

NOTES

For What It's Worth: The Role of Race- and Gender-Based Data in Civil Damages Awards

INTRODUCTION.....	1354
I. STATISTICAL RELIANCE ON RACE AND GENDER.....	1358
A. <i>Historically Permissible "Stereotyping"</i>	1358
1. An Introduction to Actuarial Science and the Problem of Redlining.....	1358
2. Life Tables, Forensic Economists, and Lost Earnings Calculations.....	1360
B. <i>Recent Rejections of Raced-Based and Gendered Evidence at Trial: Selected Examples</i>	1366
1. Judge Weinstein's Initial Rejection: The <i>McMillan</i> Rule.....	1366
2. Criminal Restitution: <i>United States v. Bedonie</i>	1366
3. Criminal Sentencing: <i>Buck v. Davis</i>	1368
C. <i>The Special Circumstances of Lead Paint Cases: A Case Study</i>	1369
1. The Historical Use and Dangers of Lead-Based Paint.....	1369
2. Judge Weinstein on Lead-Based Paint: <i>G.M.M. ex rel. Hernandez-Adams v. Kimpson</i>	1371
II. PROBLEMS WITH STATISTICAL DAMAGES.....	1373
A. <i>The Impracticality of Current Statistical Metrics: Applicability Concerns</i>	1373
1. The Reference Class Problem and Overfitting.....	1373
2. Blurred Lines: Mixed Race and Transgendered Individuals.....	1375

	B.	<i>The Elephant in the Room: Constitutional Concerns</i>	1379
	C.	<i>The Dangers of Stereotyping</i>	1383
III.		POSSIBLE ANSWERS	1384
	A.	<i>The Nuclear Option: Remove All Statistical Indicators</i>	1384
	B.	<i>Affirmative Action Damages?</i>	1385
	C.	<i>A More Temperate Approach: Removing Prima Facie Race-Based and Gendered Statistics, While Employing Only the Most Recent Available Data in Other Statistical Predictions</i>	1389
		CONCLUSION	1391

INTRODUCTION

Death and taxes, arguably may be certain; statistics, though often a valuable predictive aid, usually are not.
—Judge Bruce M. Selya¹

Following months of behavioral problems, hyperactivity, and intermittent complaints of headache and nausea, five-year-old Kelsey Craig's mother finally takes her to the pediatrician to determine the root of the problem. After multiple consultations, a blood test shows a surprising culprit: there is a dangerously high amount of lead present in Kelsey's blood, suggesting prolonged exposure to the irreversibly toxic substance. Upon returning to their older, prewar apartment building, Kelsey's mother passes a neighboring family in the hallway and woefully relays the tale of her diagnosis. The neighbors' eyes grow wide as they realize their own five-year-old son has been experiencing the very same symptoms. They immediately take him to the doctor and a blood test confirms their fears: the child's lead levels are through the roof.

A later inspection shows the toxic substance is present in dangerously high levels in multiple units throughout the apartment building. Amongst the affected tenants are five-year-olds Kelsey, John, and Shaun, who each suffer identical injuries and resulting permanent impairment. Kelsey is a Caucasian female with aspirations of becoming a scientist; her single mother works as a server at the local diner and is currently pursuing her GED. John is an African American male with

1. Reilly v. United States, 863 F.2d 149, 167 (1st Cir. 1988).

dreams of following in his parents' footsteps by becoming a doctor. Shaun is a multiracial male who was adopted at birth; his parents each hold doctorate degrees and are professors at the local university.

At trial, the jury quickly finds the landlord liable for his negligence in failing to detect and otherwise remove the toxic lead-based paint from the walls of the building. However, when it comes time to award damages according to standard calculations based on life expectancy and future lost earnings, the jury is at a loss. Should Kelsey receive a smaller award than John and Shaun because she is a female, and the average female earns less than the average male?² Should Shaun and John receive more than Kelsey because their parents are highly educated and receive a higher salary than Kelsey's single mother?³ Or should Kelsey receive more than both Shaun and John because she is Caucasian and, statistically speaking, Caucasian people earn more than African Americans and people of mixed racial descent?⁴

The gut reaction is certainly not—determining damages based on these race-specific and gendered classifications would only perpetuate existing systematic discrimination. These are simply five-year-old children, and given their identical injuries and impairment, they should receive equivalent awards. Awarding Kelsey less because of her gender or awarding Kelsey more because of her race immediately implicates constitutional concerns and issues of impracticability.⁵ Arguably, equal protection and due process are not vindicated through a determination of worth based on race or gender. The very idea raises a red flag by permitting the determination of a person's worth to be predicated on innate phenotypic characteristics beyond their control.⁶ Further, even if these applications are constitutional, how could they be accurately and consistently applied to all persons to guarantee a sound result throughout the state and federal court systems?⁷

However, consideration is also owed to those adversely affected by the exclusion of such data. From a defendant's standpoint and through a corrective justice lens, the goal of the tort system is to

2. See Bernadette D. Proctor et al., *Income and Poverty in the United States: 2015*, U.S. Census Bureau (Sept. 2016), <https://www.census.gov/library/publications/2016/demo/p60-256.html> [<https://perma.cc/R66D-KCR4>] (indicating a 2015 female-to-male earnings ratio of 0.80).

