effective pretrial criminal justice regime.[373]  Of course, policymakers will believe in different theories of punishment or goals for criminal justice.[374]  But they must come to a clear agreement of even an overarching goal to begin to build the best model possible.  A presumption of release should be that goal.

## B.  Humanizing Algorithms

"Models are excellent at assessing *how* relevant various factors are, but they have a much harder time detecting *what* factors matter in the first place."[375]  At least today, humans are better at identifying what matters.[376]  Better, however, does not mean perfect; humans can never understand the full impact of a chosen factor on a model, but, absent full AI, algorithms simply cannot make that initial decision.[377]  Policymakers and legislators, as elected officials in a representative democracy, should theoretically be the most capable of selecting the factors that society believes are instructive for reaching the goal of release and decarceration.[378]

In selecting RAI inputs, it is first important to keep the goal of pretrial release in mind.[379]  Next, policymakers must identify which factors inform a determination in favor of that goal, all while maintaining clarity, fairness, and a sober realization that human error and bias inform many of the factors considered.[380]  With the help of experts, local policymakers should make the determination of which factors are included in their own models, subject to regular revision.  Yet there are a few factors that should be ignored in every instance.  Race and gender must be avoided as model inputs altogether because they are facially discriminatory.[381]  Likewise, factors that track along racial lines (such as income level or zip code), which may only exist as predictive factors because of overenforcement in neighborhoods of color, should also be precluded from any model.[382]

Common bail factors such as crime severity, weight of the evidence, or strength of the case are also suspect because they presume guilt prior to trial or conviction.  A completely innocent person is equally innocent whether

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372.  These are theoretical differentiations rather than recommendations.  This author does not believe age is a relevant factor for pretrial RAIs.

373.  *See supra* Part II.B.3.

374.  *See* PFAFF, *supra* note 20, at 37.

375.  *Id.* at 135.

376.  *Id.*

377.  *See supra* Part II.B.

378.  *See supra* Part I.B.3.

379.  *See supra* Part III.A.

380.  *See* Melissa Hamilton, *Back to the Future:  The Influence of Criminal History on Risk Assessments*, 20 BERKELEY J. CRIM. L. 75, 108 (2015).

381.  *See supra* Part II.B.2.

382.  *See* Hamilton, *supra* note 380, at 90 ("In forensic terms, criminal history is most often considered a static risk factor.  But Michael Tonry more appropriately describes criminal history as a 'variable marker,' which he describes as a fixed characteristic that may be subject to change.").

they are accused of first-degree murder or turnstile jumping. Without a conviction, it is very dangerous for a model to make assumptions about a person based on what they are merely accused of. Note that this limitation is recommended for RAI factors themselves, not the entire final bail determination. Judges should still have the final say on the risk posed by an individual to take more intuitive or idiosyncratic factors into account on a limited basis.

Prior court attendance record or number of past bench warrants issued are useful factors for a model focused on preventing risk of flight. For a first-time defendant, release would thus be heavily favored. Models focused on dangerousness to society may want to look at prior recent violent crime convictions, recent domestic violence record, and history of restraining orders.[383] Considering the amount of time between any prior convictions and the current alleged offense is useful as people may be rehabilitated or age out of crime and should perhaps receive a renewed presumption of low risk without the baggage of long-ago offenses.[384] An individual's financial situation should not be an included factor for two reasons: (1) it often leads to racially disparate impact, and (2) money bail should be abolished entirely (as tried in New Jersey) as it only provides an avenue for liberty to those who can afford it.[385]

These are only the tip of the iceberg of potential inputs, but overall, policymakers should avoid including factors that: (1) are overtly race- or gender-based; (2) are implicitly race- or gender-based; (3) are otherwise discriminatory; or (4) are based on long-past criminal behavior, particularly drug abuse,[386] for which they have already been punished or rehabilitated. RAIs should be equipped with metrics targeting limited static factors specific to preventing flight or dangerousness within the overall goal of presuming release.[387] This effort will certainly result in false negatives where some people who do pose a real risk of flight or dangerousness to society will be released. However, reducing the pretrial deprivation of liberty is a worthwhile risk to take in the face of a far worse status quo.[388]

## C. Preventing Actuarial Models from Becoming Self-Aware

Deprivation of the fundamental right to liberty is so serious that legislators and policymakers must understand the potential for algorithmic results to gain an exalted presence in society. Left unchecked, machine learning can ultimately erode shared national goals of justice, fairness, and liberty. These

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383. *See supra* Part II.B.2.

384. *See* PFAFF, *supra* note 20, at 209.

385. *See supra* Part II.C. Yet, if jurisdictions do not do away with money bail, considering an individual's financial situation may encourage judges to reduce bail to amounts indigent defendants can afford.

386. *See* Dewan, *supra* note 37.

387. *See supra* Parts II.B.2, III.A.

388. *See* Neufeld, *supra* note 104 ("Public officials have a social responsibility to pursue the opportunities that algorithms present, but to do so thoughtfully and rigorously. That is a hard balance, but the stakes are too high not to try."); *see also supra* Part I.B.2.

goals can themselves be contradictory, but ultimately people must turn from blind tough-on-crime dogma toward mutual trust and a presumption of release to achieve these national aspirations. RAIs can help to reform bail in favor of these goals, but they can also lead to overreliance and deference,[389] a further institutionalization of racism,[390] and judicial laziness.

