From eugenics to big data: Towards a Genealogy of Criminal Risk Assessment in the United States

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Criminal Risk Assessment (CRA) has been a critical part of the United States criminal legal system since the early 20th century when eugenic beliefs about the heritability and racially concentrated sources of criminality crystallized into a belief that crime was mostly the product of a dangerous minority among law breakers. The emergence of explicitly risk oriented judgments in criminal law, the focus on groups rather than individuals, and the increasing reliance on formal model based instruments of CRA, what this chapter calls algorithmic justice, is only the latest variation on this powerful myth that crime can be efficiently contained by identifying and incapacitating the dangerous minority, if only the right formula is at hand.

A. Introduction

Having co-authored an article that helped draw attention to a major shift in the logics of criminal risk assessment (CRA) in American criminal law, I want to revisit this history and reflect more deliberately on the complexities we can observe as we consider the longer arc of risk and justice in the United States in a less synthetic and simplifying approach than we took thirty years ago.[1] This historical reflection is shaped by a number of broader issues and developments of the present moment. One is the role that algorithms (as reflected in the title of this volume) that are coming to operate in American justice more generally and especially in the criminal legal system. This pressure is one being felt globally. As the age of big data pushes us toward an embrace of artificial intelligence based decision systems generally, pressure to conform criminal justice authority to it will build as well. A second source of social and legal change, one which perhaps has more

1 Malcolm Feeley and Jonathan Simon. "The New Penology: Notes on the Emerging Strategy of Corrections and its Implications' (1992)." Criminology 30: 449.

salience in the United States than more globally is a reckoning with the long history of racism in the US criminal legal system. Indeed, so tightly is CRA in the US bound with processes of racialization that an alternative title for this chapter might be "from eugenics to big data: criminal risk assessment as a genealogy of anti-Black racism in the United States." The shocking murder of George Floyd, an unarmed Black man accused of a minor crime by Minneapolis police, seen by millions in June of 2020 due to videos and social media saturation, brought public disquiet with police violence against Black citizens to a new peak with calls to dramatically transform or even defund the police and other criminal legal institutions. That was followed very rapidly, as it often is in the US, with a backlash in which racial justice reforms were presumptively linked to increasing crime in the pandemic years of 2020 and 2021.

The sudden popularity of the algorithm in criminal justice reform and the need to answer deep questions about racial bias are two sides of a legitimacy crisis facing criminal justice, a deeper one than any in generations. Several examples will provide a sense of the significance of the change now underway especially in contrast to the one Malcolm Feeley and I predicted thirty years ago in "the new penology." After decades of making prison sentences longer for almost everyone convicted of certain crimes, nearly half the US states introduced algorithm risk assessment tools into their sentencing process with the authority to allocate shorter sentences to low risk defendants.[2] A second example is from pretrial detention, where after decades of money bail conditions being set by police charges and the criminal record (both viewed by experts as highly vulnerable to racial bias), new CRA instruments using formal algorithms developed on big data sets to predict risk are being promoted in a number of states.[3] My final example is policing where after decades of giving police more discretion to use their authority to seize and question people deemed by them to be suspicious, major police departments like Los Angeles Police Department

2 To be sure, almost nowhere are judges required to rely on it, and it is not clear empirically how often it controls the sentence but it is a change from an era when mandatory sentences were generally based on the crime which the prosecutor chose to bring and the criminal record, both highly suspected of being infected with racial bias.

3 An important driver has been the Arnold Foundation, a philanthropy funded by tech fortunes, that has developed and promoted sophisticated risk instruments for use in pretrial detention and related decisions. https://www.arnoldventures.org/stories/public-safety-assessment-risk-tool-promotes-safety-equity-justice.

have adopted algorithm based systems to determine the deployment of police around areas of predicted high crime.[4]

It is possible to argue that this recent spread of algorithmic justice is just a delayed arrival of what we called "the new penology". The logic of risk we called "actuarial justice"[5] is perhaps not so different from the algorithmic justice that is emerging today in social science being a few decades off with your predictions, might not be a bad record. However, for purposes of understanding the deeper genealogy of CRA in the US criminal legal system I want to explore the discontinuities between the two moments of potential change in the methodology and approach to CRA. In "the new penology" we argued based on our independent empirical work on different aspects of criminal justice, that dramatic changes were coming, driven by the pervasiveness of the risk logic we claimed to describe. These changes were not just in one aspect of criminal justice but in, one might say, the entire paradigm. This included a shift in the objectives of justice, - from reform, deterrence and rehabilitation, to risk management through levels of penal control; a shift in the target of justice— from the individual criminal offender to the statistically defined social group; and in the logics and methods of expertise from a clinical gaze on the individual penal subject as a holistic entity to a statistical analysis of crime prevalence in a statistically analysed population or sample. Against a fuller genealogy of CRA our claims seem overly dramatic and simplistic (as plenty of critics suggested at the time).

