Technology's Influence on Federal Sentencing: Past, Present, and Future

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By Matthew G. Rowland[*]

Abstract

The comprehensive reforms that govern today's federal sentencing processes were fashioned nearly forty years ago. Those reforms were designed to address concerns regarding the effectiveness, transparency, and fairness of the preexisting indeterminant sentencing system. Today, criticisms are mounting against the very reforms that were once held out to save the sentencing process. The more determinant system is being accused of being biased against minorities, overly harsh, and costly.

This Article explores how the criminal justice system might look to technology and build on the practical experience from the indeterminant and determinant systems. Tools such as Artificial Intelligence (AI) can help improve many aspects of the sentencing process and allow for continued learning. While some anxiously fear AI will serve as a robotic judge, it is better characterized as a tool that can enhance human decision-making. In the sentencing context, the technology can make sentencing more informed, with greater safeguards against abuse, faster and more impactful relative to the goals for sentencing established by Congress and expected by the public.

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A Monty Python skit on the history of manned flight begins with a medieval king shouting "fly" and kicking a man off a cliff. "Not as successful as hoped for," remarks the king. The skit goes on to cite advancements in the accoutrements of flight and depicts a man going through an airport check-in, handing his boarding pass to a flight attendant, and boarding what appears to be a modern aircraft. He sits down just to hear the king behind him shout "fly," and the man is kicked off a cliff. "Nope. Still not got it," says the king.[1]

I. Introduction

Sentencing is more of an art than a science. What constitutes an appropriate sentence is a matter of opinion, and the impact of sentencing decisions is far from understood. Criticisms of sentencing abound, as do criticisms of the criticisms. The good news is that crime rates are low,[2] and presumably the federal criminal justice system had a role in making that happen. Also, we have made progress regarding transparency and better structuring of judgment.[3] In addition, we have created a stronger foundation for research. Much of that progress has been driven by technological innovation. It is technology that is now poised to take federal sentencing to the next level.

The comprehensive reforms that govern today's federal sentencing processes were fashioned nearly forty years ago.[4] The reforms were designed to address concerns regarding the effectiveness, transparency, and fairness of the preexisting

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1. Terry Gilliam, *The Miracle of Flight*, YouTube (Dec. 19, 2015), https://www.youtube.com/watch?v=I4eVkanDkgg (last visited Mar. 19, 2020) [https://perma.cc/5BC6-CMSF].

2. *See* Fed. Bureau Investigation, 2019 January–June Preliminary Semiannual Uniform Crime Report tbl.3 (2019), https://ucr.fbi.gov/crime-in-the-u.s/2019/preliminary-report/tables/table-3/table-3.xls (last visited Feb. 17, 2020) (showing that the crime statistics for the nation are down year over year) [https://perma.cc/435N-VDGX].

3. *See id.* (disclosing crime statistics).

4. *See* Sentencing Reform Act of 1984, Pub. L. No. 98-473, 98 Stat. 1987 (setting forth Sentencing Reform and dictating federal sentencing).

indeterminant sentencing system.[5] The political impetus for the reforms drew from voter concerns about crime.[6] In the two decades leading up to the reforms, the violent crime rate in the United States increased 271 percent, with homicides rising from 9,110 to 23,040.[7]

Yet another important but underappreciated factor shaping the reforms was technology. Many of the reforms put into place in the 1980s simply would not have been possible when the indeterminant system was created decades before. The indeterminant system was a product of its time, and arguably the best option considering the tools that were available. While

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5.   *See* Harold R. Tyler, Jr., *Sentencing Guidelines: Control of Discretion in Federal Sentencing*, 7 HOFSTRA L. REV. 11, 12 (1978) (discussing concerns of the federal sentencing system).

> Indeterminate sentencing strikes most knowledgeable observers as irrational. Generally, legislatures fix no specific penalty for a crime; rather, a maximum, and sometimes a minimum, limit is set. In addition to the wide latitude of possible punishment, no coherent goals are provided to structure and guide the discretion of sentencing judges and parole boards. Because of the absence of goals and purposes for sentences of imprisonment, indeterminate schemes tend to foster unfair and inconsistent sentencing decisions between, and even within, courts.

Id.

6.   *See* Steven V. Roberts, *Crime an Increasingly Compelling Political Issue*, N.Y. TIMES, June 24, 1982, at B12 ("'I don't care whose poll you look at,' said Representative William J. Hughes, a New Jersey Democrat. 'Some of them show that crime is more important than national defense.'"); *see also* Richard Neely, *The Politics of Crime*, ATLANTIC ONLINE (Aug. 1982), https://www.theatlantic.com/past/docs/politics/crime/neelycri.htm (last visited Apr. 1, 2020) ("Through at least the past decade, no public problem has worried Americans more persistently than crime. When people are asked in opinion surveys to list the problems that concern them most, the threat of crime typically comes at or near the top of the list.") [https://perma.cc/Z7BR-4NR8]; *see also* Francesco Bruno, *Combatting Drug Abuse and Related Crime*, UNITED NATIONS DEF. RES. INST., July 1984, at 31 ("[T]he constant rise in criminality, in the broadest sense of the term, is one of the most important preoccupations of the present day.").

7.   *Uniform Crime Reporting (UCR) Program*, FED. BUREAU INVESTIGATION, https://www.fbi.gov/services/cjis/ucr (last visited Feb. 17, 2020) (explaining how to view crime statistics) [https://perma.cc/JPT4-23CY].

the indeterminant system was ultimately vilified[8] and scrapped, it continues to offer valuable lessons for the ongoing evolution of sentencing.

Ironically, criticisms are now mounting against the very reforms that were once held out to save the sentencing process. The more determinant system is being accused of being biased against minorities,[9] overly harsh,[10] and costly.[11] Discussion of those concerns may be eclipsing the substantive advancements made by the determinant approach.

What to do? As there is very little new under the sun in terms of sentencing philosophy, the answer is to look to technology and build on the practical experience from the indeterminant and determinant systems.

Tools such as Artificial Intelligence (AI) can help improve many aspects of the sentencing process and allow for continued learning. While some anxiously fear AI will serve as a robotic

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8. *See* Ilene H. Nagel, *Structuring Sentencing Discretion: The New Federal Sentencing Guidelines*, 80 J. Crim. L. & Criminology 883, 884 (referring to the indeterminant sentencing system as an "embarrassment" and "sham"); *see also* Tyler, Jr., *supra* note 5, at 12 (describing indeterminant sentencing as "irrational").

9. *See* Sonja B. Starr & M.M. Rehavi, *Racial Disparity in Federal Criminal Sentences*, 122 J. Pol. Econ. 1320, 1354 (2014) (explaining how system reforms have affected minorities); *see also* Richard D. Hartley, *Inter-District Differences and Extra-Legal Disparity in Federal Sentencing*, 20 Criminology, Crim. Just., L. & Soc'y 46, 48 (2019) (attributing some of the sentencing disparity to extra-judicial factors, including application of statutory minimums as well as prosecutorial charging decisions).

10. *See* Marc Mauer, *Long-Term Sentences: Time to Reconsider the Scale of Punishment*, The Sent'g Project (Nov. 5, 2018), https://www.sentencingproject.org/publications/long-term-sentences-time-reconsider-scale-punishment (last visited Feb. 17, 2020) (showing that the revised prison terms for drug offenses are still harsh) [https://perma.cc/2HHN-E5JM].

11. *See generally* Nancy LaVigne & Julie Samuels, The Growth & Increasing Cost of the Federal Prison System: Drivers and Potential Solutions (2012), https://www.urban.org/sites/default/files/publication/26191/412693-The-Growth-amp-Increasing-Cost-of-the-Federal-Prison-System-Drivers-and-Potential-Solutions.PDF (analyzing the amount spent by the federal government on the Bureau of Prisons budget and determining the cost associated with different types of incarceration) [https://perma.cc/2NYA-U2ZN].

judge, it is better characterized as a tool that can enhance human decision-making. Ironically, most members of the public already use AI themselves in a productive fashion; they just may not know it.[12] In the sentencing context, the technology can make sentencing more informed, with greater safeguards against abuse, faster and more impactful relative to the goals for sentencing established by Congress and expected by the public.

II. Background

Sentencing can easily be mistaken for a purely judicial function. It is more accurately considered a crossroad where operation of all three branches of government meet.[13] Sentencing is not a standalone activity and if significant change in sentencing outcomes is desired, involvement of all three branches is necessary.

A. The Legislative Branch

Congress has the most crucial role. Congress defines what constitutes a crime, prescribes penalties, dictates procedures, and allocates funds to perform and execute sentencing.[14] To the

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12.   *See* Jackie Snow, *Most Americans are Already Using AI*, MIT TECH. REV. (Mar. 7, 2018), https://www.technologyreview.com/f/610438/most-americans-are-already-using-ai/ (last visited Feb. 17, 2020) (reporting that a survey by Gallup shows that most Americans use AI and suggesting that this means that Americans are comfortable with using AI) [https://perma.cc/7B5Y-NC3B]; *see also* Brad Gaines, *A.I. Is Here, And It's Been Labeled The 4th Industrial Revolution*, RESET STRATEGIES (Apr. 13, 2018), https://resetstrategies.com/ai-4th-industrial-revolution/ (last visited Feb. 17, 2020) (stating that examples of AI-based products that are frequently used by consumers include Uber and Lyft, Amazon, Expedia and Airbnb, Turbotax, Spotify, and Netflix) [https://perma.cc/PGY8-4SE4].

13.   *See* Paul Rosenzweig, *Sentencing Authority and the Separation of Powers: "Who Decides Sentences at the Front End?,"* HERITAGE FOUND. (Nov. 12, 2003), https://www.heritage.org/testimony/sentencing-authority-and-the-separation-powers-who-decides-sentences-the-front-end (last visited Feb. 17, 2020) (discussing the separation of powers and how each branch plays a role in sentencing) [https://perma.cc/3J6V-QYKH].

14.   *See generally* Orrin G. Hatch, *The Role of Congress in Sentencing: The United States Sentencing Commission, Mandatory Minimum Sentences,*

degree discretion is required, Congress exercises it or directs who will, and in what manner it should be applied.[15]

B. The Executive Branch

The executive branch, primarily through the Department of Justice, investigates violations of law, brings charges in federal court, and advocates for what it considers an appropriate sentence.[16] Maximum, and sometimes minimum, penalties are

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and the Search for a Certain and Effective Sentencing System, 28 WAKE FOREST L. REV. 185 (1993) (discussing the federal sentencing system and determining the effectiveness of the guidelines the U.S. Sentencing Commission sets forth); *see also* Publius Huldah, *What Criminal Laws Are Congress Authorized to Make?,* TENTH AMEND. CTR. (June 20, 2015), https:// tenthamendmentcenter.com/2015/06/20/what-criminal-laws-are-congress-authorized-to-make/ (last visited Mar. 3, 2020) (discussing the five categories of powers under which Congress can make criminal laws) [https://perma.cc /S9NP-UJKW]; *see also Crime and Punishment*, CORNELL LEGAL INFO. INST. (Dec. 29, 2019), https://www.law.cornell.edu/constitution-conan/article-1 /section-1/crime-and-punishment (last visited Feb. 17, 2020) ("Congress must provide by statute that violation of the statute's terms—or of valid regulations issued pursuant thereto—shall constitute a crime, and the statute must also specify a permissible range of penalties.") [https://perma.cc/T9US-9WX3]; Mike Crowley & Ed Chung, *Congress Can Lead Criminal Justice Reform Through Funding Choices*, CTR. FOR AM. PROGRESS (Sept. 7, 2017, 9:56 AM), https://www.americanprogress.org/issues/criminal-justice/reports/2017/09/07 /438570/congress-can-lead-criminal-justice-reform-funding-choices/ (last visited Feb. 17, 2020) (stating that appropriation laws passed by Congress "not only controls the funding levels for federal criminal justice entities but also sets the amounts available to the U.S. Department of Justice (DOJ) for grants to state and local government counterparts as well as researchers and service providers.") [https://perma.cc/KN3S-75XV].

15. *See* Rosenzweig, *supra* note 13 ("[M]ost of the discretion about the most fundamental choice—whether to jail or not—is exercised at the definitional level by Congress); *see also* Hatch, *supra* note 14 (examining the effectiveness of the federal sentencing system and the guidelines it sets forth).

16. *See* 28 U.S.C. § 31-40A (2018) (providing a source of authority of the Department of Justice); *see also Mission Statement*, DEP'T OF JUST., https:// govinfo.library.unt.edu/npr/library/status/mission/mdoj.htm (last visited Feb. 17, 2020) ("The Department of Justice, established in 1870, represents the citizens of the United States in enforcing the law in the public interest and plays a key role in providing protection against criminal activity.") [https:// perma.cc/WSG9-ERJZ].

established by Congress and embedded in individual statutes.[17] Consequently, which offense prosecutors choose to pursue is a critical decision influencing sentencing.[18] Critics have questioned prosecutors' level of discretion in this regard and the impact it has on plea agreements and, in turn, sentences defendants receive.[19]

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17.   *See Step 10: Sentencing*, U.S. DEP'T OF JUST., https://www.justice.gov /usao/justice-101/sentencing (last visited Jan. 29, 2020) (outlining how "Congress has established minimum and maximum punishments for many crimes which the judge uses to craft a sentence") [https://perma.cc/7KRJ-GANA].

18.   As illustrated, if a hypothetical defendant is arrested for selling one hundred grams of heroin, prosecutors could charge the defendant either under 21 U.S.C. § 841(b)(1)(C), which carries a maximum prison term of 20 years and no mandatory minimum, or under 21 U.S.C. § 841(b)(1)(B) which has a maximum prison term of 40 years and a mandatory minimum 5 years. Defendants who plead guilty are less likely to face the mandatory minimum while those who go to trial are more likely to face a mandatory minimum prison term. *See* Michael. Tonry, *Mandatory Penalties*, 16 CRIME & JUST. 243, 255–56 (1992) (presenting data from a random sample from the U.S. Sentencing Commission, revealing that there were "clear indications that prosecutors often do not file charges that carry mandatory minimums when the evidence would have supported such charges" and prosecutors "used mandatory provisions tactically to induce guilty pleas").

19.   *See* Brian D. Johnson, *Plea-Trial Differences in Federal Punishment: Research and Policy Implications*, 31 FED. SENT'G REP. 256, 259 (2019) (evaluating trial-penalty estimates); *see also An Offer You Can't Refuse: How US Federal Prosecutors Force Drug Defendants to Plead Guilty*, HUMAN RTS. WATCH (Dec. 5, 2013), https://www.hrw.org/report/2013/12/05/offer-you-cant-refuse/how-us-federal-prosecutors-force-drug-defendants-plead (last visited Jan. 29, 2020) [hereinafter *An Offer You Can't Refuse*] (reviewing the "empirical evidence on the presence of a federal-trial penalty") [https:// perma.cc/YZC3-9F2W]; *see also* ANGELA J. DAVIS, ARBITRARY JUSTICE: THE POWER OF THE AMERICAN PROSECUTOR 5 (Oxford Univ. Press 2007) (describing how prosecutors are the most powerful officials in the criminal justice system); *see also* Stephen E. Vance et al., *Weighing the Value of the Bargain: Prosecutorial Discretion After Sentencing Guidelines*, 30 CRIM. JUST. POL'Y REV. 1086, 1086–108 (2019) (seeking to quantify the amount of discretionary authority transferred from judges to prosecutors under the guidelines); *see also* Mario V. Cano, Prosecutorial Discretion across Federal Sentencing Reforms: Immediate and Enduring Effects of Unwarranted Disparity (Dec. 2015) (unpublished Ph.D. dissertation, Arizona State University) (on file with Arizona State University) (discussing the implications of *United States v. Booker* and how no alteration in "disparities associated imprisonment outcomes" is apparent).