3. For a study linking the influence of parental education and income on a child's ultimate achievement, see Pamela E. Davis-Kean, *The Influence of Parent Education and Family Income on Child Achievement: The Indirect Role of Parental Expectations and the Home Environment*, 19 J. FAM. PSYCHOL. 2, 294 (2005).

4. See Proctor et al., *supra* note 2.

5. See *infra* Part II.

6. See *infra* Section II.B.

7. See *id.*

accurately compensate the plaintiff for harms caused by the defendant.⁸ Through damages, the defendant is able to monetarily restore the plaintiff to his or her former position. Ultimately, it is up to the jury to determine the cost of this restoration. In situations concerning a plaintiff's permanent impairment or death, determining this cost requires juries to calculate future damages. This calculation often begins with a chart known as a life table, which indexes the average number of years of life remaining for an individual who has reached a given age.⁹ Many life tables index this data by providing separate columns for specific races and genders, and, notably, appreciable differences in outcome can be found amongst the different categories.¹⁰ Thus, refusing to allow experts and juries to consider manifest descriptors like race and gender, which objectively *do* correlate with differing life expectancies and earning capacities, may seriously destroy the accuracy of these awards.

Despite socially normative arguments against the employment of race-based and gendered data when calculating civil damages, the practice has long been met with cautious acceptance (and occasional criticism).¹¹ However, recent judicial developments and proposed legislation suggest that perhaps this acceptance is waning.

In 2015, Judge Jack B. Weinstein¹² of the Eastern District of New York addressed the issue by altogether prohibiting the use of life tables delineating life expectancy outcomes on the basis of race, claiming, "it is unconstitutional . . . to premise projected societal and

8. However, it is not *always* the defendants who are negatively impacted by the exclusion of race-based and gendered data. *See infra* Part II.

9. *See* Elizabeth Arias et al., *U.S. Life Tables 2012*, 61 NAT'L VITAL STAT. REP. 1, 3 (2016), https://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_08.pdf [<https://perma.cc/2DYG-X7CQ>].

10. *See, e.g., id.*

11. *See, e.g.,* Marvin R. Brams & Norfleet W. Rives, Jr., *The Determination of Economic Loss in Tort Cases: The Relative Impact of Sex and Race*, 6 J. CONTEMP. L. 121, 127 (1979) (noting that "[d]espite the inherent limitations of working life tables, they have been generally accepted by the courts"); *see also* City of L.A. Dep't. of Water & Power v. Manhart, 435 U.S. 702, 725–26 ("Gender-based actuarial tables have been in use since at least 1843, and their statistical validity has been repeatedly verified."); *Zuchowicz v. United States*, Civ. No. 2-91-CV-1033 (WWE), 1996 WL 776585, at *1 (D. Conn. Nov. 25, 1996), *aff'd*, 140 F.3d 381 (2d Cir. 1998) (calculating damages based on the worklife table estimate of an average white female); *The Saginaw and the Hamilton*, 139 F. 906 (S.D.N.Y. 1905) (relying on race-based statistics to determine damages in an admiralty case involving white and "colored" defendants); *Gilborges v. Wallace*, 379 A.2d 269 (N.J. Super. Ct. App. Div. 1997) (permitting the use of gender-based tables).

12. Judge Jack Weinstein

has, for more than a half-century, been a central figure in the law of evidence . . . [and] has greatly influenced developments in many fields of law, but perhaps nowhere more than in the area of mass torts, where his management of the most complex cases has been extraordinarily influential.

Jeffrey B. Morris, *Jack B. Weinstein: Judicial Entrepreneur*, 69 U. MIAMI L. REV. 393, 399 (2015).

educational achievements on race or ethnicity to reduce tort damages.”¹³ On December 1, 2016, in the wake of this opinion and the considerable media attention that followed,¹⁴ bipartisan legislators introduced the Fair Calculations in Civil Damages Act of 2016 to the 114th Congress in an attempt to permanently exclude race, gender, and other demographic characteristics from consideration when calculating civil damages in federal courts.¹⁵ Beyond the federal system, the bill also envisioned the issuance of voluntary guidelines by the Department of Labor and the Department of Justice in an effort to instruct forensic economists and state court systems on appropriate civil damages calculation procedures.¹⁶ Further, the bill outlined a study and report component, to be performed by the Judicial Conference of the United States, detailing damages awards in personal injury cases arising under federal law that relied on race, gender, or the other identified demographic characteristics.¹⁷ While the bill ultimately died in committee before the 115th Congress was sworn in (just over a month after its introduction), the legislative articulation of this sentiment, and the bipartisan support it received, suggests that the current United States civil damages system may be due for change.