In the remainder of this chapter, I will situate both the present moment and the false dawn of the new penology three decades ago alongside two other moments that together fill out a twentieth century genealogy of CRA in American justice. We are going to start with the present, which I have already characterized as one of emerging algorithmic based technologies of CRA at many crucial nodes of decision making in the modern criminal legal system. Is this the moment we predicted, just late? We next revisit the 1980s and 1990s to understand in retrospect for the failure of actuarial justice to take off in that time. Next we are going to leap over the mid-twentieth century so called golden era of rehabilitation in American corrections and clinical and psychological forms of expertise within the juridical and

4 Sarah Brayne, Predict and Surveil: Data, discretion, and the future of policing. Oxford University Press, USA, 2020.

5 Malcolm Feeley and Jonathan Simon. "Actuarial justice: The emerging new criminal law." The futures of criminology 173 (1994): 174.

carceral institutions of justice to the deepest, earliest, and consequential layer of our genealogy, the early 20th century when fuelled by a larger embrace of eugenics as governmental rationality CRA really took root in the American justice system. Then we will briefly return to the mid-20th century which we implicitly took to be the baseline against which we defined a "new penology".

To contextualize these shifts, we'll look first at the legitimacy problems facing the justice system to which different logics of CRA have been offered as technocratic and policy rational solutions. Second, we will identify the epistemic conditions of possibility that have allowed different forms of CRA to take root in the justice system. These include intellectual production (new ideas, ideologies or governmentalities) as well as advances in technology that spur knowledge production. Of particular importance in this regard are three advances in the long computer revolution that has swept the US (and the world) since the mid-20th century. Finally, we will examine some exemplary expressions of CRA.

B. Algorithmic Justice 2007

Examples of algorithmic justice abound today as they really did not in the early 1990s. A good example of algorithmic justice in action is PredPol, a privately developed and licensed set technology for police to use their own data to predict times and places where crimes are more likely and adopted by a large number of police departments including the LAPD, one of the nation's largest and best funded.

What has made algorithmic justice more successful now than its superficially similar actuarial cousin in the 1990s? Taking what we can call following Foucault a problematization approach, today the US justice system faces more promising problems than it did in the 1990s when the only real question was how fast it could grow its punitive capacity. In particular, two enduring challenges to the legitimacy of justice in its extended late 20th century form of "mass incarceration.": cost and racism. Actuarial justice is by nature a fiscal logic (as befits its origins in insurance) and it can only thrive if institutions are compelled to prove their efficiency in some transparent way. Thus, it was only as the real cost of our distended prison sentences became visible and politically undeniable, that the parsimonious logic of algorithmic justice could become a virtue rather than a compromise

with public safety (as it was for much of the late twentieth century). The fiscal crisis of 2008 which sent many state budgets (which is where most of American justice is bought and paid for) into steep revenue declines.[6] More than a decade after the end of the Great Recession, austerity concerns seem to have become a permanent condition in criminal justice policy.

But if overspending is a problem for the legitimacy of the criminal legal system, it is a problem that brings it into line with the larger challenges facing the taxing and spending powers of the government in times of enduring hostility to high taxes. It is racism and particularly the justice systems disproportionate harm through surveillance, incarceration and violence, that drives its most acute crises of legitimacy today. The history through which public safety was built in twentieth century America, largely to exclude and punish Black Americans, is one that was never fully covered up (certainly not for Black communities) and has recently been subjected to a wave of studies by historians.[7]

In our moment of at least partial criminal legal system reform since the mid 2000s, two legitimacy problems have emerged that were not consistently viewed as problems in before the turn of the century: austerity and racism. If algorithmic CRA is more popular than it was before, our hypothesis is that it is, or appears to be (which is the same thing for games of legitimacy) it is in large part because it appears to provide reasons to be optimistic that through better CRA the criminal legal system can become cheaper, more efficient, and less racist. Our goal in this chapter will not be to assess those substantive claims as to note their role as a condition of possibility for the recent take off of algorithmic justice.