The Federal Bureau of Prisons (BOP), a component of the Department of Justice, enforces terms of imprisonment that are imposed.[20] Discretionary decisions by the BOP are significant and include inmates' placement and conditions of confinement, including in some instances, early release.[21]

C. The Judicial Branch

The judiciary applies the Constitution, statutes, applicable caselaw, and the Federal Rules of Criminal Procedure to criminal charges brought. Judges, the main actors within the judiciary, also assign legal counsel to defendants who cannot afford their own attorney.[22] Judges preside over courtroom proceedings, decide which defendants should be released pending trial and on what conditions, and impose sentences upon those convicted of federal crimes. If probation or another form of post-conviction community supervision is imposed, judges have the authority to modify, revoke, or terminate those terms for cause.[23]

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20.   *See* 18 U.S.C. §§ 4041–4050 (2018) (laying out chapter 303 of the U.S. Code regarding the duties and policies of individuals in the Bureau of Prisons); *see also* FED. BUREAU OF PRISONS, ABOUT THE FEDERAL BUREAU OF PRISONS 1 (2015), https://www.bop.gov/resources/pdfs/ipaabout.pdf (stating that the BOP's mission is "to provide more progressive and humane care for federal inmates, to professionalize the prison service, and to ensure consistent and centralized administration of . . . Federal prisons") [https://perma.cc/574H-M8KG].

21.   *See generally* U.S. GOV'T ACCOUNTABILITY OFF., GAO-12-320, BUREAU OF PRISONS: ELIGIBILITY AND CAPACITY IMPACT USE OF FLEXIBILITIES TO REDUCE INMATES' TIME IN PRISON (2012) (discussing the results of the BOP's discretionary practices).

22.   *See* 28 U.S.C. §§ 601–998 (outlining Part III of Title 28 of the U.S. Code regarding court officers and employees); *see also Defender Services*, U.S. CTS., https://www.uscourts.gov/services-forms/defender-services (last visited Jan. 30, 2020) ("The Sixth Amendment to the United States Constitution guarantees an accused the right to representation by counsel in serious criminal prosecutions. The responsibility for appointing counsel in federal criminal proceedings for those unable to bear the cost of representation has historically rested in the federal judiciary.") [https://perma.cc/2BH5-TQ2H].

23.   *See* FED. R. CRIM. P. 32.1 (regarding revoking or modifying probation or supervised release); *see also* 18 U.S.C. §§ 3565, 3582 (discussing revocation of probation and the imposition of a sentence of imprisonment).

The United States Sentencing Commission is an independent agency within the judiciary that promulgates guidelines and policy statements to assist in the sentencing decision.[24] At one point, the Commission's guidelines were considered binding on judges, but now, they are advisory.[25]

The United States Probation and Pretrial Services System is another component of the judiciary whose mission it is to provide judges objective information with which to make pretrial release and sentencing decisions.[26] Probation and pretrial services officers also monitor any defendants conditionally released to the community by judges pending trial or as part of probation or supervised release.[27]

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24.   *See* 28 U.S.C. §§ 991−998 (2018) (setting forth the purposes and powers of the U.S. Sentencing Commission); *see also Mission*, U.S. SENT'G COMM'N, https://www.ussc.gov/about-page (last visited Jan. 30, 2020) (describing the Commissions "principal purposes") [https://perma.cc/9Z2E-PR79].

> The Commission's principal purposes are: 1. to establish sentencing policies and practices for the federal courts, including guidelines to be consulted regarding the appropriate form and severity of punishment for offenders convicted of federal crimes; 2. to advise and assist Congress and the executive branch in the development of effective and efficient crime policy; and 3. to collect, analyze, research, and distribute a broad array of information on federal crime and sentencing issues . . . .

Id.

25.   *See* United States v. Booker, 543 U.S. 220, 222 (2005) (discussing how the Guidelines are effectively advisory requiring a sentencing court to consider Guidelines ranges).

26.   *See Probation and Pretrial Services*, U.S. CTS., https://www.uscourts.gov/services-forms/probation-and-pretrial-services (last visited Jan. 30, 2020) (outlining the duties, history, mission, and other aspects of the department) [https://perma.cc/32JF-B5AC].

27.   *See* 18 U.S.C. § 3603 (discussing the duties of probation officers); *see also Probation and Pretrial Services—Mission*, U.S. CTS., https://www.uscourts.gov/services-forms/probation-and-pretrial-services/probation-and-pretrial-services-mission (last visited Jan. 30, 2020) (discussing how the United States Probation and Pretrial Services System, sometimes referred to as Federal Probation, was formed in 1927 and that its officers are "considered the 'eyes and ears' of the federal courts, [and] investigate and supervise persons charged with or convicted of federal crimes") [https://perma.cc/E5VC-QBXB].

D. Defendants

Of course, the sentencing process also involves defendants. There were 73,109 people sentenced in federal court in 2018.[28] They were convicted of a wide variety of offenses with the most common being illegal re-entry into the United States.[29] Drug trafficking and weapons offenses followed, with property crimes and a combination of sex and violent offenses rounding out the top five offense types.[30] The majority of those sentenced, ninety-two percent, were convicted by guilty plea.[31] For those who did go to trial, the conviction rate was eighty-two percent.[32] Those who did not admit their wrongdoing, and put the government to its burden of proof, often faced what is called a "trial penalty" in the form of a longer prison sentence.[33]

28. *See* U.S. COURTS, U.S. DISTRICT COURTS—CRIMINAL JUDICIAL BUSINESS tbl.D-7 (2018), https://www.uscourts.gov/sites/default/files/data_tables/jb_d7_0930.2018.pdf [hereinafter Table D-7] (providing a data table containing the criminal defendants terminated by type of disposition during the twelve-month period from September 30, 2017 until 2018) [https://perma.cc/BD3D-D68Y].

29. *See* U.S. COURTS, U.S. DISTRICT COURTS—CRIMINAL JUDICIAL BUSINESS tbl.D-9 (2018), https://www.uscourts.gov/sites/default/files/data_tables/jb_d9_0930.2018.pdf (giving a breakdown of the criminal defendants terminated by offense as of September 30, 2018) [https://perma.cc/ACS7-57K6].

30. *See* U.S. COURTS, U.S. DISTRICT COURTS—CRIMINAL STATISTICAL TABLES FOR THE FEDERAL JUDICIARY tbl.D-2 (2018), https://www.uscourts.gov/statistics/table/d-2/statistical-tables-federal-judiciary/2018/12/31 (last visited Mar. 22, 2020) (noting that the top five offense types constituted more than seventy percent of the cases handled overall) [https://perma.cc/29VX-D6HV].

31. *See* Table D-7, *supra* note 28; *see also* Michael H. Tonry, *Criminal Law: The Missing Element in Sentencing Reform*, 35 VAND. L. REV. 607, 609 n.15 (1982) (discussing how the high conviction rate upon plea of guilty is not new in federal court, it was eighty-seven percent in 1977).

32. *See* U.S. COURTS, U.S. DISTRICT COURTS—CRIMINAL STATISTICAL TABLES FOR THE FEDERAL JUDICIARY tbl.D-4 (2019), https://www.uscourts.gov/statistics/table/d-4/statistical-tables-federal-judiciary/2019/12/31 (last visited Jan. 30, 2020) (providing information about criminal defendants disposed of by U.S. district courts, by type of disposition and offense) [https://perma.cc/LQ4Y-Q8R9].

33. *See* Andrew Guthrie Ferguson, *Harsh Sentences Are Killing the Jury Trial*, THE ATLANTIC (Dec. 6, 2013), https://www.theatlantic.com/national/archive/2013/12/harsh-sentences-are-killing-the-jury-trial/282121/ (last

Defendants in the federal system are disproportionately men and minorities.[34] Women make up only thirteen percent of defendants overall.[35] Hispanics are more than half the defendant population while those categorized White and Black make up twenty-one percent each.[36] Non-U.S. citizens account for more than forty percent of federal defendants.[37] None of the

visited Jan. 30, 2020) (discussing the findings of the Human Rights Watch Report: An Offer You Can't Refuse) [https://perma.cc/Z5UQ-9UM4]; *see also* Johnson, *supra* note 19, at 256 n.4 (citing to additional reports of "97 percent of defendants who plead guilty receiv[ing] the acceptance of responsibility discount"); *see also An Offer You Can't Refuse*, *supra* note 19 (describing that if a defendant refused to plead guilty, prosecutors "sought remarkably long sentences—at least double the time they would have served had they agreed to plead").

34.   *See Report to the United Nations on Racial Disparities in the U.S. Criminal Justice System*, THE SENT'G PROJECT (Apr. 19, 2018), https://www.sentencingproject.org/publications/un-report-on-racial-disparities/ (last visited Jan. 30, 2020) (submitting a report to the United Nations on "Contemporary Forms of Racism, Racial Discrimination, Xenophobia, and Related Intolerance") [https://perma.cc/2268-4BUE].

35.   *See* Melissa Hamilton, *Some Facts About Life: The Law, Theory, and Practice of Life Sentences*, 20 LEWIS & CLARK L. REV. 803, 839 (2016) (finding also that women make up only two percent of federal defendants sentenced to life in prison).

36.   *See* Tonry, *supra* note 31, at 613 ("[F]orty-eight percent of the prison population in 1979 [was black], compared with thirteen percent of the general population . . . ."). With the increasing number of Hispanic inmates stemming from immigration prosecutions, Blacks and Whites have been decreasing as a percentage of inmates. *See* 2018 U.S. SENT'G COMM'N ANN. REP. 8, https://www.ussc.gov/sites/default/files/pdf/research-and-publications/annual-reports-and-sourcebooks/2018/2018-Annual-Report.pdf [hereinafter 2018 USSC ANNUAL REPORT] (analyzing approximately 321,000 sentencing-related documents for 69,425 individual sentencings) [https://perma.cc/BRZ6-VZ2W]; John Gramlich, *The Gap Between the Number of Blacks and Whites in Prison Is Shrinking*, PEW RES. CTR. (Apr. 30, 2019), https://www.pewresearch.org/fact-tank/2019/04/30/shrinking-gap-between-number-of-blacks-and-whites-in-prison/ (last visited Feb. 8, 2020) ("The decline in the black-white gap between 2007 and 2017 was driven by a 20% decrease in the number of black inmates, which outpaced a 13% decrease in the number of white inmates.") [https://perma.cc/U4M7-WHBM].

37.   *See* 2018 USSC ANNUAL REPORT, *supra* note 36 ("Immigration cases accounted for the largest single group of offenses in fiscal year 2018, comprising 34.4 percent of all reported cases.").

stated demographics match those for the general population of the United States.[38]

Most defendants have a prior criminal history.[39] A study by the United States Sentencing Commission found that nearly three-quarters of federal defendants had at least one prior conviction.[40] The average number of convictions, among those who had them, was six.[41] Nearly forty percent of those prior convictions related to crimes of violence, assault being the most common, followed by robbery, rape, and homicide.[42]

Recidivism rates among defendants once they complete their federal prison sentence depends on the definition of recidivism used and length of post-release time analyzed by researchers.[43] Studies have used one or more of the following as measures of recidivism: rearrests, rearrests related to felony charges, reconviction, reconviction on a specific charge (e.g., sex offense), reimprisonment, and revocation of a community

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38. *See United States Demographic Statistics*, INFOPLEASE, https://www.infoplease.com/us/comprehensive-census-data-state/demographic-statistics-342 (last visited Jan. 7, 2020) (listing women as fifty-one percent of the U.S. population, Hispanics as thirteen percent, Whites as seventy-five percent, and Blacks as twelve percent) [https://perma.cc/2MDS-BY6L]; *see also Population Distribution by Citizenship Status*, KAISER FAMILY FOUND., https://www.kff.org/other/state-indicator/distribution-by-citizenship-status/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D (last visited Jan. 7, 2020) (listing non-U.S. citizens as seven percent of the overall U.S. population) [https://perma.cc/ZZH6-ALGF].

39. *See, e.g.*, TRACEY KYCKELHAHN & EMILY HERBST, U.S. SENTENCING COMM'N, THE CRIMINAL HISTORY OF FEDERAL OFFENDERS 3 (2018), https://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-publications/2018/20180517_criminal-history.pdf (noting that 45,069 of the 61,946 federal offenders included in the study had prior convictions) [https://perma.cc/473M-NKRX].

40. *See id.* ("Almost three-quarters (72.8%) of those offenders had been convicted of a prior offense.").

41. *See id.* (noting that the median was four prior convictions).

42. *See id.* (listing 29.5 percent of convictions were for assault, 8.1 percent for robbery, 4.4 percent for rape, and 1.9 percent for homicide).

43. James L. Johnson, *Comparison of Recidivism Studies: AOUSC, USSC, and BJS*, 81 FED. PROB. 52, 54 (2017) ("No study is without error, and any definition will underestimate the 'true' recidivism rate, because rates are based on official criminal record data that only show crimes for which people have been arrested or convicted.").

supervision term following release.[44] Study periods have been getting longer with advancements in technology allowing for analysis of larger amounts of data.[45] While study periods used to typically span one to three years, now some study periods are closing in on ten years.[46]

The Sentencing Commission conducted a study with an eight-year study period.[47] Almost half of federal offenders followed were rearrested in that time frame.[48] Of those, thirty-two percent were reconvicted, and one-quarter returned to prison.[49] The risk of recidivism found by the Commission was associated with the nature of the defendant's prior criminal record, age at time of release, federal offense type, and education level.[50] Similar risk factors were found by another study

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44. *See id.* at 52 ("Most experts agree that rearrests, reconvictions, and returns to incarceration during a specified period of time are the primary ways to measure recidivism.").

45. *See id.* at 53 ("Not surprisingly, studies with longer follow-up periods tend to report higher rates of recidivism.").

46. *See* MARIEL ALPER ET AL., U.S. DEP'T OF JUSTICE, NCJ NO. 250975, 2018 UPDATE ON PRISONER RECIDIVISM: A 9-YEAR FOLLOW-UP PERIOD (2005-2014) 14 (2018), https://www.bjs.gov/content/pub/pdf/18upr9yfup0514.pdf ("This study shows how recidivism and desistance measures change when longer or shorter follow-up periods are used. With these additional data, designers and users of recidivism and desistance studies have more information to determine which follow-up period is best for their needs.") [https://perma.cc/KDV3-9PLM].

47. *See* KIM STEVEN HUNT & ROBERT DUMVILLE, U.S. SENTENCING COMM'N, RECIDIVISM AMONG FEDERAL OFFENDERS: A COMPREHENSIVE OVERVIEW 11 (2016), https://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-publications/2016/recidivism_overview.pdf ("Because the study follow-up period was eight years, and the typical length of supervision was not more than three years, most offenders completed their term of supervision, and were no longer on supervision for much of the follow-up period.") [https://perma.cc/3YED-458Y].

48. *See id.* at 5 (indicating that 49.3 percent were rearrested for violating supervision conditions or for a completely new offense).

49. *See id.* (noting that 31.7 percent of the offenders were reconvicted, and 24.6 percent were reincarcerated over the eight-year period).

50. *See id.* (limiting the results of the study to 25,431 federal offenders who were living U.S. citizens who re-entered the community during 2005, had valid FBI numbers, and pre-sentence investigation reports that detailed sentences that were not vacated).

conducted by the United States Probation and Pretrial Services System, with the added elements of cognitions—the defendant's thought patterns and value systems—and the prosocial nature of the defendant's associates.[51]

III. The Past

Following the American Revolution and through the Nineteenth Century, there were very few federal prosecutions.[52] The penalties for the small number of federal offenses that did exist were varied—ranging from mandatory death sentences and fixed corporal punishment such as standing at the pillory to varying terms of imprisonment that the court could impose at its discretion.[53] State and local systems at the time did not exclusively entrust sentencing authority to judges, instead giving authority in some instances to juries.[54]

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51. *See* Matt DeLisi, Michael J. Elbert & Alan J. Drury, *Federal Criminal Careers: An Empirical Examination of the Post-Conviction Risk Assessment (PCRA)*, 43 AM. J. CRIM. JUST. 792, 795 (2018) ("[T]he basic components of the PCRA are compatible with understanding variations in criminal careers, particularly the most chronic and serious offenders that have been shown to have extensive criminogenic risks and needs that collectively contribute to severe responsivity deficits as well.").