When implementing actuarial models to determine a person's pretrial liberty, policymakers should maintain a healthy understanding of science-fiction-sounding, but legitimate, concerns. To that end, models must be viewed with healthy and regular skepticism. Overreliance on metrics and institutionalized factors can lead to stale and self-defeating models.[391] People also tend to trust outcomes, even discriminatory ones, when produced by complex models and data.[392] As a baseline, this trust can be a foundation for further bias and discriminatory practices, ultimately leading to the dangerous and institutionalized labeling of certain groups.[393]

Critics rightly challenge that "while judges may rely on impermissible factors, it may be less harmful for judges to use them less accurately but less explicitly."[394] The labeling of certain groups as more risky or dangerous, especially by a seemingly trustworthy mathematical model, can lead to unintended associations and stereotypes.[395] This is a key reason this Note demands RAI transparency and avoidance of the explicit use of race and gender as inputs. Likewise, it is key to avoid factors that track along racial lines and to compensate for disparate enforcement in certain communities.[396] Criminal justice systems today, and judicial discretion in particular, often identify communities of color with factors such as lower education levels, certain zip codes, criminal history, and violence.[397] Models will likely do so as well,[398] but they also offer an opportunity to avoid these undetectable implicit biases in judges and to choose factors, and weights, that specifically seek to avoid racial disparities and the colorblindness trap.[399]

Artificial intelligence is unfortunately prone to upholding the inequalities it sees in the world.[400] Yet, AI developers can identify this tendency and address it via new programming.[401] Awareness of the problem can lead to the intentional design of RAIs that strive for the world as it should be rather

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389. *See generally* Robinson, *supra* note 370.
390. *See supra* Part II.B.2.
391. *See supra* Part II.D.2.
392. *See* Robinson, *supra* note 370, at 32 ("Whenever government grounds its exercise of power in a statistical model, the patterns that are reflected in the input data will become part of the state's vision of reality.").
393. *See* PFAFF, *supra* note 20, at 139 ("For example, while men are more likely to commit crimes than women, most men will not commit crimes. But including 'male' as a risk factor could encourage people to view all men as risky.").
394. *See id.* at 140.
395. *See id.* at 139.
396. *See supra* Part II.B.2.
397. *See id.*
398. *See* Arakelyan, *supra* note 243.
399. *See generally* Boddie, *supra* note 228.
400. *See* Arakelyan, *supra* note 243.
401. *Id.*

than the world as it is.  Of course, this progress demands legislators, policymakers, and judges who are accepting of such technological and philosophical concerns.  Rather, we often see inability, laziness, and short-term thinking among policymakers who may simply defer to the first iteration of an RAI and call it a day and ignore continuing disparities in pretrial detention.[402]  RAIs have great potential to improve modern criminal justice systems, but their misuse and abuse can lead to much worse carceral outcomes than exist today.[403]  If implemented, it is incumbent upon all criminal justice stakeholders to continually challenge and improve RAI design and implementation.

## CONCLUSION

The current popularity of bail reform efforts has led to a spirited debate over the efficacy of implementing risk assessment instruments to improve pretrial outcomes for defendants.[404]  This interest is premised on the fact that there is something particularly wrong with incarcerating individuals before a finding of guilt.  Actuarial tools can provide increased efficiency, uniformity, and fairness that the status quo of judicial discretion sorely lacks.[405]  While some reformers fear RAI usage and its potential for discrimination, they often fail to admit that judicial discretion offers at least the same, and often far worse, outcomes for defendants.  Ultimately, "[g]iven the courts' routine reliance on clinical risk assessment to support long-term liberty deprivation, it is illogical to exclude demonstrably more reliable . . . tools."[406]  RAIs also allow for improved data collection to more easily identify inequities and errors in pretrial detention.

In all, RAIs provide pretrial regimes with renewed reliability outside the black box of judicial discretion.  However, RAIs should never be adopted absent specific safeguards.[407]  Without full transparency, regular validation, and the pretrial goal of a presumption of release, RAIs will likely do much more harm than good by exacerbating the racial inequalities in the current unacceptable status quo and even increasing the already massive jail population.[408]  A careful implementation of RAIs can help reduce current incarceration levels and improve criminal justice outcomes.  As the title of this Note suggests, however, algorithmic determinations—as they operate today—should never have the final say in an individual's pretrial detention.

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402. *See supra* Part I.B.2.

403. This is why the court in *Loomis* required careful instructions for their use. *See supra* Part II.B.3.

404. *See supra* Part I.B.3.

405. *See supra* Part I.B.2.

406. *See* Janus & Prentky, *supra* note 41, at 1459.

407. *See supra* Part III.B.

408. Bärí A. Williams, Opinion, *'Intelligent' Policing and My Innocent Children*, N.Y. TIMES (Dec. 2, 2017), https://www.nytimes.com/2017/12/02/opinion/sunday/intelligent-policing-and-my-innocent-children.html [https://perma.cc/9KUZ-S9F7] ("[B]iases will be built into the foundation of many 'intelligent' systems shaping how we live. . . .  There are ways to make A.I. work.  But . . . it must be thoroughly tested and proven not to disproportionately harm communities of color.").

Like the notorious HAL from the film *2001: A Space Odyssey*, RAIs can be an important advancement in criminal justice reform, yet humans must maintain a healthy awareness of their potential to become overtrusted or more powerful than anticipated.[409]   Actuarial risk assessment tools can only provide a map toward decarceration.  For now, well-trained and informed judges must still navigate individual defendants through the critical pretrial moment, which sets the stage for all future interactions with criminal justice systems.

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409.  Petitioning the self-aware robot HAL to let him back into the spacecraft, the movie's main character, Dave, demands, "Open the pod bay doors, HAL," to no avail. *See* 2001: A SPACE ODYSSEY (Stanley Kubrick Productions 1968).