The most promising problems of legitimacy will lead to significant reforms unless the epistemic conditions are such as to make some new forms of expertise available to address them. The big data moment we are experiencing is associated with a range of new technologies and methodologies to exploit them that are only the most recent revolution in computational power to shape the justice system. The sudden appearance and now seeming inevitability of artificial intelligence has been made possible by the proliferation beyond military fields of super powerful processors, as well as the emergence of tools to make different sets of data in a common

6 Hadar Aviram, Cheap on crime: Recession-era politics and the transformation of American punishment. University of California Press, 2015.

7 See for example, Kelly Lytle Hernandez, City of Inmates: Conquest, rebellion, and the rise of human caging in Los Angeles, 1771–1965 (2017); John K. Bardes, The Carceral City: Slavery and the Making of Mass Incarceration in New Orleans, 1803-1930 (2024).

framework of analysis through scraping and other techniques that take advantage of the increasing proliferation of data accessible digitally. This revolution is taking place across the economy and society and the criminal legal system is hardly the most advanced sector.

These new computational methods offer the promise of being able to boost the efficiency of the justice system but often at the cost of making its potential racial biases invisible. Leaving it to presumption that the systems are less biased than the human decision makers they replace. Some of the most successful algorithmic CRA approaches like PredPol are those that promise rather visibly to target criminal legal system resources more precisely these legitimacy crises and questions about the expertise claimed by the criminal legal system about crime. As American Studies scholar Jackie Wang puts it: "PredPol draws on many of the tenets of the 'police science' paradigm to solve two contemporary crises: the crisis of legitimacy suffered by the police and the broader epistemological crisis that could be called the crisis of uncertainty."[8] Again, whether it works is not the focus of this chapter, nor easily discernible. PredPol may direct police where to go but it does not control their discretionary decision making once they get there. Once police saturate an area it is likely they will find some crimes whether or not they are the robberies, assaults or burglaries that people fear.

Actuarial Justice: 1982-1994

The article, "the new penology", published in 1992, offered a dramatic account of big changes in the nature of expertise and methods of CRA in the justice system. While our conclusions turned out to be inaccurate about the direction of criminal justice in the late decade of the twentieth century, we were right that something was stirring. In the US generally, and in California particularly, prison populations were in a period of unprecedented and sustained growth. Mass imprisonment was becoming visible and controversial. It was this growth that formed the potential legitimacy problem that actuarial justice was intended to solve.

The other major push toward actuarial justice came from the implosion of confidence in clinical methods of CRA. Popular since the turn of the

8 Jackie Wang, Carceral Capitalism (SemioTexte 2018), 230.

20th century, clinical justice was the implicit if not explicit template for some of the most important decisions made by the justice system including prison sentence length, opportunity for probation supervision rather than some or all of a prison or jail sentence, and the possibility of early release from prison. Long associated with the objectivity and the expertise of medical and psychiatric professionals, clinical assessment in the 1970s went through a full legitimacy crisis of its own.[9] America in the 1950s and 1960s had a very large psychiatric custodial population and in the 1960s and 1970s this was coming under scrutiny as being abusive and even totalitarian in the ease with which adults could be confined against their will without being convicted or a crime. It was the closing of several large hospitals under pressure from courts that created the empirical backlash against clinical prediction as scores of patients who had been deemed too dangerous to release under those methods returned to the community largely without adverse reaction. Some claimed that a psychologist evaluating dangerousness based on a holistic examination was no better than chance at predicting accurately who would go one to behave violently. In the justice system, clinical justice in functions like parole release were widely accused of being biased against the increasingly large population of Black people imprisoned.

If prison population growth and unreliability and perhaps racism of clinical CRA were motivating problems, the emergence of actuarial justice as a plausible solution also required changes in the epistemic capacities of the criminal legal system. A significant development for a logic that required data analysis of large data sets (not yet big data but large) was the computing revolution that emerged with the desktop computer in the very late 1970s and early 1980s. Prior to the early 1980s virtually no state or local criminal legal system in the US had a computer system of their own of the kind that would be necessary to turn produce actuarial predictions reliably and cheaply. Access to large "mainframe" computers was expensive and largely at the disposal of hard scientists, the military, and state governments.