52. *See* Jim Martin, *The Creation of the Department of Justice*, LIBR. CONG. (Dec. 4, 2017), https://blogs.loc.gov/law/2017/12/the-creation-of-the-department-of-justice/ (last visited Feb. 4, 2020) ("Only a few cases would arise under the nascent federal criminal law, the most famous of the early Republican period being the treason trial of Aaron Burr.") [https://perma.cc/YD86-E2SK]; *see also Jurisdiction: Criminal*, FED. JUD. CTR., https://www.fjc.gov/history/courts/jurisdiction-criminal (last visited Feb. 4, 2020) (noting that between 1801 and 1829, there were, on average, fewer than one hundred federal criminal indictments per year, and numbers did not begin notably increasing until the prosecution of criminal cases following the Civil War) [https://perma.cc/VPC5-JMSF?type=image].

53. *See, e.g., Crimes Act of 1790 (1st Federal Criminal Law)*, STATUTES & STORIES (Feb. 9, 2018), https://www.statutesandstories.com/blog_html/crimes-act-of-1790-1st-federal-criminal-law/ (last visited Feb. 4, 2020) (describing the lawful forms of punishment for capital and other federal crimes) [https://perma.cc/T74T-CZ67].

54. *See* Morris B. Hoffman, *The Case for Jury Sentencing*, 52 DUKE L.J. 951, 953 (2003) (stating that only five states—Arkansas, Missouri, Oklahoma, Texas, and Virginia—permit juries to make the sentencing decision in noncapital felony cases).

A. The Indeterminant Sentencing System

During most of the Twentieth Century, as the number of federal offenses steadily increased, the federal government used an "indeterminant" sentencing system.[55] Under that system,

> each case was resolved on its own merits; to the extent there were standards, they evolved from the day-to-day experience of sentencing individuals. There was little or no appellate review of sentencing. And the substantive law of sentencing was shaped by rehabilitation, a penal philosophy that necessarily reinforced the judge's role and limited Congress's and the public's.[56]

The indeterminant model was being followed in many states and western countries as well.[57] The emphasis on rehabilitation was a reflection of the prevailing belief that crime is a failing of the community more than that of the individual.[58] Another important aspect of the model was that it entrusted sentencing decisions to professional judges and corrections

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55.   *See* Michael Tonry, *Sentencing in America, 1975–2025,* 42 CRIME & JUST. 141, 141–42 (2013) ("In 1970, every American state and federal system since at least the 1930s had operated an indeterminate sentencing system premised on rehabilitation as the primary aim of punishment and on the desirability of tailoring sentences in every case to the offender's circumstances and needs.").

56.   *See* Nancy Gertner, *A Short History of American Sentencing: Too Little Law, Too Much Law, or Just Right,* 100 J. CRIM. L. & CRIMINOLOGY 691, 696 (2010) (discussing the greater power that judges and parole authorities held relative to that of other sentencing players such as Congress or the public).

57.   *See* Tonry, *supra* note 55, at 142 (describing how state and federal judges followed the indeterminate model of sentencing which was also adopted by the National Council on Crime and Delinquency's Advisory Council of Judges, as well as the National Commission on Reform of Federal Criminal Law in its *Proposed Federal Criminal Code*).

58.   *See* Edward C. Kaminski*, Indeterminate Sentencing—Half-Step Toward Science in Law*, 10 CASE W. RES. L. REV. 574, 574–75 (1959) ("But a new school of thought, criminology, had developed the idea that it was not the criminal who had wronged society, but rather that society had wronged the criminal by inflicting upon him adverse environmental influences that molded his criminality.").

officials, rejecting reliance on lay juries,[59] who—it was felt—had little or no experience in sentencing matters. The inclusion of parole, which was designed to incentivize and act on a defendant's rehabilitation, gave the indeterminant model its name.[60] The contingent and discretionary nature of parole meant no one knew at original sentencing and for a period afterward how much time a defendant would serve in prison.[61]

The discretion afforded judges and corrections officials also addressed practical considerations of the day. Technology, or more accurately its absence, significantly limited operation and oversight of the indeterminate system, or any system that would have been used for that matter. Up until the 1980s, office equipment in the judiciary consisted primarily of the typewriter and desk telephone. Collaboration among judges, parole officials, and prison officials was difficult. Development and dissemination of reference materials was expensive and time consuming. Research—whether it be legal or social science— was primarily a manual endeavor, both often costly and difficult to replicate. Even simply transferring documents, until photocopiers became commonplace, was a challenge.[62] As a practical matter, centralizing control of sentencing was

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59. *See* Gertner, *supra* note 56, at 694 (explaining how the power of the jury declined, including the power to affect the sentence).

60. *See* Michael Tonry, *Reconsidering Indeterminate and Structured Sentencing*, SENT'G & CORRECTIONS, Sept. 1999, at 5, https://www.ncjrs.gov/pdffiles1/nij/175722.pdf (describing how indeterminate sentencing views human beings as malleable and redeemable and, accordingly, allows maximum scope for efforts to provide services to offenders and to expose them to opportunities for self-improvement and advancement) [https://perma.cc/6P2P-LVZM].

61. *See* Edward Lindsey, *Historical Sketch of the Indeterminate Sentence and Parole System,* 16 J. CRIM. L. & CRIMINOLOGY 9, 9 (1925) (explaining that indeterminate sentencing generally means that a maximum limit for the duration of imprisonment is specified, or if it is not, it is fixed by law and implicit in the sentence).

62. *See* Nick Heath, *The Evolution of Office Technology: From the Typewriter to the Tablet*, ZDNET (Oct. 23, 2013, 7:25 AM), https://www.zdnet.com/pictures/the-evolution-of-office-technology-from-the-typewriter-to-the-tablet/ (last visited Feb. 3, 2020) (stating that the contribution of modern technology to each worker's productivity is nearly five times greater today than it was in the 1970s) [https://perma.cc/2X64-877N].

impossible, and accurately studying and reporting on the system for most of its existence was a challenge as well. "Big data" did not exist, at least not on the scale it does today.[63] Consequently, for even those within the system, anecdotes had to pass for reliable data.[64]

For judges, parole officials, and prison officials, particularly those working in remote sections of the country, it meant they had to work in isolation—almost blind to the activities of their colleagues. At the time, the greatest resource that could be dedicated to sentencing was the individual professionalism and experience of judges and corrections officials.

The strengths of the indeterminate approach included allowing judges to tailor sentences to the criminogenic risk and rehabilitative needs of each defendant.[65] Judges also could leverage use of non-custodial sentencing options, including suspending sentences, imposing probation,[66] and ordering financial sanctions. Even if the harsher option of imprisonment was imposed, the United States Parole Commission could

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63. *See* ROGER K. WARREN, CRIME & JUSTICE INST., EVIDENCE-BASED PRACTICE TO REDUCE RECIDIVISM: IMPLICATIONS FOR STATE JUDICIARIES, at xi (2007) ("Most important, unlike 30 years ago, there is today an enormous body of sophisticated research."). A Google Search conducted on January 2, 2020, for the time period 1900 to 1970, for the phase "recidivism study" returned no hits. In contrast, more than 2,300 hits using the same phrase were returned for documents created from 1980 to 2020.

64. *See* Peter Reuter, *Methodological Problems of Organized Crime Research*, *in* MAJOR ISSUES IN ORGANIZED CRIME CONTROL 169, 173 (Herbert Edelhertz ed., 1986) (citing a plurality of anecdotes constituting data in the absence of anything else in relation to organized crime research of the time).

65. *See* Douglas A. Berman, *Reflecting on Parole's Abolition in the Federal Sentencing System, Federal Probation*, 81 FED. PROB. J. 18, 18 (2017) ("[P]revalent modern philosophy of penology that the punishment should fit the offender and not merely the crime." (quoting *Williams v. New York*, 337 U.S. 241, 247 (1949))).

66. *See* Probation Act of March 4, 1925, Pub. L. No. 596, 43 Stat. 1259 (providing for the suspension of the sentence and release of the prisoner on probation after conviction or after a plea of guilty or *nolo contender* for any crime or offense not punishable by death or life imprisonment).

reduce the length of terms if warranted based on the defendant's post-sentencing conduct.[67]

B. Critiques of the Indeterminant Sentencing System

The problem, according to critics, was that the system operated in an arbitrary way and did not help defendants, nor did it protect the community.[68] The imposition of disparate sentences seemed inevitable. Judges had considerable discretion and operated independently of one another. Consequently, they were in silos, and because difficult sentencing issues can legitimately be approached in different ways, inconsistencies emerged.[69] The disparity seemed to work to the particular disadvantage of minorities, with Blacks being both disproportionately victims of crime and recipients of longer prison sentences.[70] Compounding things further, as long as the

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67. *See* Lindsey, *supra* note 61, at 10 (describing how this concept began in New York in 1817 by giving prison inspectors power to release inmates who had served three-fourths of their sentence, as a reward for good behavior).

68. *See* Gary L. Mason, *Indeterminate Sentencing: Cruel and Unusual Punishment, or Just Plain Cruel*, 16 NEW ENG. J. ON CRIM. & CIV. CONFINEMENT 89, 98–100 (1990) (explaining how rehabilitation as it applies to sentencing is criticized as frivolous when the central problem is to habilitate felons for the first time, as a majority of them ran into trouble with the law as teenagers and have never been exposed to a law-abiding, self-supporting life).

69. *See* Christopher T. Bayley, *Good Intentions Gone Awry—A Proposal for Fundamental Change in Criminal Sentencing*, 51 WASH. L. REV. 529, 535 (1976) ("One study involving the federal courts found significant sentence disparity among individual judges in the same judicial district as well as among those in different geographical areas."); *see also* S. REP. No. 98-225, at 41 (1983) (citing A. PARTRIDGE & W. ELDRIDGE, FED. JUDICIAL CTR., THE SECOND CIRCUIT SENTENCING STUDY: A REPORT TO THE JUDGES 1-3 (1974)); *see also* Tonry, *supra* note 31, at 612 ("In several well-known experiments researchers asked trial judges to review presentence reports and to indicate the sentences that they would impose. The results demonstrated that for the same defendant, some judges would impose probation and other judges would impose a lengthy prison sentence.").

70. *See* JOAN R. PETERSILIA, NAT'L INST. OF CORR., RACIAL DISPARITIES IN THE CRIMINAL JUSTICE SYSTEM, at v–vii (1983) ("Blacks are also disproportionately victimized by crime: Murder is the leading cause of death for young black males, and is also high for young black females. . . . [A]fter . . . a felony conviction, minority offenders were more likely than whites to be given longer sentences and to be put in prison rather than jail.").

judge stayed within the very broad statutory parameters of the day, the parties were precluded from challenging the sentence on appeal.[71]

The lack of certainty inherent in indeterminant sentencing presented yet another problem. It diminished the deterrent effect of sentencing associated with upholding the rule of law. Defendants walked into the courtroom having no idea what they would be sentenced to, they walked out not knowing how their sentence looked relative to other defendants, and not even knowing how much of the sentence would actually be enforced. The ambiguity, critics argued, undercut the deterrent value of the sentencing process.[72]

Maybe more fatal to indeterminant sentencing was the fact that when research did eventually start to build leading into the 1980s, the results were disappointing.[73] In addition to documenting the sentencing disparity that in the aggregate could not be explained, studies indicated that the central objective of the indeterminant system—rehabilitation—was not being achieved.[74]

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71.   *See* Beckles v. United States, 137 S. Ct. 886, 889 (2017) (holding that the "Sentencing Guidelines are not subject to a challenge under the void-for-vagueness doctrine" and that sentencing courts have broad discretion "within the bounds established by Congress"). *see also* Gertner, *supra* note 56, at 696 ("There was little or no appellate review of sentencing.").

72.   LYNNE GOODSTEIN, U.S. DEP'T OF JUSTICE, DETERMINATE SENTENCING AND THE CORRECTIONAL PROCESS: A STUDY OF THE IMPLEMENTATION AND IMPACT OF SENTENCING REFORM IN THREE STATES 12 (1984) (stating that conservative critics believe that "judicial discretion [in indeterminate sentencing] undermines the deterrent value of punishment because offenders are never certain whether they will be punished or, if punished, how severe the punishment will be.")

73.   *See infra* notes 74–75 and accompanying text (discussing research and criticism that focused on the success of indeterminate sentencing).

74.   *See* John C. Coffee, Jr., *The Future of Sentencing Reform: Emerging Legal Issues in the Individualization of Justice*, 73 MICH. L. REV. 1361, 1366 (1975) ("Support for their charges can be found in a number of carefully conducted studies revealing frequent examples of unjustified disparity in the sentences assigned offenders having similar case histories . . . ."); Robert Martinson, *What Works?—Questions and Answers About Prison Reform*, PUB. INT., Spring 1974, at 22, 25 ("With few and isolated exceptions, the rehabilitative efforts that have been reported so far have had no appreciable effect on recidivism.") (emphasis omitted).

The Bureau of Justice Statistics found, for example, that sixty-one percent of those admitted to prison in 1979 were recidivists, and forty-six percent of the recidivists admitted would have still been in prison on an earlier sentence had they not been paroled or otherwise released early.[75]

While it was unclear if the failure related to the responsivity of the defendants or the quality of the programming offered, indeterminate sentencing had not delivered on its primary objective.[76] With crime rates climbing,[77] judges being blamed,[78] and even prisons being criticized as too soft-on-crime,[79] the fate of indeterminate

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75. LAWRENCE A. GREENFIELD, U.S. DEP'T OF JUSTICE, EXAMINING RECIDIVISM 1 (1985), https://www.ncjrs.gov/pdffiles1/Digitization /96501NCJRS.pdf [https://perma.cc/K8PA-HA2Q]; *but see* MARIEL ALPER ET AL., *supra* note 46, at 1 (analyzing recent recidivism rates on the basis of data collected from thirty states).

76. *See* Mason, *supra* note 68 ("In fact, just over the last decade, it has become increasingly clear that the indeterminate sentencing system has fallen short in reaching its lauded goal: the rehabilitation of convicted felons."); *see also* MARIEL ALPER ET AL., *supra* note 46, at 1 ("An estimated 68% of released prisoners were arrested within 3 years, 79% within 6 years, and 83% during the 9 years."). Note that it is difficult to compare the criminogenic risk profile of the 1980s cohort versus the more recent.

77. *See* Lauren-Brooke Eisen, *America's Faulty Perception of Crime Rates*, BRENNAN CTR. FOR JUST. (Mar. 16, 2015), https:// www.brennancenter.org/our-work/analysis-opinion/americas-faulty-perception-crime-rates (last visited Feb. 12, 2020) ("Americans who lived through the 1960s and 1970s remember the fear associated with a real surge in violent crime. In fact, the violent crime rate increased by 126 percent between 1960 and 1970 . . . .") [https://perma.cc/L3HB-JGTB].

78. *See* Edward V. Heck, *Justice Brennan and the Heyday of Warren Court Liberalism*, 20 SANTA CLARA L. REV. 841, 866 (1980) ("[L]aw enforcement spokesmen charged that the Justices were soft on crime, pro-criminal, and anti-police."); *see also* GOODSTEIN, *supra* note 72 ("[C]onservatives traditionally have been opposed to the discretion inherent in the indeterminate sentence because of the freedom it provides judges to be 'soft on criminals.").

79. *See* Dick Zimmer, *Prison Is No Place for 'Extras,'* THE CHRISTIAN SCI. MONITOR (Feb. 28, 1995), https://www.csmonitor.com/1995/0228/28204.html (last visited Feb. 9, 2020) (citing state and federal prison facilities with access to: closed-circuit television stations airing sex, violence, and horror shows; pool tables; tennis and handball courts; ball fields; miniature golf, and; daily movies) [https://perma.cc/8CL2-ERPZ].

sentencing—at least on the federal level—was sealed. The question then was what would replace it.

IV. The Present

A. The Determinant Sentencing System

The "determinant" sentencing system that came to be, particularly with passage of the Sentencing Reform Act of 1984,[80] was virtually a line-by-line repudiation of the indeterminant system.[81] The new system sought to bring more "truth-in-sentencing," to reduce disparity and to better protect the community.[82]

Whereas the touchstones of the indeterminant system were rehabilitation and judicial discretion, under determinant sentencing, incapacitation and deterrence would be prioritized, along with uniformity.[83] The pendulum shift was nearly absolute.[84]

One key feature of the Sentencing Reform Act was establishment of the United States Sentencing Commission.[85] Although more known for promulgation of sentencing guidelines, the Commission's mission includes collection, analysis, and sharing of information related to federal crime and

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80. Sentencing Reform Act of 1984 (SRA), Pub. L. No. 98-473, tit. II, ch. II, 98 Stat. 1987 (codified as amended in scattered sections of 18 U.S.C. and 28 U.S.C. §§ 991–998 (2018)).

81. *See* William T. Carey, *Determinate Sentencing in California and Illinois: Its Effect on Sentence Disparity and Prisoner Rehabilitation*, 1979 WASH. U. L. Q. 551, 557–68 (1979) (discussing the revisions made to the criminal justice system by the introduction of determinate sentencing reforms).

82. *See id.* at 553–54 ("The definite sentence, on the other hand, generally has been justified as a means to achieve the goals of deterrence and retribution.").

83. *See id.* ("Rehabilitation, however, has seldom been practiced effectively . . . .").

84. The new system did restrain some judicial discretion, albeit guided through an intricate guideline system. So, judges' discretion was cabined but not eliminated.

85. 28 U.S.C. § 991 (2018).

sentencing.[86] The assignment of that mission to the Commission, in conjunction with complementary missions given to the Bureau of Justice Statistics[87] and other agencies, reflects Congress's commitment to being empirical and viewing sentencing as an evolutionary process.

B. Research and the Indeterminant Sentencing System

The Commission has published scores of research reports over the years and continues to make data files available for others to conduct research.[88] The amount of information processed and shared by the Commission, and its ability to develop and implement changes to the guidelines,[89] is only

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86. *See* 2018 USSC ANNUAL REPORT, *supra* note 36, at 2 (identifying the statutory duties of the federal agency).

87. *See About the Bureau of Justice Statistics*, BUREAU OF JUST. STAT., https://www.bjs.gov/index.cfm?ty=abu (last visited Feb. 9, 2020) ("To collect, analyze, publish, and disseminate information on crime, criminal offenders, victims of crime, and the operation of justice systems at all levels of government. These data are critical to federal, state, and local policymakers in combating crime and ensuring that justice is both efficient and evenhanded.") [https://perma.cc/JF23-LZV9?type=image].

88. *See generally Research*, U.S. SENT'G COMMISSION, https://www.ussc.gov/research (last visited Feb. 9, 2020) (providing reports and data files) [https://perma.cc/VZ2L-YXXZ]; *see also Office of Research and Data*, U.S. SENT'G COMMISSION, https://www.ussc.gov/about/who-we-are/organization/office-research-and-data (last visited Feb. 12, 2020) ("As part of its ongoing work, the Office of Research and Data studies a wide variety of sentencing issues, including changes in the types and severity of federal crimes, changes in the demographic characteristics and criminal history of federal offenders, and sentencing trends in the federal courts.") [https://perma.cc/6FZV-JLVM].

89. *Cf.* U.S. SENTENCING GUIDELINES MANUAL app. C (U.S. SENTENCING COMM'N Supp. 2018) (containing amendments to the Sentencing Guidelines effective November 1, 2012 through November 1, 2018); U.S. SENTENCING GUIDELINES MANUAL app. C, vol. 3 (U.S. SENTENCING COMM'N 2011) (containing amendments effective November 1, 2004 through November 1, 2011); U.S. SENTENCING GUIDELINES MANUAL app. C, vol. 2 (U.S. SENTENCING COMM'N 2003) (containing amendments effective November 1, 1998 through November 1, 2003); U.S. SENTENCING GUIDELINES MANUAL app. C, vol. 1 (U.S. SENTENCING COMM'N 2003) (containing amendments effective through November 1, 1997). Since the effective date of the original guideline manual on November 1, 1987, there have been 813 amendments for an average of 27 a year.

possible because of the technologies that began to mature in the 1980s.[90]

Desktop computers, word processing and spreadsheet software, facsimiles, email, laser printers, and electronic scanning, all facilitated data research and reporting. Awareness of sentencing trends and understanding of new policies and procedures of the Commission is now achieved at a pace that was unknown in the indeterminate era.

C. The Push for "Truth in Sentencing"

The determinant system sought to achieve "truth in sentencing" through a number of mechanisms. On the back end, parole was abolished.[91] As a result, defendants serve whatever prison term is imposed, less relatively minor reductions for good behavior.[92]

On the front end, the Sentencing Reform Act and other statutes served to limit judges' discretion.[93] Judges had to record and report more of their sentencing activities; sentencing overall was subjected to more appellate review.[94] Congress enacted a series of laws requiring mandatory minimum prison terms.[95]

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90.   *See* David Bradlow, *The Changing Legal Environment—The 1980s and Beyond*, A.B.A. J., Dec. 1, 1988, at 72, 74 (discussing the impact that automation will have on the legal industry).

91.   *See* 18 U.S.C. § 3624(a) (2018) ("A prisoner shall be released by the Bureau of Prisons on the date of the expiration of the prisoner's term of imprisonment . . . .").

92.   *See id*. § 3624(b) (stating the terms by which a prisoner may receive credit toward an effectively reduced sentence).

93.   *See* Mistretta v. United States, 488 U.S. 361, 363–68 (1989) (contrasting the level of judicial discretion under indeterminate sentencing against the level of discretion after the Sentencing Reform Act).

94.   *See id*. at 367–68 (describing the scope of appellate review under the Sentencing Reform Act).

95.   *See* U.S. SENTENCING COMM'N, 2011 REPORT TO THE CONGRESS: MANDATORY MINIMUM PENALTIES IN THE FEDERAL CRIMINAL JUSTICE SYSTEM 7–23 (2011), https://www.ussc.gov/sites/default/files/pdf/news/congressional-testimony-and-reports/mandatory-minimum-penalties/20111031-rtc-pdf /Chapter_02.pdf [hereinafter 2011 REPORT TO THE CONGRESS] (describing the history of mandatory minimum sentences) [https://perma.cc/D9JG-W96Q].

While not a new concept,[96] mandatory minimum penalties had fallen out of favor during the indeterminant sentencing era.[97] Mandatory minimums serve to limit judicial discretion and arguably limit disparity.[98] The mandatory minimums created in the 1980s were particularly significant because they applied to a large and growing portion of the criminal docket: drug and weapons offenses.[99] The new penalties were particularly severe for crack cocaine distribution, as Congress deemed that substance extraordinarily addictive and associated with violence.[100]

Later, mandatory minimum terms were added for child abuse, child pornography, and identity theft offenses—all to reflect the seriousness with which Congress viewed those offenses.[101] The severity of the penalties for crack cocaine were eventually reduced by Congress in 2010 and a "safety valve" was created from mandatory minimums involving low-ranking drug offenders.[102]

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96. *See id*. (discussing mandatory minimum sentencing before the Sentencing Reform Act).

97. *See id*. at 18 ("In 1897, Congress created the Commission to Revise and Codify the Criminal and Penal Laws of the United States . . . in its reports to Congress, the Revision Commission recommended the abolition of mandatory minimum penalties for many crimes not punishable by death.").

98. *See id.* at 1 (describing the goals of sentencing reform).

99. *See, e.g.*, Juvenile Drug Trafficking Act of 1986, Pub. L. No. 99-570, 100 Stat. 3207 (outlining mandatory minimum sentencing for the employing minors in the illegal drug trade).

100. *See* 2011 REPORT TO THE CONGRESS, *supra* note 95, at 24–25 (discussing the one-to-one hundred ratio treatment of crack and cocaine whereby sentencing for crack offenses are one-hundred times harsher than for the same offense with powder cocaine*); see also The Relationship Between Cocaine Use and Violence*, LIFE WORKS (Feb. 1, 2020), https://www.lifeworkscommunity.com/blog/the-relationship-between-cocaine-abuse-and-violence (last visited Feb. 23, 2020) ("26% of crack users had committed a crime while on crack, 95% of which involved violence.") [https://perma.cc/C84N-KKMN].

101. *See* 2011 REPORT TO THE CONGRESS, *supra* note 95, at 27–29 (discussing the addition of mandatory minimum sentencing in both the Adam Walsh Child Protection and Safety Act of 2006 and the Identity Theft Penalty Enhancement Act).

102. *See* 18 U.S.C. § 3553(f) (2018) (specifying the conditions on which offenders may receive lower penalties than the statutory minimum).

D. The Introduction of the U.S. Sentencing Guidelines

Another key component to truth-in-sentencing was the sentencing guidelines. The guidelines were formed, implemented, and continue to be monitored by the United States Sentencing Commission.[103] The Commission was directed by Congress to create guidelines that address twelve factors in all, including just punishment, deterrence, incapacitation, and rehabilitation.[104] Along with certainty and fairness, the Commission was charged with avoiding unwarranted disparity and relatedly was to limit the impact of defendants' personal characteristics at sentencing.[105] If that were not enough, the Commission had to allow for judges to depart from the prescribed sentence based on relevant aggravating and mitigating factors.[106]

The Commission attempted to balance all the complex, sometimes competing, factors in its charge, but out of necessity had to make trade-offs and value judgments.[107] Discretion had to rest somewhere and by entrusting it to one entity, the Sentencing Commission, it was hoped that federal sentencing would become more consistent.

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103.   *See About*, U.S. SENT'G COMMISSION (Feb. 1, 2020), https://www.ussc.gov/about-page (last visited Feb. 23, 2020) (providing an overview of the Sentencing Commission's role in creating and maintaining federal sentencing guidelines) [https://perma.cc/MX24-FTJX].

104.   *See* U.S. SENTENCING GUIDELINES MANUAL 1–2 (U.S. SENTENCING COMM'N 2018) (describing the statutory mission of the Sentencing Reform Act) [https://perma.cc/SZ35-487X].

105.   *See* 28 U.S.C. § 994(e) (describing the duties of the commission).

106.   *See* Chris Eskridge, *An Overview of the United States Sentencing Commission*, UNIV. OF NEB. (Feb. 1, 2020), https://www.unl.edu/eskridge/cj211sentence.html (describing the primary purposes for sentencing guidelines) [https://perma.cc/4M58-MFKL].

107.   *See* Stephen Breyer, *The Federal Sentencing Guidelines and the Key Compromises Upon Which They Rest*, 17 HOFSTRA L. REV. 1, 8–24 (1988) (explaining various compromises, including the Commission's incorporation of the Parole Commission's framework for offender characteristics due to a lack of consensus on what new characteristics to include).

The Commission created a point system that correlated to a range of prison time, and other components of a sentence.[108] Values, or levels, were created for such things as harm in the case, role in the offense, attempts at obstruction of justice, and acceptance of responsibility.[109] Points and categories were created to capture the severity of the defendant's prior criminal record.[110] Then, the offense level and criminal history points were applied to a grid that produced a guideline custody range, in months.[111] Consequently, defendants with comparable criminal histories and similar federal offense conduct would have the same or similar guideline range, effectively reducing disparity. Courts could "depart" from the prescribed guideline range, but through processes set out in the guidelines themselves.[112]

As added protections and to facilitate study, judges were required to explain the reasons for the sentence imposed both on the record in court and in various forms required by the Sentencing Commission.[113] Another major difference from the

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108. *See generally* U.S. SENTENCING GUIDELINES MANUAL (U.S. SENTENCING COMM'N 2018) (providing how points are allocated based on various circumstances).

109. *See id.* at 345–79 (describing sentencing adjustments based on awarding of different points).

110. *See id.* at 379–405 (providing the sentencing effects of criminal history and livelihood).

111. *See generally id.*

112. *See* U.S. SENTENCING COMM'N, 2018 ANNUAL REPORT AND SOURCEBOOK OF FEDERAL SENTENCING STATISTICS tbl.33 (2018) [hereinafter 2018 ANNUAL REPORT AND SOURCEBOOK]. In 2018, courts departed in about half the cases. Of those, about forty percent of the departures were upon motion of the government for the defendant's cooperation. Only about one percent of cases involved an "upward departure" where the court impose a sentence above the guideline custody range. The rest all represented downward departures.

113. *See* 18 U.S.C. § 3553(c) (2018) (requiring the courts to include a statement of reasoning for the sentence imposed); *see also* 28 U.S.C. § 994(w) (2018) (requiring courts to submit a sentencing report to the Commission); RICARDO S. MARTINEZ, FEDERAL SENTENCING POLICY: ROLE OF THE JUDICIAL CONFERENCE OF THE UNITED STATES AND THE ADMINISTRATIVE OFFICE OF THE U.S. COURTS 7–8 (2017) (explaining that reporting requirements of 18 U.S.C. § 3553(c) and 28 U.S.C. § 994(w) saved on costs because it removed the need for obtaining and reviewing long sentencing transcripts to determine the reasoning).

indeterminant sentencing system was the scope of appellate review.[114] Automatic rights to appeal were created if a judge sentenced outside the applicable guideline range, defendants being able to challenge any sentence above the range while the government was authorized to appeal any sentence below the guidelines.[115]

On November 1, 1987, the guidelines went into effect.[116] As would be expected in light of the seismic change they represented, criticism followed and has not stopped. The nature of the criticism varies with the perspective and position of the proponent.[117] However, one themed complaint is that the guidelines are overly complicated. The guideline manual itself is hundreds of pages and has been amended more than 800 times.[118]

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114.   *See* Mistretta v. United States, 488 U.S. 361, 368 (1989) (describing the scope of appellate review under the Sentencing Reform Act).

115.   *See* U.S. SENTENCING COMM'N, FIFTEEN YEARS OF GUIDELINES SENTENCING: AN ASSESSMENT OF HOW WELL THE FEDERAL CRIMINAL JUSTICE SYSTEM IS ACHIEVING THE GOALS OF SENTENCING REFORM 7 (2004), https://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-projects-and-surveys/miscellaneous/15-year-study/15_year_study_full.pdf (explaining the automatic right to appeal under 18 U.S.C. § 3742) [https://perma.cc/4XGP-CTZD]; *see also* 18 U.S.C. § 3742(a), (b) (2018) (describing the range-related conditions under which the defendant and the government may file for appeal, respectively); Ellsworth A. Van Graafeiland, *Some Thoughts on the Sentencing Reform Act of 1984*, 31 VILL. L. REV. 1291, 1293–94 (1986) (discussing Congress's intent to distinguish between those appeals based on incorrect application of the guidelines and those appeals based sentencing beyond the applicable ranges under the guidelines).

116.   *See* U.S. SENTENCING GUIDELINES MANUAL 1 (U.S. SENTENCING COMM'N 2018) ("The following provisions of this Subpart set forth the original introduction to this manual, effective November 1, 1987 . . . .").

117.   *See* Michael Tonry, *The Functions of Sentencing and Sentencing Reform*, 58 STAN. L. REV. 37, 62 (2005) (explaining different attitudes toward the guidelines by individuals with varying goals).

118.   *See* Jon O. Newman, *The Federal Sentencing Guidelines: A Good Idea Badly Implemented*, 46 HOFSTRA L. REV. 805, 811 (2017) (stating that the Guidelines Manual is more than 500 pages and has had more than 800 amendments added).

E. The Supreme Court and the Guidelines

There is also a body of interpretive caselaw with circuit splits and Supreme Court opinions on important issues.[119] Also, judges have to complete regimented forms to facilitate recording of the sentence and its reasons in Sentencing Commission databases.[120] Some argue the forms are so structured and bureaucratic that they provide less information, and are less accessible, than if judges relied on traditional written opinions which they use in virtually every other aspect of law.[121]

In 2005, eighteen years after the guidelines went into effect, the Supreme Court determined that for the guidelines to be constitutional they must be advisory and nonbinding on sentencing judges.[122] The Court's decision gave a measure of sentencing discretion back to judges. The Court also brought jury involvement in sentencing back via a series of Sixth Amendment cases.[123]

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119.   *See* Douglas A. Berman, *From Lawlessness to Too Much Law? Exploring the Risk of Disparity from Differences in Defense Counsel Under Guidelines Sentencing*, 87 IOWA L. REV. 435, 442–43 (2002) ("[J]udicial decisions soon began to increase significantly the corpus of federal sentencing law . . . .").