An additional epistemic condition was the overall rise in the prestige of numbers in public policy, a long running trend but one that was accelerated in adjacent and related legal field by the rise of economics and especially

9 Jonathan Simon "Reversal of fortune: The resurgence of individual risk assessment in criminal justice." Annu. Rev. Law Soc. Sci. 1, no. 1 (2005): 397-421.

economic analysis of law. While the first generation of law and economics was more theoretical than empirical, it raised the prestige of numbers (even made up numbers) in the fields of law and public policy. The rising faith in numbers to legitimize even the most problematic facets of the US criminal legal system. In 1976 the Supreme Court would cite although it claimed not to rely on simplistic regression analyses showing a deterrent effect of the death penalty in affirming the constitutionality of a suite of new capital sentencing laws.[10]

Another offshoot of economic analysis with even more quantitative uptake was cost-benefit analysis, the systematic data based analysis of whether proposed laws or regulations would produce more social benefits than costs. The Reagan administration (1981-1989) institutionalized cost-benefit analysis as a requirement for all proposed regulations as a way of shrinking the regulatory burden on the economy, but successive more social-democratic administrations have maintained it. In this respect, as we argued in the "new penology," the quantification of criminal legal operations required by the logic of actuarial CRA was a late transfer of quantitative methods of prediction being absorbed across government and with deep roots in the financial sector of the private economy.

In retrospect the new penology article had relatively few examples that really exemplified actuarial CRA as we described it. The widely known U.S. Sentencing Guidelines, adopted in 1984, had a very quantitative looking grid that governed the range of months in prison that a judge could impose (it was originally mandatory) but in fact the scheme eschewed consideration of the kinds of social facts about defendants that would emerge in actuarial CRA and instead relied completely on a combination of crime seriousness and criminal record. Criminal record was at best a crude measure of risk and certainly not driven by data. Likewise, the 1980s.

Perhaps the most convincing example we identified was one that was never actually adopted. The RAND Corporation's 1982 study "Selective Incapacitation," authored by criminologist Peter Greenwood, and published just as tougher sentencing policies and laws was beginning to produce severe overcrowding in California prisons (and before the big boom in new prisons) offered what actuarially driven CRA as an alternative to mass imprisonment. The RAND study used self reported surveys of prisoners to derive relative criminal activity scales and multivariate analysis to estimate the

10 Gregg v. Georgia, 438 United States Reports 153, 186.

effect on criminal activity of individuals of a wide variety of demographic and behavioural variables to determine the most efficient predictors of levels of criminal activity. The original study identified eight factors that could predict membership in the high risk group with an accuracy level above 90 percent. The promise being that using such indicators to shape length of sentence could allow California to reduce crime significantly without the cost of a general incapacitation strategy in which everyone convicted of the same crime received the same sentence (thus the concept of selective incapacitation). Good social scientists, the RAND investigators ultimately dismantled their own claims by more closely examining their data and assumptions.[11] But the dream of more accurate and valid instruments has remained.

Thus, while the new penology we predicted was at best in embryonic form at this point, it's plausibility[12] to us reflected very real problems we saw facing the legitimacy of the criminal legal system. The United States was in the midst of what we now know would be a historically epic growth in its prison population. Overcrowding was indeed growing to levels that combined with flawed mental and medical health care delivery systems in prisons would create constitutional violations and ultimately court interventions. Indeed, the people who wrote the selective study were very much trying to catch the attention of California correctional managers and convince them that mass imprisonment might not be necessary— if they could pick the right people to imprison. The second problem was the collapse of confidence in psychologically oriented clinical CRA. While much of the problem with clinical prediction was its perceived lack of measurable reliability, the strongest normative concerns go back to the problem of systemic racism, especially anti-Black racism, in CRA. The early 1970s was a period when many people who were pursuing racial justice and civil rights began to suspect that clinical risk prediction by judges and parole boards could be influenced by preexisting even unconscious assumptions that Black people are more criminally inclined. As we will see in the next section what may have been unconscious in the 1970s was a very conscious process of linkage fifty years earlier. Actuarial CRA rose in its prospects (and in our estimation) because it was poised to leverage greater statistical

11 Peter Greenwood and Susan Turner. "Selective incapacitation revisited." Why High-Rate Offenders Are Hard to Predict. Santa Monica (1987).

12 Jonathan Simon, Mass Incarceration on Trial: A Remarkable Court Decision and the Future of American Prisons (New Press, 2014).

research conducted on accessible desktop computers and the general rise in the prestige of quantitative calculation in law and policy.

Eugenic Justice: 1905-1945

Much of the debate over different modes of CRA has turned on their consequences for racial bias and the resulting overconcentration of punishments and surveillance on communities already marginalized by long histories of racial discrimination in society much of it effectuated through the justice system. This laudatory concern (which is only active in some phases of our history) also provides its own evidence that such bias is real and systemic. Indeed, it is the main argument of this chapter that the shifting views of high crime levels in racialized communities is the driving force behind the assessment of future dangerousness in all CRA modalities. And this is no accident but has a clear history and a beginning in which this racial vision was not disguised in the least but taught as respectable foundations for criminology and sociology in the new and to some miraculous science of eugenics.

We begin our genealogy with the first decades of the twentieth century, what historians may learn to call the eugenic era (instead of the more commonly used "progressive era"). This high water moment of scientific racism and the construction in particular of Black people as the chief threat to urban civilization and safety is also the birth era in important respects of American criminal risk assessment and when the idea that criminal dangerousness could be located in a type of individual (a group therefore), like the criminal persistent criminal or habitual criminal, or natural criminal. As the modern institutional structure of the American justice system was completed in this era with the addition of new penal authority and institutions such as parole, probation, and juvenile courts, the system and its leaders embraced CRA as the crucial to its vision of how to stay on top of a wave of urban crime perceived as out of control in this era (blamed on immigration for the most part and the racial inferiority of those immigrating at the turn of the century.

The number one legitimacy problem facing the American justice system was its perceived failure to counter mounting crime, especially in large cities. This failure could be said to have two faces, one at the individual level and one at the population. Individually (although in aggregate as well) was perceived in the growing problem of recidivism (the supposed return

to crime or at least arrest) of a person formerly incarcerated in a state penitentiary. The repeat offender (or "habitual offender" in one common formulation for extended prison sentences), recidivist, or persistent or habitual criminal was new face of criminal danger. While their existence suggested the prison was a failure as a reformatory for many, the statistical analysis of recidivism emerged as the basis for an optimistic search for criteria with which to predict who these recidivists are in advance of releasing them (the power given by new mechanisms like parole and probation).

Second, the criminal problem was to be identified more and more in American cities with immigrants flowing to the United States from southern eastern Europe following the Civil War in the 1870s and 1880s. Criminal law experts blamed the racial and cultural defects of immigrants for what was taken to be a rise in violent and organized crime as well as labour radicalism and anarchism. Facing this overlapping threats (immigrants were surely more likely to be recidivists in the reasoning of the time) penal reformers embraced CRA as a crucial upgrade to common law legal system of the 19th century with its emphasis on retributive or deterrent justice efforts to a capacity to exclude the dangerous multitudes and select out the dangerous individuals. The former project would fall mostly to immigration law (which virtually excluded immigrants from outside of northern Europe after 1924 and until 1965). It also reflected the power implied by modes of CRA to address the faces of the new crime threat.

The eugenic approach to government favoured aggressive use of coercive legal authority, whether in immigration enforcement or criminal justice to remove and exclude those with undesirable characteristics and above all the lower mental capacity that eugenics associated with crime and host of other bad personal and social outcomes. The method used to determine a person's eugenic threat could be appallingly shambolic even for that day.[13] Such was the confidence that criminal difference existed, explained most of crime and was foreshadowed by racial differences, that the actual method of assessment was unimportant. The methods of risk assessment in this era embraced both clinical and statistical analysis reflecting the variety of disciplines and professions that claimed some expertise about the aetiology

13 For example, the conclusion that a woman was an "imbecile" and likely to give birth to further imbeciles if not segregated in an asylum and ultimately sterilized. These were medical doctors who were presumed to have confident diagnostic skills but who in fact operated mostly on their class based judgment of working class women. See Andrew Cohen (2017). Imbeciles: The supreme court, American eugenics, and the sterilization of Carrie Buck. Penguin.

of crime but also the fact that both were consistent with the eugenic belief system that bad traits existed in the genetic inheritance of the individual and could be observed both at the population level through statistics or at the individual through close social analysis (which of course would include racial history).

What made CRA seem a plausible solution was indeed the primacy of eugenic thinking in this period across American public policy, government, and academia. No other democracy embraced eugenics at the scale and level of the United States and the criminal legal system found a way to revitalize its legitimacy in this title wave of optimism that an assertive state could engineer problems like crime and poverty and illness by controlling reproduction as well as immigration while the degenerate already here could be removed surgically through sterilization and for men through long sentences in the criminal justice system (extended by juvenile courts, probation officers, and parole).