120.   *See* Van Graafeiland, *supra* note 115, at 1295 ("Because the trial court always must state the reasons for the sentence it has imposed . . . a completely new body of sentencing law is almost certain to result.").

121.   *See* Brian Jacobs, *The Vanishing of Federal Sentencing Decisions*, FORBES (July 19, 2019), https://www.forbes.com/sites/insider/2019/07/19/the-vanishing-of-federal-sentencing-decisions/#2ba2b1344c44 (last visited Apr. 11, 2020) (describing how difficult it is to find sentencing decisions on PACER and how this disadvantages prosecutors, defense attorneys, judges, and defendants) [https://perma.cc/2D8W-VGVF].

122.   *See* United States v. Booker, 543 U.S. 220, 245 (2005) ("We answer the question of remedy by finding the provision of the federal sentencing statute that makes the Guidelines mandatory, incompatible with today's constitutional holding.").

123.   *See* Apprendi v. New Jersey, 530 U.S. 466, 490 (2000) ("[I]t is unconstitutional for a legislature to remove from the jury the assessment of facts that increase the prescribed range of penalties to which a criminal defendant is exposed. It is equally clear that such facts must be established by proof beyond a reasonable doubt." (quoting Jones v. United States, 526 U.S. 227, 252–53 (1999))); *see also* Ring v. Arizona, 536 U.S. 584, 609 (2002)

One would think the Supreme Court holdings would have turned sentencing practices on their head. The actual impact was more muted. Since most defendants, as part of plea agreements,[124] waive their right to jury determinations,[125] jury influence at sentencing has remained limited. Moreover, while not binding, judges are still required to consult the sentencing guidelines.[126] Consequently, guidelines continue to hold a central place in the sentencing process and custody terms prescribed by the guidelines remain highly influential.[127]

(holding that the aggravating circumstances triggering the death penalty must be found, per the Sixth Amendment by a jury, not a judge).

124.   *See* Alan Ellis & Karen. L. Landau, *A Federal Criminal Appeal Primer: A Guide for Clients and their Family and Friends*, ALANELLIS (2002), https://alanellis.com/a-federal-criminal-appeal-primer-a-guide-for-clients-and-their-family-and-friends/ ("While every criminal defendant has a right to an appeal, the right to appeal may be waived. Many government attorneys insist upon a waiver of the right to appeal pursuant to a plea agreement under which the defendant pleads guilty in exchange for some promises or concessions from the government.") [https://perma.cc/AQ5B-XCFP]; *see also* U.S. DEP'T OF JUSTICE, CRIMINAL RESOURCE MANUAL § 626.2 (2019), https://www.justice.gov/jm/criminal-resource-manual-626-plea-agreements-and-sentencing-appeal-waivers-discussion-law (last updated Jan. 22, 2020) (last visited Mar. 3, 2020)

> The defendant is aware that 18 U.S.C. § 3742 affords a defendant the right to appeal the sentence imposed. Acknowledging all this, the defendant knowingly waives the right to appeal any sentence within the maximum provided in the statute(s) of conviction (or the manner in which that sentence was determined) on the grounds set forth in 18 U.S.C. § 3742 or on any ground whatever, in exchange for the concessions made by the United States in this plea agreement. The defendant also waives his right to challenge his sentence or the manner in which it was determined in any collateral attack, including but not limited to a motion brought under 28 U.S.C. § 2255.

[https://perma.cc/4UF9-SRVA].

125.   *See* Albert W. Alschuler, *Implementing the Criminal Defendant's Right to Trial: Alternatives to the Plea Bargaining System*, 50 U. CHI. L. REV. 931, 1029 (1983) ("Indeed, the agreement to waive a jury was occasionally the product of express bargaining.").

126.   *See* United States v. Booker, 43 U.S. 220, 264 (2005) ("The district courts, while not bound to apply the Guidelines, must consult those Guidelines and take them into account when sentencing.").

127.   *See* Paul J. Hofer, *Federal Sentencing after* Booker, 48 CRIME & JUST. 137, 137 (2019) ("*Booker* empowered judges to reject unsound

F. Concerns with the Guidelines

One substantive concern is that the guidelines seek to impose prison more often, and for longer periods, than many believe necessary.[128] When the guidelines went into effect, there were 49,378 persons in federal prison.[129] Now, more than thirty years later, the number is 175,248, an increase of 255 percent.[130] Three factors have contributed to that increase: more defendants being charged, more of those defendants sentenced to prison, and defendants staying in custody longer.

In 1986, 50,334 defendants were charged with crimes in federal court.[131] That number reached 86,950 in 2018.[132] Whereas forty-eight percent of defendants in 1986 received noncustodial sentences,[133] now less than ten percent avoid

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guidelines. *Booker* has had, however, surprisingly little effect on sentence severity or imprisonment use. Sentencing below guideline ranges increased, but more from a general relaxation of guidelines' restrictions than from reasoned rejection of unsound guidelines. They continue to exert gravitational pull.").

128.　*See* Lynn S. Adelman, *The Tough-on-Crime law Democrats are Overlooking*, WASH. POST (June 30, 2019), https://www.washingtonpost.com /opinions/2019/06/30/theres-another-tough-on-crime-law-democrats-should-focus-their-criticism/ (last visited Apr. 11, 2020) ("The commission established harsh sentencing guidelines and barred judges from putting defendants on probation except in rare instances. Over the next 20 years, the commission regularly amended the guidelines, making them even more severe. The average federal sentence increased from 28 to 50 months . . . .") [https:// perma.cc/QJ29-MHJF].

129.　*Population Statistics*, FED. BUREAU OF PRISONS, https://www.bop.gov /about/statistics/population_statistics.jsp (last updated Apr. 16, 2020) (last visited Apr. 11, 2020) [https://perma.cc/NXT5-3H6F].

130.　*See id.* (showing that the number of inmates has declined twenty percent from a reported high of 219,298 in 2013).

131.　*Bureau of Justice Statistics*, U.S. DEP'T OF JUSTICE, Compendium of Federal Justice Statistics 9, tbl. 1.2 (1986).

132.　*See* U.S. COURTS, U.S. DISTRICT COURTS—CRIMINAL JUDICIAL BUSINESS tbl.D-2 (2018), https://www.uscourts.gov/statistics/table/d-2 /judicial-business/2018/09/30 (last visited Apr. 11, 2020) (detailing the number of criminal defendants charged from September 30, 2014 to September 30, 2018) [https://perma.cc/W4H7-DCBC].

133.　*See* Douglas C. McDonald & Kenneth E. Carlson, *Federal Sentencing in Transition, 1986–90*, FED. JUST. STAT., at 2 (1992), https://www.bjs.gov /content/pub/pdf/fst8690.pdf ("Although this growth in the number of

imprisonment.[134] And with the length of custody terms imposed under current practices, and parole no longer being available, the average custody term served increased from twenty-one to forty-seven months within ten years of the guidelines' inception.[135] It should be noted that the trend may be due, in addition to sentencing policies, to the federal government targeting more dangerous, higher profile offenders for prosecution.[136]

As to direct costs for the greater reliance on imprisonment, the annualized average cost per person imprisoned is $37,449.[137] Some have suggested that it would be cheaper to send inmates to college.[138] The BOP's total appropriation now

convictions had slowed from the 6.4% average annual rate for the period of 1980 to 1985, the likelihood of being sentenced to incarceration rose, from 52% in 1986 to 60% in 1990.") [https://perma.cc/SE8R-GCR8].

134.   *See* 2018 ANNUAL REPORT AND SOURCEBOOK, *supra* note 112, at 61 (listing the percentages of sentencing types for federal offenders).

135.   *See* William J. Sabol & John McGready, *Time Served in Prison by Federal Offenders, 1986-97*, FED. JUST. STAT., at 2 (June 1999), https://static.prisonpolicy.org/scans/bjs/tspfo97.pdf ("Between 1986—the year before implementation of the Sentencing Reform Act—and 1997, imposed prison terms increased from 39 months to 54 months. . . . [O]ffenders entering Federal prison could expect to serve increased from about 21 months, on average, during 1986 to about 47 months during 1997 . . . .") [https://perma.cc/4GQQ-NXDA].

136.   *See New Smart on Crime Data Reveals Federal Prosecutors Are Focused on More Significant Drug Cases and Fewer Mandatory Minimums for Drug Defendants*, U.S. DEP'T OF JUST. (Mar. 21, 2016), https://www.justice.gov/opa/pr/new-smart-crime-data-reveals-federal-prosecutors-are-focused-more-significant-drug-cases-and (last visited Apr. 11, 2020)

> Federal prosecutors are consistently using their discretion to focus our federal resources on the most serious cases and to ensure that we reserve harsh mandatory minimum sentence for the most dangerous offenders. By ensuring fair and proportional sentencing, these policies engender greater trust in our criminal justice system, save federal resources and make our communities more safe.

[https://perma.cc/N62C-ZA6N].

137.   *See* Annual Determination of Average Cost of Incarceration Fee (COIF), 84 Fed. Reg. 63891, 63891–92 (Nov. 19, 2010) (noting that the cost of incarceration fee was $37,499 for federal inmates in Bureau facilities).

138.   *See* Scott Jaschik, *Price of a Year in Jail vs. a Year at Harvard*, INSIDE HIGHER ED. (June 5, 2017), https://www.insidehighered.com/quicktakes/2017/06/05/price-year-jail-vs-year-harvard (last visited Mar. 3, 2020) (observing

exceeds $7 billion a year, increasing from $330 million to $7.5 billion between 1980 and 2016.[139]

The indirect costs of imprisonment terms are just as real but harder to quantify. The indirect costs include lost wages for, and taxes from, the incarcerated person, financial, and emotional hardship on defendants' families, and destabilized communities. Some put the complete cost of imprisonment in the United States, direct and indirect costs, at close to one trillion dollars a year.[140]

Whether guideline-prescribed custody terms are sufficient or excessive is a subjective determination. However, surveys of jurors do indicate that they would impose less prison time than do the guidelines.[141] Also, judges, even when they have the authority to do so, seldom depart upwardly from guideline

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that the state of California's projection for the cost of jail per inmate amounts to $2,000 more than the price of a year's tuition at Harvard University) [https://perma.cc/WJ7P-JTET]. It should be noted the incarceration costs cited in the article are more than those reported by the BOP.

139. *See* NATHAN JAMES, CONG. RESEARCH SERV., R42937, THE FEDERAL PRISON POPULATION BUILDUP: OPTIONS FOR CONGRESS 2 (2016) ("The burgeoning prison population has contributed to mounting operational expenditures for the federal prison system. BOP's appropriations increased more than $7.1 billion from FY1980 ($330 million) to FY2016 ($7.479 billion).").

140. *See* Michael McLaughlin et al., *The Economic Burden of Incarceration in the U.S.* 20 (Instit. for Advancing Justice Res. and Innovation, Working Paper No. AJI072016, 2016), https://www.prisonpolicy.org/scans/iajre/the _economic_burden_of_incarceration_in_the_us.pdf (finding the "aggregate burden of incarceration" to be $1.014 per year) [https://perma.cc/ZA7F-MZDG].

141. *See* James S. Gwin, *Juror Sentiment on Just Punishment: Do the Federal Sentencing Guidelines Reflect Community Values?*, 4 HARV. L. & POL'Y REV. 173, 175 (2010) ("Combining all of the cases, the median juror recommended sentence was only 19% of the median Guidelines ranges and only 36% of the bottom of the Guidelines ranges.").

ranges.[142] When they do depart, it tends to be downward, imposing less prison time than the guidelines suggest.[143]

Also relevant to the appropriateness of prison terms is the question of how much community protection is afforded by confining a given defendant. Some argue imprisonment has little or no impact on crime rates.[144] In contrast, others have found that incarceration rates have a sizable, albeit not exclusive, impact on crime.[145] It is a complicated question with no shortage of theories.[146]

From an intuitive perspective, there seems to be some causal connection between the prison buildup and crime decline. The benefit of the reduction in crime cannot be overstated. The demoralizing effects of crime leading up to the 1980s reforms permeated everyday existence.[147] Adding to the threat was

142.   *Cf. id.* at 181 (noting that sentencing judges have discretion to depart from the guidelines but the guidelines "explicitly disfavor judges' consideration of factors that speak directly to rehabilitation or deterrence, thereby prioritizing retribution").

143.   *See* 2018 ANNUAL REPORT AND SOURCEBOOK, *supra* note 112, tbl.34 (showing the 68.1 percent of the sentences imposed in FY2018 were either at the guideline minimum or lower half of the guideline range).

144.   *See Study Finds Increased Incarceration Has Marginal-to-Zero Impact on Crime*, EQUAL JUST. INITIATIVE (Aug. 7, 2017), https://eji.org/news/study-finds-increased-incarceration-does-not-reduce-crime/ (last visited Feb. 23, 2020) ("More incarceration will not make us safer, a new report by the Vera Institute of Justice concludes, because increased incarceration rates have no demonstrated effect on violent crime and in some instances may increase crime.") [https://perma.cc/7DL9-SRLB].

145.   *See, e.g.*, Steven D. Levitt, *Understanding Why Crime Fell in the 1990s: Four Factors that Explain the Decline and Six that Do Not*, 18 J. ECON. PERSPS. 163, 178 (2004) ("The evidence linking increased punishment to lower crime rates is very strong."); Gary Lafree, *Explaining the Crime Bust of the 1990s*, 91 J. CRIM. L. & CRIMINOLOGY 269, 278 (2000) ("So, without the huge investments in prison beds, the violent crime rate would not have dropped as far or as fast as it has.").

146.   *See, e.g.*, Dara Lind & German Lopez, *16 Theories for Why Crime Plummeted in the US*, VOX, https://www.vox.com/2015/2/13/8032231/crime-drop (last updated May 20, 2015, 3:43 PM) (last visited Mar. 3, 2020) (providing of overview of "16 popular theories for the plummeting crime rate") [https://perma.cc/78AF-PXNW].

147.   A visiting artist's observations of the author's native New York City in 1977 included people walking the street in plastic bags, a rising crime rate, rats, bed bugs, and the town being a mess, in tatters. Keith Richards, Mick

organized crime, including LaCostra Nostra.[148] More punitive sentencing provisions contributed to organized crime figures cooperating with the government, greatly diminishing systemic crime.[149] The end result is that there are thousands of people alive today that, statistically speaking, would not be if crime rates had not changed. The savings in human misery and to taxpayers have been immense.[150]

Since the *Booker*[151] decision interpreting the guidelines as advisory, concerns have increased that sentencing disparity, particularly along racial lines, has grown.[152] Even before *Booker*, however, there were concerns that statutory minimums and the guidelines created their own disparity.[153] In response,

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Jagger (the Rolling Stones), Shattered, Sony/ATV Music Publishing LLC. 1978. *See* THE ROLLING STONES, *Shattered*, *on* SOME GIRLS, (Rolling Stones Records 1978).

148. *See generally* Ronald J. Ostow, *The Mob Against the Ropes: Prosecutors Using New Laws Are Cracking Omerta—the Code of Silence—to Jail Hoodlums. The Mafia is Still an Ominous Criminal Force, but Has Lost Much Power*, L.A. TIMES (Feb. 9, 1991), https://www.latimes.com/archives/la-xpm-1991-02-09-mn-658-story.html (last visited Mar. 3, 2020) [https://perma.cc/K99U-6F6H].

149. *See id.* (describing the effects of the Mafia stronghold across the United States and efforts by law enforcement to break up the Mafia).

150. *See* Kathryn E. McCollister, Michael T. French, Hai Feng, *The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation*, 108 Drug and Alcohol Dependence 98, 100 (2010) (outlining limitations that are common in studies attempting to assign monetary values to the societal costs of crimes).

151. *See* United States v. Booker, 543 U.S. 220, 245 (2005) (declaring that the Sentencing Reform Act of 1984, as modified by the Court's constitutional holding, "makes the [Federal Sentencing] Guidelines effectively advisory").