While remarkably uniform in its acceptance of the eugenic logic of CRA, reformers were quite varied in the methodology they employed. Probation officers exemplified the new clinical approach. Trained in the same methods of the contemporary social work movement, probation combined a holistic analysis of family (race), education, and work history, with criminal record, to provide the juvenile or adult court judge an expert view on the criminality and reformability of the individual.[14] At virtually the same time (and in the same city, Chicago) a kind of actuarial justice was being generated by University of Chicago sociologists which cooperated with the corrections department of Illinois to keep statistical records of prisoners and recidivism and subject those to a close analysis of correlation (multivariate methods were still lacking). The Chicago method drew on social types, like the alcoholic and the ne'er do well (the latter basically suggesting non-work) identify the differences in recidivism levels. The result was a simple additive scale based on the types and demographic characteristics with the greatest correlations to recidivism (including race and nationality).[15]

While European immigrants were the main focus of the urban crime panic at the turn of the century, the huge wave of migration of Black

14 Michael Willrich. City of courts: Socializing justice in progressive era Chicago. Cambridge University Press, 2003.

15 Bernard Harcourt, Against Prediction. Chicago: University of Chicago Press. Harlow, Caroline Wolf, 2000.

Americans from the rural south to the urban north and south, which began even before but accelerated during World War I, quickly brought Black Americans, and particularly unemployed Black men who were an inevitable part of the ups and downs of a racially segmented and exploitative capitalist labour market with few protections to the forefront of concern of a now enlarged and eugenically oriented criminal legal system.

Clinical justice: 1945-1980

By the 1950s, eugenics as a racial governance project had largely collapsed among policy and academic experts tainted by its association with Nazi regime in Germany which had followed America in embracing aggressive racial legislation and followed up with murder[16] and by the advance genetic science which undermined most of the simplifying claims about the heritability of complex social outcomes like crime and undermined the belief that a problem free society could be engineered by removing those with bad traits from reproductive opportunity. Biological theories of crime, and their explicitly racist implications fell out of favour with crime experts who preferred to rely on sociological and cultural explanations for crime patterns that were now well embedded in the very structure of law enforcement and segregation in the mid-century metropolitan landscape. The eugenic assumptions about race, immigrant status, and mental disability as associated with repeated and serious crime and that the criminal justice system could remove a dangerous minority of largely unredeemable criminals remained deeply influential, having been taught as scientific truth to a generation of law enforcement and legal professionals who were only coming into their own peak of leadership responsibilities in the 1960s.

It was this hangover of eugenics and its shadow in well established patterns of race discrimination in the provision of what small amounts of resources for betterment and reform the system had to provide, that formed the predominant legitimacy problem for which a shift to seemingly more humanistic psychological approaches would be perceived as a solution. The bad association of the criminal legal system (and the asylum system) with eugenics led to campaigns for reform led by journalists and lawyers in many states. Asylums in many states are closed down as they are associated with

16 James Q. Whitman, Hitler's American model: The United States and the making of Nazi race law. Princeton University Press, 2017.

pointless warehousing of people defined as defective. Prisons came in for similar critique as cruel and inhumane with little effectiveness. The new efforts to push clinical CRA offered a way to address this legitimacy crisis head on by giving the individual the dignity and careful scrutiny that they were accused of denying.

The CRA methods of assessment of this period continued to include both clinical and actuarial modes of prediction but clinical received the greatest attention. This was the high cultural tide of psychiatry as a science of stable societies much of its influenced in the United States by Freudian psychoanalysis which became the dominant teaching methodology for psychiatrists in the 1950s and 1960s. Prisons in progressive states like California offered group therapy and sought to link psychological dynamics linked to crime with strategies for rehabilitative programming factors in the penal subject to the kinds of outcomes on parole that had been studied since the early 20th century (a kind of hybrid of clinical and actuarial). Prison sentences in many systems had come to rely in theory completely on the supposed clinical expertise of parole boards generally made up of retired law enforcement officers with no particular training in psychology or criminology. Although the validity of clinical assessment would soon come into major questioning (as discussed above in the section on actuarial justice), its appeal had less to do with its proven effectiveness and more with the appearance of humanizing and caring close examination of the person within a system premised on the possibility of their rehabilitation. This could stand in stark contrast to the determinism and racism now associated with the eugenic justice model.

The first large scale actuarial risk prediction system was developed for the federal probation system as a tool for determining low risk candidates for earlier release from prison sentences a process that was perceived as both unscientific and racist. The so-called "salient factors scores" gave federal parole decision makers an objective test.

C. Race, Risk and Anti-Black: A Philadelphia Story

It would not be until WWI and the full flow of the Great Migration of Black people from the American rural south to the cities of the Northeast and Midwest that Black communities would become the central focus of the criminal legal system. But the grounds for their arrival were already laid

by the criminology of the late 19th century discussed above which depicted Black people as the primary threat to urban order and security. Much of this battle would play out in the city of Philadelphia which was the only major northern city with a large population dating back to the American revolution. According to historian Kahlil G. Muhammad "Philadelphia was one of the most important black-criminality research sites in the nation".[17] Although many other cities would experience the same processes of migration, segregation, discrimination, Philadelphia stands out as a kind of implicit background to the focus of 20th century CRA on anti-Blackness. This arc which runs through the full length of our genealogy may be the most significant through line in the twisting path. Remarkably some of the foundational studies in modern criminology around which contemporary urban crime and its racial patterning have been normalized were drawn from work done in Philadelphia by social scientists associated with the city's leading research university, the University of Pennsylvania.

We begin at the very end of the 19th century when Frederick Hoffman made Philadelphia one of the cities he studied for his influential 1896 book, *Race Traits And Tendencies Of The American Negro*. As detailed by Muhmmad, Hoffman used census data to support his eugenics derived conclusion that as an inferior race Black workers could not compete in the supposed free economy of the North and therefore must turn to crime for survival. It was to combat this already emerging consensus among academic and policy experts that some years before Hoffman's book was published W. E. B. Du Bois, now seen as one of the inventors of empirical sociology in America went to Philadelphia on a fellowship from the University of Pennsylvania to write a dissertation on Black people in Philadelphia in all their social and economic complexity to earn his PhD from Harvard University (the first Black American to do so). The resulting study became his first book and perhaps the first piece of American sociology, *The Philadelphia Negro: A Social Study* (1899).

Du Bois undoubtedly chose Philadelphia because its long standing Black community was by far the largest outside the South, making it the only large northern city in America with a distinct and identifiable urban Black community. Du Bois was interested in more than crime. He understood sociology to be the study of modern urban people and wanted a place where he could document to full measure of how Black people navigated

17 Khalil Gibran. The condemnation of Blackness: Race, crime, and the making of modern urban America, with a new preface. Harvard University Press, 2019.

city life. His broad conclusions were that Black people faced the same problems and prospects, including criminalization, as other urban dwellers, but exacerbated by prejudice and discrimination which relegated them to the more precarious and least rewarding jobs. Du Bois clearly understood the priority of the crime issue for his White audience of academics and policy experts and did not shy away from highlighting the high level of crime in the segregated Black neighbourhood in which he and his young family resided during his fellowship (being no less subject to segregation despite his high academic prestige). Paradoxically the price of that attention was to spotlight the risk of Black crime as a central concern for the emerging science of sociology. Like other Black elites, he hoped more attention to Black crime might mean more resources put into preventive measures and who had been generally ignored by the criminal system as long as their crimes stayed within the Black community. These early Black law and order advocates were trying to get the attention of prosecutors and judges and police commanders much more concerned about crime among immigrants and radical labour organizers. Thus, debate that continues about whether Black neighbourhoods suffer more from over or under policing begins in this era as side effect of the rendering criminal risk an increasingly "black" problem rather than a broader social problem (the opposite of what Du Bois was attempting).

No city has a longer-term pattern of anti-black criminal justice than Philadelphia and even though by mid century it had been surpassed in the size of its Black population by New York and Chicago, its legal system remained one of the most racist criminal legal systems in the country. The heart of this anti-Black racism as urban politics and policy was Philadelphia's notorious police department. They play a central in unacknowledged role in the next important piece of empirical sociology to cast Black Philadelphians as the heart of the city's crime problem. We do not know if the importance of Philadelphia in the origin story of urban sociology was a causal factor, perhaps it's a coincidence that another sociologist with an interest in crime, Marvin Wolfgang, would locate one of the most influential 20th-century pieces of empirical sociology in that city. Wolfgang and his colleagues researched the pattern of juvenile arrests among every boy born in the city in 1945 who had ever been arrested. (importantly the first year of the "baby boom" cohort whose huge size is often seen as a factor in the crime wave of the 1960s through 1980s). The results, published at the height of the crime panic of the period, suggested that a small minority of arrested youth (about 5 percent), disproportionately accounted for most of

the serious crime arrests among the cohort as a whole. While the study did not attempt to derive predictive factors, one variable was overwhelmingly indicated, the high arrest minority were almost all Black juveniles. In short, Blackness was a predictor of crime risk in Philadelphia. Wolfgang and colleagues did not consider how the long history of Philadelphia police concentrating on Black youth may have shaped this result.