152. U.S. SENTENCING COMM'N, DEMOGRAPHIC DIFFERENCES IN SENTENCING: AN UPDATE TO THE 2012 BOOKER REPORT 2 (2017) (stating that Black male offenders receive longer sentences than similarly situated White male offenders); *see also* Starr, *supra* note 9, at 1321 (outlining how Black men receive disproportionately longer prison sentences than White male defendants); *see also* Hartley *supra* note 9, at 46 (attributing some of the criticized sentencing disparity to extra-judicial factors, such as application of statutory minimums, prosecutorial charging, and evidentiary decisions).

153. *See* Albert Alschuler, *Disparity: The Normative and Empirical Failure of the Federal Guidelines*, 58 STAN. L. REV. 85, 85 (2005) ("[T]he Federal Sentencing Guidelines have failed to reduce disparity and probably have increased it."); *see also* Press Release, Am. Civil Liberties Union, ACLU

some dispute the data related to disparity.[154] Others argue that disparity is not insidious and should be expected in a system with unique offenses and unique individuals.[155] Yet other observers argue the focus should be on the propriety of individual sentences and that clarity is lost in the aggregate.[156] Moreover, "standardization of unjust sentences does not make them any more just." [157]

So, concerns remain, some based on opinion, others on fact. The determinant system has brought greater transparency to sentencing, and the research function of the United States Sentencing Commission creates a strong foundation for continued learning.[158] But how to address fears that the regime is too harsh, too complicated, too costly, and possibly biased? The answer, again, lies in technologies available now that were not available when the reforms of the 1980s were implemented.[159]

Says Mandatory Minimums Are Discriminatory and Urges Inter-Am. Comm'n to Condemn Unfair Practice (Mar. 3, 2006) ("Mandatory minimum sentences create a system that undermines our notion of justice.").

154.   Patrick A. Langan, *No Racism in the Justice System,* 117 THE PUB. INT. 48, 48 (1994) ("Racial bias studies never completely take into account all of the legitimate factors that determine how a case is handled.").

155.   *See* Richard A. Bierschbach & Stephanos Bibas, *What's Wrong With Sentencing Equality?*, 102 VA. L. REV. 1447, 1451 (2016) (arguing that the language of equality and disparity obscures the more positive ways one can understand sentencing differences).

156.   *See id*. ("[I]n many other areas of law and policy, variation is considered neutral or even a positive good.").

157.   E-mail from George V. Doerrbecker, Retired Deputy Chief U.S. Prob. Officer, to author (Jan. 7, 2020) (on file with author).

158.   *See* Carey *supra* note 81, at 568–69 (describing how California and Illinois have taken "steps to eliminate sentencing disparity and to provide uniformity of sentencing" by switching to a determinant system).

159.   *See* Marius J.A. Duker & Arno R. Lodder, *Sentencing and Information Management: Consistency and the Particularities of a Case*, 1999 INT'L CONF. ON ARTIFICIAL INTELLIGENCE & L. 100, 100 ("The use of IT and AI to support sentencing decisions in order to make them more consistent, deserves a lot of attention nowadays.").

V. The Future

There are two areas ripe for improvement in sentencing. First is the sentence itself. As discussed previously, there is persistent criticism of sentences being unfair and ineffective.[160] Being able to resolve those criticisms would be a significant accomplishment that has eluded the federal criminal justice system.[161] Another area for improvement is "the how." Making the process faster and giving people the right kinds of information, exactly when and how they need it, would improve the sentencing experience even without changing the sentence itself.[162]

A. Artificial Intelligence

There are a series of technologies, collectively referred to as Artificial Intelligence (AI), that can help in both areas of interest.[163] AI mimics how humans think and learn.[164] It is particularly good at integrating, analyzing, and applying large amounts of data.[165] Generally, AI brings more consistency to

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160. *See* Press Release, Am. Civil Liberties Union, *supra* note 153 (criticizing current sentencing practices as undermining justice).

161. *See id.* (stressing that judges should be afforded discretion to avoid unfair outcomes).

162. *See* Duker & Lodder *supra* note 159, at 100 ("[I]nformation management and electronic versions of case files could help in providing especially the judge with more relevant information.").

163. *See* Virginia Dignum, *What We Talk About When We Talk About Artificial Intelligence*, MEDIUM (July 23, 2018), https://medium.com /@virginiadignum/what-we-talk-about-when-we-talk-about-artificial-intelligence-13423a294160 (last visited Feb. 3, 2020) (providing a brief introduction to the subject of artificial intelligence) [https://perma.cc/4NLR-MDTU?type=image].

164. *See id.* ("[T]he ultimate goal of AI is to develop computer systems that are able to simulate human-like intelligence."); *see generally* TOM MARKIEWICZ & JOSH ZHENG, GETTING STARTED WITH ARTIFICIAL INTELLIGENCE: A PRACTICAL GUIDE TO BUILDING ENTERPRISE APPLICATIONS (Nicole Tache ed., 2017) (providing an in-depth discussion of artificial intelligence).

165. *See How Actual Intelligence is Transforming Artificial Intelligence (AI)*, FOCUS INV. BANKING (Mar. 26, 2018), https://focusbankers.com/actual-intelligence-transforming-artificial-intelligence-ai/ (last visited Feb. 3, 2020) (highlighting the potential utility artificial intelligence could have for business) [https://perma.cc/7Q2W-BKD2].

tasks than do humans.[166] Its logic can be made more transparent and easier to adjust than human thinking.[167] In fact, it offers "far greater clarity and transparency about the ingredients and motivations of decisions, and hence far greater opportunity to ferret out discrimination," a major concern in sentencing.[168]

The utility of AI is only increasing with the growth in "big data."[169] It contributes more than a trillion dollars a year to the economy.[170] It already "improves how we diagnose and treat illnesses, grow our food, manufacture and deliver new products, manage our finances, power our homes, and traverse our roads."[171] It is used in criminal justice to, among other things,[172] deter and detect the crime of credit-card fraud. Companies like PayPal use the technology to screen millions of transactions at a time with search parameters shaped by what was learned from previous investigations and the experience of industry and

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166.   *See id.* (describing the myriad potential uses AI offers in various industries).

167.   *See* Jon Kleinberg et al., *Discrimination in the Age of Algorithms*, 10 J. LEGAL ANALYSIS 113, 163 (2018) (arguing that algorithmic logic can be more easily understood than human thinking).

168.   *See id.* (arguing that this transparency is a "massive opportunity" for those who wish to reduce discriminatory behavior).

169.   *See* Steve Lohr, *The Age of Big Data*, N.Y. TIMES, Feb. 11, 2012, at 11 ("There is a lot more data, all the time, growing at fifty percent a year . . . . Data is not only becoming more available but also more understandable to computers. At the forefront are the rapidly advancing techniques of artificial intelligence.").

170.   *See* Press Release, Gartner Inc., Gartner Says Global Artificial Intelligence Business Value to Reach $1.2 Trillion in 2018 (Apr. 25, 2018) ("Global business value derived from artificial intelligence (AI) is projected to total $1.2 trillion in 2018, an increase of seventy percent from 2017, according to Gartner, Inc. AI-derived business value is forecast to reach $3.9 trillion in 2022.").

171.   Office of Sci. & Tech. Policy, *White House Hosts Summit on Artificial Intelligence for American Industry*, WHITEHOUSE.GOV (May 10, 2018), https://www.whitehouse.gov/articles/white-house-hosts-summit-artificial-intelligence-american-industry/ (last visited Feb. 3, 2020) [https://perma.cc/CD8G-2PAN].

172.   *See* Duker & Lodder, *supra* note 159, at 106 ("Because of his position we believe the judge needs to be supplied with more and better structured information instead of offering him standardized applications.").

law enforcement experts.[173] Visa estimates that its own AI-based fraud-detection system has saved $25 billion.[174] AI technology is only expected to become more ubiquitous.[175] In 2019, nearly thirty percent of businesses were already using AI and most executives expected that AI would transform their company within three years.[176]

AI does come with challenges, however. Often AI is misunderstood. Because of its technical nature and the proliferation of technojargon,[177] many people rely on the Hollywood portrayal of AI. That portrayal tends to be one of an omniscient cyber-entity that alternates between trying to save

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173. *See* Christopher Rigano, *Using Artificial Intelligence to Address Criminal Justice Needs*, 280 NAT'L INST. JUST. J. 37, 38 (2019) ("Internet companies like PayPal stay ahead of fraud attempts by using volumes of data to continuously train their fraud detection algorithms to predict and recognize anomalous patterns and to learn to recognize new patterns.").

174. *See* Press Release, Visa Inc., Visa Prevents Approximately $25 Billion in Fraud Using Artificial Intelligence (June 17, 2019) (describing Visa's "neural networks" modeled after the human brain to power AI and identify possible fraud).

175. *See* Maggie Panos, *Here's the Deal With Vision, the Avenger You May Have Forgotten About*, POPSUGAR (May 6, 2016), https://www.popsugar.com /entertainment/Who-Vision-From-Avengers-37369833 (last visited Feb. 3, 2020) (describing Ultron, "an advanced, intangible network of artificial intelligence with a desire to wipe out the human race") [https://perma.cc/9K49-LS7U]; *see also* Prajakta Hebbar, *Marvel Comics Visionary Stan Lee Imagined A World Full of Possibilities, Including an AI Sidekick*, ANALYTICS INDIA MAG. (Nov. 13, 2018), https://analyticsindiamag.com/marvel-visionary-stan-lee-imagined-ai-sidekick-jarvis/ (last visited Feb. 3, 2020) (outlining the role J.A.R.V.I.S., Iron Man's AI sidekick, played in the Marvel Cinematic Universe) [https://perma.cc/FQK4-TXY8].

176. *See* Gil Press, *9 Indicators of the State of Artificial Intelligence (AI)*, FORBES (June 9, 2019), https://www.forbes.com/sites/gilpress/2019/06/09/9-indicators-of-the-state-of-artificial-intelligence-ai-may-2019/#705cb814577f (last visited Feb. 3, 2020) (providing statistics on business leaders' perception of the state of AI) [https://perma.cc/Q8UU-4MN6].

177. *See* Bernard Marr, *The Key Definitions of Artificial Intelligence (AI) That Explain Its Importance*, FORBES (Feb. 14, 2018), https://www.forbes.com /sites/bernardmarr/2018/02/14/the-key-definitions-of-artificial-intelligence-ai-that-explain-its-importance/#443f8ea84f5d (last visited Feb. 3, 2020) (noting that the definition of AI seems to vary depending on the entity providing the definition) [https://perma.cc/EY6K-VVGK].

and kill humans.[178] The reality is quite different. There are practical and capacity limits to what AI can do.[179] In addition, we have the ability—and the obligation—to limit AI based on ethical, legal, and economic considerations.[180]

As to AI's intentions, its goals are our goals. We code it, we task it, and we point it to the data it will use.[181] The subjugated nature of AI to human use and control has researchers suggesting that it be more accurately called "Augmented Intelligence," meaning that it enhances—not replaces—human interests and abilities.[182] One example of the supportive, rather than directive, role of AI is the use of spelling and grammar check now common in word processing applications. The technology does not determine what is written, rather it makes

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178.   *See* Rachel Boey, *An Examination of Artificial Intelligence's Portrayal in Avengers: Age of Ultron*, DIGITAL PATMOS (Nov. 22, 2017), https://digitalpatmos.com/vol1issue1/2017/11/22/rachel/ (last visited Feb. 3, 2020) (discussing the portrayal of AI in Avengers: Age of Ultron) [https://perma.cc/WVZ8-UH5N].

179.   *See* Margaret Rouse, *Artificial Intelligence*, TECHTARGET, https://searchenterpriseai.techtarget.com/definition/AI-Artificial-Intelligence   (last updated Apr. 2020) (last visited Feb. 3, 2020) ("The concept of the Singularity and a world where the application of superintelligence to humans or human problems—including poverty, disease and mortality—still falls within the realm of science fiction.") [https://perma.cc/KUH7-MQ4F].

180.   *See* Eduardo Magrani, *New Perspectives on Ethics and the Laws of Artificial Intelligence*, 8 INTERNET POL'Y REV. 1, 5–14 (2019) ("Also, the more adaptable the artificial intelligence programmes become, the more unpredictable are their actions, bringing new-perspectives-ethics- risks. This makes it necessary for developers of this type of programme to be more aware of the ethical and-laws-artificial-intelligence legal responsibilities involved in this activity.").

181.   *See* Rouse, *supra* note 179 (providing an overview for the development of AI, its various uses, and the challenges it poses).

182.   *See id.* ("Some researchers and marketers hope the label augmented intelligence, which has a more neutral connotation, will help people understand that most implementations of AI will be weak and simply improve products and services.").

suggestions designed to improve our writing.[183] We decide whether to accept those suggestions.[184]

AI, like humans, can learn from its experiences and outcomes.[185] In fact, errors should be expected. That is why the system operation and outputs need to be supervised by humans. However, errors are not a problem in the AI context, they are the fodder for improvement.[186] Moreover, AI has tools to help it proactively identify problems in its data or analysis.[187] Take, as illustration, an AI application that predicts recidivism. The system can be linked with real-time outcome data and information related to programs the defendant was exposed to while in custody and under probation supervision.[188] While

183. *See Forget Spell Check: Microsoft Word Uses AI to Improve Writing Style*, NET IMPERATIVE (May 8, 2019), http://www.netimperative.com/2019/05/forget-spell-check-microsoft-word-uses-ai-to-improve-writing-style/ (last visited Feb. 3, 2020) ("Now Microsoft is adapting Ideas to Microsoft Word, offering ideas to enhance each user's own writing style.") [https://perma.cc/QB8T-M5HB].

184. *See id.* (describing Ideas, an artificial intelligence that looks closely at language, suggesting more appropriate words for concise, readable, and inclusive writing). The author acknowledges that spell and grammar check are invaluable resources to him.

185. *See* Rouse, *supra* note 179 (discussing the programming mechanisms of AI that allow it to acquire data and create rules called algorithms, which allow it to turn the data into actionable information).

186. *See* Dom Galeon, *New Algorithm Lets AI Learn from Mistakes, Become a Little More Human*, FUTURISM (Mar. 2, 2018), https://futurism.com/ai-learn-mistakes-openai (last visited Feb. 3, 2020) ("In any case, as OpenAI's simulations demonstrated, [the algorithm OpenAI developed] can be quite helpful at 'encouraging' AI agents to learn even from their mistakes . . . the major difference being that AIs don't get frustrated like the rest of us feeble folks.") [https://perma.cc/99GZ-LB6S].

187. *See* Tom Abate, *UMass Amherst Develop Algorithms that Train AI to Avoid Specific Misbehaviors*, STAN. NEWS (Nov. 21, 2019), https://news.stanford.edu/2019/11/21/Stanford-helps—train-ai-not-misbehave/ (last visited Feb. 3, 2020) ("Robots, self-driving cars and other intelligent machines could become better-behaved thanks to a new way to help machine learning designers build AI applications with safeguards against specific, undesirable outcomes such as racial and gender bias.") [https://perma.cc/7DQV-3XVM].

188. *See id.* ("But as AI starts handling sensitive tasks, such as helping pick which prisoners get bail, policy makers are insisting that computer scientists offer assurances that automated systems have been designed to

historically that data was too voluminous and varied for human processing, it goes to AI's strengths.[189]

If a defendant's outcome is different from what was projected by the AI, the system can identify that and learn from it, optimizing its predictions moving forward.[190] Maybe a different result was due to the defendant's involvement in a promising new treatment program or changes in the defendant's living situation.[191] Either way, the new information can be incorporated into the AI's future predictions. Also built into the AI analysis could be filters for data or a type of analysis that may be problematic. The system can identify information that may be tainted by racism, or other bias. The system could exclude the suspect information from analysis and subject it to separate examination—so, it too, can be learned from.

B. Concerns with Artificial Intelligence

AI can be programmed to teach itself, to a degree. For the most part it comes out of the box—ironically—unintelligent.[192] It must be trained by humans so it knows how to process the

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minimize, if not completely avoid, unwanted outcomes such as excessive risk or racial and gender bias.").