The birth cohort study, considered one of the most methodologically rigorous of its times, had a huge influence on thinking about crime prevention at a time of rising demand to address crime. Incarcerating Black youth was a plausible way to reduce the overall burden of urban crime on this reasoning. Wolfgang, unlike Frederick Hoffman, was no reflexive White supremacist; indeed, his research was mobilized in support of efforts to persuade the Supreme Court to strike down the American death penalty disproportionate application to Black defendants. Yet his research would cement the image of urban crime as Black crime and the notion that things were getting worse. In a follow up study of the 1958 birth cohort (toward the end of the baby boom) concluded that the younger brothers of the original cohort were even more violent and dangerous.

Through the end of the century Philadelphia remained one of the most racist and violent criminal legal systems in the country, with a district attorney infamous for seeking the most severe sentences possible and sending the largest number of Black people to prison and to capital punishment of any city outside of the deep south. The obsession of Philadelphia's police department with controlling its Black community remained high throughout the 20th century. In 1972 its notoriously anti-Black long time police chief Frank Rizzo became mayor and led an ongoing and explicitly racist campaign of violent policing against the Black community in the name of protecting its remaining white "ethnic" communities.[18] In 1985, under a Black Mayor, in support of a raid on a house where a radical Black power community resided in the heart of the city's historic Black neighbourhood resulting in a fire that killed everyone in the commune and destroyed much of the surrounding neighbourhood.

18 Donovan Schaefer, The City's Salvation: Frank Rizzo and White Christian Nationalism in Philadelphia, University of Virgina, Religion, Race, and Democracy Lab, https://religionlab.virginia.edu/projects/the-citys-salvation-frank-rizzo-and-white-christian-nationalism-in-philadelphia/.

From the Actuarial to the Algorithmic

If anti-Black racism has been the continuity in the role of CRA in the American criminal legal system, the pendulum swings between different methodologies and logics of risk justice has been the major source of variation. Today's advent of algorithmic instruments driven with the tools of big data is the latest and arguably most significant variation yet. Significant in part because this most recent computerization revolution can make algorithmic CRA operational at the micro-level of practice at a far more affordable cost than has ever been true. That does not mean frontline criminal justice decision makers will accept its authority over their discretion, but that the capacity to bring sophisticated modern data techniques to the capillary level of probation offices and courts is now in place or rapidly becoming so.

Rightly perceiving the importance of the two issues (anti-Blackness and big data), much of the current debate is not between clinical and actuarial style but whether this latest extension of actuarial into the algorithmic will make the racial bias of CRA better or worse.

The best aspect of the new data techniques from the perspective of the longer genealogy of CRA is its ability to break out of the traditional institutional silo of criminal records kept by courts, police, or prisons. It becomes possible, through data hacking to bring other data sets that reflect health, education, and welfare systems into the analysis. As modelling methodology becomes stronger it also becomes possible to reverse the system and attempt to correct statistically for the bias that is acknowledged in the system. However, the history of places like Philadelphia suggests that the social construction of crime risk and race ran in parallel since the early 20th century in ways that will make any effort at analytical separation or debiasing limited at best.[19]

D. Conclusion

The recent emergence of big data based algorithms at the core of critical decision making junctures in the American criminal legal system reflects the increasing problem of legitimacy facing that system in an era of permanent fiscal austerity and enduring concern about racial inequality. At the heart of this unresolvable knot is the linkage, drawn at the dawn of the modern

19 Sandray Mayson, "Bias In, Bias Out," 128 Yale Law Journal 2218 (2019).

era by the eugenics fuelled reshaping of local government in the early 20th century, between race (mostly anti-Black racism) and urban crime. The ongoing war on crime that has been directed against Black communities since that period, guarantees that all methods of CRA will reproduce over concentration on Black people as criminal risk and minimize their vulnerability to systems of surveillance and punishment.