189.   *See* Rouse, *supra* note 179 ("While the huge volume of data that's being created on a daily basis would bury a human researcher, AI applications that use machine learning can take that data and quickly turn it into actionable information.").

190.   *See id.* (describing the learning process of AI in detail).

191.   *See* Thomas H. Cohen, Christopher T. Lowenkamp, & Scott W. VanBenschoten, *Does Change in Risk Matter?*, 15 CRIMINOLOGY & PUB. POL'Y 263, 263–96 (2016) (discussing one of the most effective methods for reducing criminal behavior, a treatment paradigm that employs actuarial risk assessment instruments so that officers may determine which factors, when changed, will reduce the likelihood for recidivism).

192.   *See* Adriana Braga & Robert K. Logan, *The Emperor of Strong AI Has No Clothes: Limits to Artificial Intelligence*, INFO., Nov. 27, 2017, at 2, https://www.mdpi.com/2078-2489/8/4/156/htm (last visited Feb. 3, 2020) ("[A]rtificial intelligence (AI) or its stronger version artificial general intelligence (AGI) can never rise to the level of human intelligence because computers are not capable of many of the essential characteristics of human intelligence, despite their ability to out-perform us as far as logic and computation are concerned.") [https://perma.cc/2Y5H-YREA].

data it will encounter. That training process is one of the reasons critics have concerns about using AI in criminal justice.[193]

The thinking goes that if our current understanding of crime is incomplete,[194] which it is, or tainted by bias, unconsciously or otherwise, those deficiencies will be embedded in the AI via training. The negative effect will be exacerbated as AI processes historical data that itself is presumably marred by ignorance and bias.[195] This point, or an ancillary one that AI simply does not work, was highlighted in an experiment conducted by the American Civil Liberties Union (ACLU).[196]

The ACLU used AI facial recognition software to compare 25,000 police mugshots to the 535 members of Congress,[197]

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193. *See* Brian Charles, *NYPD's Big Artificial-Intelligence Reveal*, GOVERNING (Mar. 26, 2019), https://www.governing.com/topics/public-justice-safety/gov-new-york-police-nypd-data-artificial-intelligence-patternizr.html (last visited Feb. 3, 2020) ("Any predictive policing platform runs the risks of perpetuating disparities because of the over-policing of communities of color that will inform their inputs. To ensure fairness, the NYPD should be transparent . . . and allow independent researchers to audit these systems before they are tested on New Yorkers.") [https://perma.cc/DBP5-AZG7].

194. *See* John Gramlich, *5 Facts About Crime in The U.S.*, PEW RES. CTR. (Oct. 17, 2019), https://www.pewresearch.org/fact-tank/2019/10/17/facts-about-crime-in-the-u-s/ (last visited Feb. 3, 2020) ("Most crimes are not reported to police, and most reported crimes are not solved.") [https://perma.cc /4ZAN-HYSR].

195. *See* Florian Dietz, *Why Your AI Might Be Racist and What To Do About It*, TOWARDS DATA SCI. (Nov. 9, 2019), https://towardsdatascience.com /why-your-ai-might-be-racist-and-what-to-do-about-it-c081288f600a (last visited Feb. 3, 2020) ("It's a general principle of training an AI: garbage in, garbage out.") [https://perma.cc/AWU7-C6SJ].

196. *See* Kat Tenbarge, *Amazon Responds to ACLU's Highly Critical Report of Its Rekognition Software*, INVERSE (July 26, 2018), https:// www.inverse.com/article/47456-aclu-calls-for-moratorium-on-government-use-of-face-surveillance-technology (last visited Feb. 3, 2020) (describing the ACLU's experiment on Amazon's Rekognition program, a facial recognition software that incorrectly matched 28 members of Congress to mugshots) [https://perma.cc/USN4-SXXE].

197. *See* Jacob Snow, *Amazon's Face Recognition Falsely Matched 28 Members of Congress with Mugshots*, ACLU (July 26, 2018, 8:00 AM), https:// www.aclu.org/blog/privacy-technology/surveillance-technologies/amazons-face-recognition-falsely-matched-28 (last visited Feb. 3, 2020) (describing a

producing 28 false positive matches—forty percent of which involved minorities.[198] The seller of the face-recognition software countered that the ACLU did not use the application correctly, relied on settings (a confidence level) too low for the task, and applied inadequate training to the project.[199]

Another misunderstanding about AI is that it is inseparable from its constituent elements. There have been several reports suggesting AI has been used, with poor results, to make bail and sentencing decisions.[200] First and foremost, there are no AI courts nor any computer judges.[201] Bail and sentencing decisions are only made by humans.[202]

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study completed by the ACLU which shows deficiencies in Amazon's facial recognition technology) [https://perma.cc/TFR9-LLL7].

198.   Presumably, the remaining ninety-five percent of the 535 members of Congress were not misidentified as being among the mugshot photos.

199.   *See* Tenbarge, *supra* note 196 (detailing what Amazon claims was incorrect in the ACLU's study).

200.   *See* 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/ (last visited Feb. 3, 2020) (describing how courts use algorithms to determine a defendant's risk and describing several consequences of this practice) [https://perma.cc/M5P3-WYGX]; Karen Hao, *AI Is Sending People to Jail—and Getting It Wrong*, MIT TECH. REV. (Jan. 21, 2019), https://www.technologyreview.com/s/612775/algorithms-criminal-justice-ai/ (last visited Feb. 3, 2020) (describing criminal risk assessment algorithms and issues associated with using them in sentencing) [https://perma.cc/J7TY-ULXT]; Noel L. Hillman, *The Use of Artificial Intelligence in Gauging the Risk of Recidivism*, A.B.A. (Jan. 1, 2019), https://www.americanbar.org/groups/judicial/publications/judges_journal/2019/winter/the-use-artificial-intelligence-gauging-risk-recidivism/ (last visited Feb. 3, 2020) ("Yes, there is an eerie similarity between the storyline in Minority Report and judicial reliance on AI at sentencing.") [https://perma.cc/GJ3Z-RMNJ].

201.   *See* Stephanie Condon, *AI in the Court: Are Robot Judges Next?*, ZDNET (Jan. 22, 2020, 6:00 PM), https://www.zdnet.com/article/ai-in-the-court-are-robot-judges-next/ (last visited Feb. 3, 2020) (describing technological advances that may sound like a "digital judge" but standing for the proposition that there are no digital courthouses or judges in the United States) [https://perma.cc/DL7N-4D6A].

202.   *See* Laura Reynolds, *The Role of Judges in Criminal Cases*, CHRON, https://work.chron.com/role-judges-criminal-cases-6696.html (last visited Feb. 3, 2020) (defining the role of the judge in the sentencing phase) [https://perma.cc/Q2HE-L36G].

Also, if you go deeper than the headlines, the concern is not about AI directly.[203] Instead, the issue is algorithms which are used to predict defendants' ongoing danger to the community.[204] Algorithms are steps or formulas to process information and solve problems.[205] Algorithms predate computers by a millennium and have been used in various capacities in criminal justice for nearly one hundred years.[206] AI uses algorithms but is not an algorithm itself.[207] The difference is more than semantics when you are trying to isolate and resolve issues of concern.[208]

The propriety of assessing recidivism risk at sentencing is a policy decision.[209] For sentencing, Congress has resolved the issue in the affirmative[210], requiring that judges take ongoing criminal risk into account.[211] Whether algorithms are reliable

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203. *See* Hao, *supra* note 200 (noting concerns not about AI itself, but issues with using certain algorithms that rely on historical data).

204. *See id.* (describing the concerns with using the algorithm to predict recidivism rates).

205. *See* Margaret Rouse, *Algorithm*, TECHTARGET, https://whatis.techtarget.com/definition/algorithm (last updated Mar. 2019) (last visited Feb. 3, 2020) (defining algorithm) [https://perma.cc/5QX3-CM5L].

206. *See* ADMIN. OFFICE OF THE U.S. COURTS PROB. & PRETRIAL SERVS. OFFICE, AN OVERVIEW OF THE FEDERAL POST CONVICTION RISK ASSESSMENT 4–5 (2018) (documenting history of using algorithms in criminal justice systems).

207. *See* Berend Berendsen, *What's the Difference Between Artificial Intelligence, Machine Learning and Algorithms?*, WIDGET BRAIN (Nov. 15, 2019), https://widgetbrain.com/difference-between-ai-ml-algorithms/ (last visited Feb. 3, 2020) (explaining the difference between AI, machine learning, and algorithms) [https://perma.cc/EZ8X-USQB].

208. *See* Hao, *supra* note 200 (focusing not on concerns with using AI itself, but on concerns with the data that goes into the algorithm).

209. *See* 18 U.S.C. § 3553(a)(2)(C) (2018) (showing that Congress thought judges should consider when sentencing, the risk that the defendant would commit more crimes).

210. *See id.* (requiring judges to take recidivism risk into account in sentencing).

211. Assessments of criminogenic risk influence the type, amount and timing of rehabilitative programming afforded a defendant while imprisoned and while supervised in the community. Risk assessment tools like those used by federal probation are dynamic and a defendant's risk level, and in turn likelihood to return to prison, through reduced contact with anti-social peers.

depends on the instrument.[212] The most accurate instruments have a strong theoretical basis, are backed by robust empirical study, validated, and periodically revalidated for the specific task for which it is assigned.[213] These instruments tend to not only be more predictive than other instruments but more predictive than professional judgement alone.[214] Consequently, there is an argument that sentencing could be enhanced if informed by reliable algorithms.[215]

Nonetheless, concerns persist that algorithms could perpetuate, even worsen, racial bias.[216] Quality instruments address the bias concerns and show outputs and validation by race and other factors of concern.[217] For example, a study of the PCRA, the instrument developed and validated for purposes of post-conviction supervision of federal defendants, found that "application of well-established principles of psychological science revealed little evidence of test bias for the PCRA—the instrument strongly predicts arrest for both Black and White offenders and a given score has essentially the same meaning—i.e., same probability of recidivism."[218]

The evolutionary nature of the tools and the important social issues we ask them to help us with understandably

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212.   *See* Jennifer Skeem & Christopher T. Lowenkamp, *Risk, Race, And Recidivism: Predictive Bias and Disparate Impact*, 54 CRIMINOLOGY 1, 37 (2016) (explaining the differences between poor and good quality instruments).

213.   *See id.* (explaining what makes a quality instrument).

214.   *See* SARAH PICARD-FRITSCHE ET AL., DEMYSTIFYING RISK ASSESSMENT 11–12 (2017) (explaining that data-driven tools can improve decision making).

215.   *See* Skeem & Lowenkamp, *supra* note 212 ("To be clear, we are not offering a blanket endorsement of the use of risk assessment instruments to inform sentencing.").

216.   *See* Beth Schwartzapfel, *Can Racist Algorithms Be Fixed?*, THE MARSHALL PROJECT (July 1, 2019), https://www.themarshallproject.org/2019/07/01/can-racist-algorithms-be-fixed (last visited Feb. 3, 2020) (discussing a "simple" theoretical instrument, using static risk factors only, and that was not used operationally) [https://perma.cc/QGX5-ZRZ6].

217.   *See* Skeem & Lowenkamp, *supra* note 212 (taking the position that well-made instruments can address concerns of racial bias).

218.   *Id.*

produce questions and criticisms.[219] A single report or study alone is not enough to provide a definitive assessment of the technology. Consequently, replication of study results is critical to securing a firm understanding.[220]

Another very important issue related to use of algorithms, and that would also apply to AI, is transparency.[221] The law related to defendants' due process rights relative to use of algorithms and AI at sentencing is still forming.[222] Presumably, due process will require some degree of disclosure of source code and validation materials. Placing all operating information related to AI and algorithms in a "black box" would create problems, not just from a due-process perspective but for the effectiveness of the technology as well.[223] Black boxes will undermine trust in AI and algorithm outputs.[224] Not allowing interested parties to examine the technology will deny system administrators access to the very people who could give them the most valuable feedback. Moreover, no one benefits from a

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219. *See generally* Anthony Flores, Kristin Bechtel & Christopher Lowenkamp, *False Positives, False Negatives, and False Analyses: A Rejoinder to "Machine Bias: There's Software Used Across the Country to Predict Future Criminals. And It's Biased Against Blacks.,"* 80 FED. PROB. J. 38 (2016) (responding to social criticism from a report that claimed one system of algorithms showed bias against Black defendants).

220. *See id.* at 38 ("We think ProPublica's report was based faulty statistics and data analysis, and that the report failed to show that the COMPAS itself is racially biased, let alone that other risk instruments are biased.").

221. *See* John Villasenor & Virginia Foggo, *Algorithms and Sentencing: What Does Due Process Require?*, BROOKINGS (Mar. 21, 2019), https://www.brookings.edu/blog/techtank/2019/03/21/algorithms-and-sentencing-what-does-due-process-require/ (raising the issue of how much transparency into the details of the algorithms should criminal defendants receive) [https://perma.cc/689R-G4WA].

222. *See id.* (noting many questions and concerns that still have to be addressed by the use of AI in sentencing).

223. *See* Flores, Bechtel & Lowenkamp, *supra* note 219 (standing for the proposition that criticism of algorithms leads to more effective instruments).

224. *See* Vyacheslav Polonski, *People don't trust AI—here's how we can change that*, THE CONVERSATION (Jan. 9, 2018, 8:12 AM), http://theconversation.com/people-dont-trust-ai-heres-how-we-can-change-that-87129 (last visited Feb. 3, 2020) (stating that a lack of transparency in algorithms contributes to distrust in AI) [https://perma.cc/7PQH-3EDZ].

defect going undetected—especially one that could result in a defendant being given an inappropriate sentence.

Those interests will have to be balanced against the needs for security[225] and property rights of proprietors of the AI application and related algorithms. Development of AI and algorithms costs time and money.[226] That investment could be lost by companies if their source code became publicly available.[227] One suggestion is to require disclosure only to auditors or certifying officials.[228] However, that may not satisfy interested parties, nor adequately address due process concerns. Another idea is to require AI and algorithm outputs to be sufficiently detailed as to the factors considered and reasons for whatever recommendation is made by the technology.[229] The problem is that if someone has cause to question the algorithm, it would likely have cause to question its entire output—explanation included.

It is possible that AI and algorithms could become so prolific that defendants, or at least defense attorneys, will have their

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225.   There is evidence that some criminals, with knowledge how the criminal justice system operates, will manipulate that information to their own advantage. *See* Danielle Woodward, *Queens Lawyer Lied In Plot To Reduce Client's Sentence: Feds*, PATCH (Mar. 26, 2018, 2:27 PM), https://patch.com/new-york/foresthills/queens-lawyer-lied-plot-reduce-clients-sentence-feds (last visited Feb. 3, 2020) ("The Forest Hills lawyer allegedly fudged his client's addictive past to get him into a rehab program that would cut down his prison time.") [https://perma.cc/ZRY2-THLS].

226.   *See* David Coveney, *How Much Does Code Cost?*, INTERCONNECT/IT (June 1, 2008), https://interconnectit.com/news/2008/06/01/how-much-does-code-cost/ (last visited Feb. 3, 2020) (explaining the time and money investment required to code) [https://perma.cc/T8AF-JP7H].

227.   *See* Kartik Hosanagar & Vivian Jair, *We Need Transparency in Algorithms, But Too Much Can Backfire*, HARV. BUS. REV. (July 23, 2018), https://hbr.org/2018/07/we-need-transparency-in-algorithms-but-too-much-can-backfire (last visited Feb. 3, 2020) (examining the line between promoting transparency and allowing companies to realize the full potential of their intellectual property) [https://perma.cc/HBV3-QC7E].

228.   *See id.* ("Some lawmakers have proposed a compromise, suggesting that the source code be revealed to regulators or auditors in the event of a serious problem, and this adjudicator will assure consumers that the process is fair.").

229.   *See id.* (stating that transparency can build trust in certain situations, but that it could cost businesses money or opens it to exploitation).

own versions of the technology. That will mean judges will have to preside over a battle of the algorithms or AI systems. Not an efficient option.

The seemingly unavoidable answer is engagement and transparency.[230] Clearly, both due process and property rights will have to be balanced. It will be a problem from a societal perspective to infringe on property rights and possibly prevent investments for future improvement of AI. It will take some ingenuity but there must be a way to ensure defendants are offered adequate understanding of the system influencing the sentence they receive, while adequately protecting property rights and securing the system.[231] It behooves advocates and critics alike of the technology to work together and find an appropriate solution.

C. Benefits of Artificial Intelligence

AI, notwithstanding unresolved legal issues, is a very viable tool to enhance sentencing. In terms of improving the sentencing decision itself, AI can provide the court and the parties more information with which to contextualize the sentencing decision. The most important document at sentencing is the presentence report prepared by a probation officer for the court.[232] The report focuses exclusively on the defendant and federal offense of conviction.[233]

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230. *See* Polonski, *supra* note 224 (explaining why people are reluctant to trust AI and proposes a way to change its perception).

231. *See* Jim Mcdonough, *How Companies Can Provide Security Transparency to Customers and Prospects*, THREAT STACK (June 21, 2017), https://www.threatstack.com/blog/how-companies-can-provide-security-transparency-to-customers-and-prospects (last visited Feb. 3, 2020) (providing several ideas pertaining to how companies can provide security transparency to their customers) [https://perma.cc/HA8Z-YNRT].

232. *See* CTR. ON JUVENILE & CRIMINAL JUSTICE, THE HISTORY OF THE PRESENTENCE INVESTIGATION REPORT 7 (2008), http://www.cjcj.org/uploads/cjcj/documents/the_history.pdf ("[T]he PSI remains the most influential document in the sentencing of criminal defendants.") [https://perma.cc/T5S3-8CFW].

233. *See id.* at 3–4 (describing offense-based reports).

Historically, little or no information was provided in relation to other similarly situated defendants, in part because the information was not readily available.[234] The guidelines only provide insights into similarities across cases based on the Commission's assessment of the severity of federal offenses and criminal histories alone.[235] The guidelines do not take into account defendants' personal histories, and group together offenses with markedly different statutory violations and prior criminal conduct to establish offense levels and criminal history categories.[236]

With AI, every presentence report can be scanned and parsed based on relevant sentencing factors not just related to the federal offense and prior record but personal and family information as well. The data does not have to be restricted to current cases and can include the millions of reports completed in previous years and electronically stored by the United States Probation and Pretrial Services System.[237] Further, probation authorities have information on any sentences already imposed, and defendants' adjustment to prison and supervision, and whether they satisfied restitution, and any other sanction.[238]

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234.   *See id.* at 2–3 (describing offender-based reports).

235.   *See Federal Sentencing: The United States Sentencing Guidelines*, FED. DEFENDERS N.Y., https://federaldefendersny.org/information-for-client-and-families/federal-sentencing.html (last visited Feb. 2, 2020) [hereinafter *Federal Sentencing*] ("The Guidelines are set out in a chart, which has two parts: (1) the offense level and (2) prior criminal history category.") [https://perma.cc/95DS-7AXZ].

236.   *See id.* (explaining that "[t]he criminal history category is calculated by giving 'points' to each prior conviction"). For example, depending on the circumstances, a drug offense, robbery offense and other offenses could have the same offense level. *See* U.S. SENTENCING GUIDELINES MANUAL § 2A–C (U.S. SENTENCING COMM'N 2018) (providing the framework for calculating the number of points assigned to the offense at issue). Defendants with a different number of arrests, convictions and sentences could still be in the same criminal history category. *See id.* § 4 (providing the framework for calculating the number of points assigned to a defendant's past criminal offenses).

237.   *See Probation and Pretrial Services-Mission*, *supra* note 27 (noting that United States Probation and Pretrial Services "gather[s] and verif[ies] information about persons who come before the courts").

238.   *See id.* (same).

The consolidated data can be made searchable so that judges, attorneys, defendants, and probation officers can gather information on whatever specific issue is relevant. As an illustration, take a case where the defendant has unusual family circumstances, such as being the sole caretaker for young, special-needs children. With the AI data, the judge could determine the extent such circumstances influenced other sentences imposed. The judge can also determine how those defendants fared after sentencing. The variation, sentencing disparity, that has for so long been considered the bane of the system, can now offer a natural laboratory to see what impact the variation had on outcomes.

For data reliability purposes, AI could offer links to the exact case language.[239] The technology can even support an identification protocol to mask the names of previous defendants for privacy purposes.[240] Again, none of this information would be binding on the court, parties, or the Sentencing Commission, but it would undoubtedly be useful.

AI could also streamline transfer of data related to the sentence to the Sentencing Commission for research and reporting.[241] Since the data could be shared in other formats that judges and others find useful, it will be easier to identify any accuracy problems and allow the information to be used more readily.

The flexibility of the process is important because the more the data is used and reviewed, the more likely any data quality problems will be detected.[242] This, in turn, will help the Commission with the reports it submits to Congress and the public. Moreover, it will help judges, through automated reconciliation, to know that data about the sentences they

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239.   *See* Rouse, *supra* note 179 (noting that AI can process large volumes of "data quickly and turn it into actionable information").

240.   *See How Actual Intelligence is Transforming Artificial Intelligence (AI)*, *supra* note 165 (providing information about the capabilities of AI and stating that "[i]f you can outsource a task, you can probably automate it").

241.   *See* Rouse, *supra* note 179 (emphasizing that AI can process data much more quickly than humans can).

242.   *See id.* (describing the learning and self-correction processes of AI).

impose are being correctly reported to, and by, the Sentencing Commission.

AI can also improve the procedures surrounding sentencing. Presently, presentence reports contain data from multiple sources that are manually assembled by probation officers.[243] The work is time consuming, usually taking ninety days.[244] Those ninety days can be agonizing for a defendant and his or her family, not knowing what to expect at sentencing. The Supreme Court has noted that a prolonged wait for sentence has a "corrosive impact."[245] There have been a high number of suicides among pretrial and presentence defendants.[246] There are likely many factors contributing to that problem. Even if the stress of waiting on sentencing is not one of them, it surely is not helping the situation.

AI can both speed up the presentence process and provide defendants and family members information to better help them prepare for sentencing. The speed can come from AI's ability to assemble information from multiple sources, now manually gathered.[247] The information includes charging and plea documents from the court record, prior record information from law enforcement and other courts, an interview with the

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243.   *See generally* OFFICE OF PROBATION & PRETRIAL SERVS., PRESENTENCE INVESTIGATION REPORT (2006), http://cdn.ca9.uscourts.gov/datastore/library /2013/02/26/Horvath_presentence.pdf (outlining a probation officer's responsibilities in compiling a presentence investigation report) [https:// perma.cc/KU64-PW7A].

244.   *See Federal Sentencing*, *supra* note 235 ("Typically, will take place ninety days after a guilty plea or guilty verdict.").

245.   Santobello v. New York, 404 U.S. 257, 261 (1971).

246.   *See* James M. Byrne, *New Defendants, New Responsibilities: Preventing Suicide Among Alleged Sex Offenders in the Federal Pretrial System*, 73 FED. PROB. J., Sept. 2009, at 83 (noting that there is a higher risk of suicide among "sex defendants on pretrial supervision at the federal level"); Maria Cramer, *A Courtroom Suicide Shows the Court's Unpreparedness to Deal with Mentally Ill Defendants*, BOS. GLOBE (Nov. 12, 2016), https:// apps.bostonglobe.com/spotlight/the-desperate-and-the-dead/series/courts/ (last visited Feb. 3, 2020) (noting that "[c]ourt personnel are, in the main, poorly equipped to deal with mental illness") [https://perma.cc/J93S-HJGL].

247.   *See* Rouse, *supra* note 179 (emphasizing that AI can process data much more quickly than humans can).

defendant and verification efforts by probation officers.[248] The information can be formatted to promote better use. For example, English is a second language for many defendants.[249] AI can provide copies in the defendant's language of preference and English.[250] It can also convert language to the defendants reading level and allow accommodation for those with special needs. Building on that example, a visually impaired defendant could be given the options of the report in large font, Braille, or even an audio version of the report via text-to-voice technology.[251]

The speed of AI also applies to document production. Presently, once a defendant is sentenced, he or she must wait to receive official documentation of the sentence in the mail.[252] AI could record the sentencing and produce documents on the spot. The defendant could walk out of the courtroom with an official record of sentence that could be formatted to address any special needs the defendant may have and to facilitate understanding of the documents.

As to additional information the defendant may need, AI can help provide designation information if the defendant is

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248.   *See* OFFICE OF PROBATION & PRETRIAL SERVS., *supra* note 243, at II-2, II-17, III-8, III-17, III-24 (outlining the contents of the presentence investigation report).

249.   *See* John Bainbridge Safford, *No Comprendo: The Non-English-Speaking Defendant and the Criminal Process*, 68 J. CRIM. L. & CRIMINOLOGY 14, 15 (1977) ("Minorities for whom English is not the principal language or who speak such unusual dialects of English as to cloud understanding and communication make up a discouraging proportion of offenders.").

250.   *See* Simon Davies, *Artificial Intelligence Is Changing the Translation Industry. But Will It Work?*, DIGITALIST MAG. (July 6, 2018), https://www.digitalistmag.com/digital-economy/2018/07/06/artificial-intelligence-is-changing-translation-industry-but-will-it-work-06178661 (last visited Feb. 2, 2020) (discussing AI's ability to translate languages) [https://perma.cc/SRP4-URBJ].

251.   *See id.* (discussing the capabilities of AI translators).

252.   *See, e.g.*, Jerry Zremski, *Chris Collins' Imprisonment Delayed Until April 21*, THE BUFFALO NEWS (Mar. 2, 2020), https://buffalonews.com/2020/03/02/collins-imprisonment-delayed-until-april-21/ (last visited Mar. 28, 2020) (discussing how a defendant would report to prison weeks after pleading guilty because of the time the Bureau of Prisons would need to process him) [https://perma.cc/J3QQ-9WAW].

facing a prison sentence.[253] Historically, defendants had to wait weeks after sentencing to find out what prison facility they have been assigned to by the BOP.[254] It is only after learning his or her classification score and which facility that the defendant can really prepare for the transition.

For the defendant and his or her family, knowing where the defendant will be, the programming the defendant will be eligible for, and other important issues will be useful, and shape whether they feel they have been treated fairly or not.[255] At the same time, there may be benefits to the government as pretrial detention facilities have traditionally been more expensive than BOP institutions.[256] Faster designations could lead to more economical placement.

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253.   *See Designation*, FED. BUREAU OF PRISONS, https://www.bop.gov /inmates/custody_and_care/designations.jsp (last visited Feb. 3, 2020) (noting that, currently, "[u]pon sentencing in a Federal District Court, the Bureau of Prisons has the sole responsibility in determining where an offender will be designated for service of his/her sentence") [https://perma.cc/D5BA-L7H4].

254.   *See, e.g.*, Zremski, *supra* note 252 (discussing how a defendant would report to prison weeks after pleading guilty because the Bureau of Prisons would need to process him).

255.   The BOP posts its policies and procedures, along with other information, on its website. *See generally Designation*, *supra* note 253. An inmate's classification score and assigned institution are major influences on the defendant's experience as an inmate. *See* FED. BUREAU OF PRISONS, P5100.08, PROGRAM STATEMENT (2006), https://www.bop.gov/policy/progstat /5100_008cn.pdf (detailing the factors that influence a defendant's placement, including the defendant's classification which dictates which group the defendant will be placed in "based on their security and program needs") [https://perma.cc/6HRV-A65W]. There are different types of institutions from the proverbial "Club Fed" camp to ultra-secure "Supermaxes." *See Prison Security Levels*, FED. BUREAU OF PRISONS, https://www.bop.gov/about/statistics /statistics_inmate_sec_levels.jsp (last updated Apr. 11, 2020) (last visited Feb. 4, 2020) (providing statistics on prison security levels) [https://perma.cc/945S-NJ69]. In relation to the Club-Fed characterization, not all inmates view it that way. *See* Lisa Depaulo, *Here's What White Collar Prison Is Really Like for Three High-Profile Criminals*, BUS. INSIDER (Dec. 31, 2013, 9:57 AM), https:// www.businessinsider.com/white-collar-prisons-2013-12 (last visited Feb. 4, 2020) (quoting an incarcerated man as saying, "That whole Club Fed mentality, that shit that they portray in the press, is complete nonsense") [https://perma.cc/8FGE-4C28].

256.   *See* U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-16-472, PRISONER OPERATIONS: UNITED STATES MARSHALS SERVICE COULD BETTER ESTIMATE COST SAVINGS AND MONITOR EFFORTS TO INCREASE EFFICIENCIES 17 (2016)

These are but a few of the options that can be pursued in the federal tradition of using technology to improve sentencing.

VI. Conclusion

The Monty Python skit cited at the beginning of this article[257] demonstrates the irony of improving things around a problem, but not the problem itself. That irony is not lost on those involved with federal sentencing. General dissatisfaction with sentencing continues notwithstanding repeated reforms and spending billions of tax dollars.[258] It does not seem to matter whose discretion applies: juries, Congress, judges, or prosecutors. Sentencing remains a discretionary practice without ultimate outcome measures—and that seems to be the problem.

We are unable, empirically, to measure the impact of sentencing in terms of community safety, restoration of victims or even rehabilitation. We have some figures, such as the cost of imprisonment, financial sanctions collected and recidivism rates (measured different ways). But we are only feeling parts of the elephant in the dark. We do not have the complete picture. The progress that has been made in terms of sentencing transparency, structuring of judicial decision making, and research has been made possible due to technological innovation.

It is also technological innovation that is needed for federal sentencing to move to the next level, a level where it can better understand its impact, its costs, and its options. AI may be the very thing the federal system needs to improve sentencing. AI and associated algorithms may be uniquely situated to address concerns about racism and discrimination in federal

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(acknowledging the United States Marshal Service's dependency on private jails and how those facilities tend to be more expensive than government jails due to their location, bed guarantees and other factors).

257. Gilliam, *supra* note 1.

258. *See supra* notes 9–11 (discussing the public's concerns about federal sentencing).

sentencing.[259] "For those who wish to reduce discriminatory behavior, this is a massive opportunity."[260] We literally see into AI's logic and use of information, how and why it came to its decisions.[261] Its approach can be modified based on outcomes and adjustments easily made, and documented, if bias or other distortion is detected.[262] AI has no ego and does not fatigue. Consequently, any changes will be implemented without reservation or resentment. That predictability, transparency, and objectiveness has not been offered before by any other actor in sentencing.

To build a greater empirical base and scientific understanding of the key components of sentencing will require more and better data. The data must also be presented in a way, and with such reliability, that it facilitates its use by practitioners, government officials, academics, and the public alike. AI has done that in other areas and can do it for federal sentencing.

A few ways in which AI can be used in the short-term were discussed in this Article, but that in no way reflects AI's full potential. Work groups within and across the agencies and interested parties could better plan for AI's use and begin implementation. The tasks for these groups, however, cannot merely be how to use the technology. They should be charged with helping potential users move past the myths surrounding the technology, myths that exaggerate both its capabilities and risks. The groups must also formally take into account ethical, legal, and financial considerations related to the technology.

Not adopting AI will mean federal sentencing will remain on the carousel of unmeasured reforms. Simply shifting discretion and making other changes without fully knowing the impact can be more than ineffectual: It can undermine trust in

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259.   *See* Kleinberg et al., *supra* note 167, at 164 ("[Algorithms] have the potential to make important strides in combatting discrimination . . . .").

260.   *Id.* at 163.

261.   *But see* Rouse, *supra* note 179 (explaining that sometimes "it can be difficult to explain how the decision was arrived at because the AI tools . . . operate by teasing out subtle correlations between thousands of variables").

262.   *See* Galeon, *supra* note 186 (noting that AI can learn from its failures).

the sentencing system. If we continue to treat sentencing exclusively as an art, we must expect the art critics and emotionally driven assessments of the system's value.

The tools are now available to make federal sentencing both an art and a science. Adding more science will clearly increase value and lend greater support to the art component that will remain.