Part I of this Note provides a background of the traditional uses of race-based and gendered statistical evidence, including historically permissible “stereotyping” and recent cases in which it has arisen. Part II explores the relative merits, constitutionality, and unreliability of these qualifying categories, particularly when the lines blur and distinctions between categories become obscured. Part III provides a discussion of several solutions including a categorical exclusion of all statistical evidence, as well as the allowance of statistical data to serve

13. G.M.M. *ex rel.* Hernandez-Adams v. Kimpson, 116 F. Supp. 3d 126, 148–49 (E.D.N.Y. 2015). This decision echoes the sentiment of past decisions by Judge Weinstein. See *McMillan v. City of New York*, 253 F.R.D. 247 (E.D.N.Y. 2008) (refusing to consider the victim’s African American race).

14. See, e.g., Kim Soffen, *In One Corner of the Law, Minorities and Women Are Often Valued Less*, WASH. POST (Oct. 25, 2016), <https://www.washingtonpost.com/graphics/business/wonk/settlements/> [<https://perma.cc/9CRM-BSWD>]; Ashley Southall, *Award in Lead Paint Lawsuit Can’t Be Tied to Ethnicity, Judge Rules*, N.Y. TIMES (July 29, 2015), https://www.nytimes.com/2015/07/30/nyregion/award-in-lead-paint-lawsuit-cant-be-tied-to-ethnicity-judge-rules.html?_r=0 [<https://perma.cc/V3KW-5U4N>].

15. See H.R. 6417, 114th Cong. (2016); S. 3489, 114th Cong. (2016). The bill explicitly prohibited the use of future earnings calculations premised on “race, ethnicity, gender, religion, or actual or perceived sexual orientation of the plaintiff.” H.R. 6417, 114th Cong.; S. 3489, 114th Cong.; see also Kim Soffen, *Congress Could Soon Try to End Racial and Gender Discrimination in Civil Suits*, WASH. POST (Dec. 1, 2016), https://www.washingtonpost.com/news/wonk/wp/2016/12/01/congress-could-soon-try-to-end-racial-and-gender-discrimination-in-civil-suits/?utm_term=.907e241fe712 [<https://perma.cc/ABQ4-AEQ4>].

16. H.R. 6417, 114th Cong.; S. 3489, 114th Cong.

17. *Id.*

a so-called “affirmative action” function. Finally, Section III.C settles on the proposed solution of prohibiting prima facie race-based and gendered data and replacing it with demographic factors that are more accurately tailored to individual plaintiffs, thereby avoiding the constitutional, social, and applicability concerns associated with their use.

I. STATISTICAL RELIANCE ON RACE AND GENDER

A. *Historically Permissible “Stereotyping”*

Although recent judicial and legislative happenings question the inclusion of certain variables when calculating civil damages,¹⁸ the practice of relying on past data to project future outcomes is regularly employed in the adversarial system and beyond.¹⁹ The following Section discusses generally accepted methods of statistical prediction and provides several examples.

1. An Introduction to Actuarial Science and the Problem of Redlining

Though distinct from civil damages calculations in the judicial system, a similar use of data can be found in the actuarial assessments performed by insurance underwriters.²⁰ As Professor Frederick Schauer describes, actuaries are simply “specialists in generalization” who formulate assessments about broad categories of people who share a selected characteristic, such as age or gender.²¹ Once identified as possessing the selected characteristic, an individual is then grouped with others who share that characteristic, and group-wide attributes are ascribed to each group member.²² However, no direct investigation occurs to determine whether each group member actually possesses the group-wide attributes.²³ Rather, the group as a whole is “stereotyped.” Based on the profile created by these various group-wide attributes, the

18. See, e.g., *G.M.M. ex rel. Hernandez-Adams*, 116 F. Supp. 3d 126; *McMillan*, 253 F.R.D. 247.

19. See Brams & Rives, *supra* note 11.

20. See Mary L. Heen, *Nondiscrimination in Insurance: The Next Chapter*, 49 GA. L. REV. 1, 4 (2014) (“For over a century and a half, individual members of groups historically subjected to invidious discrimination have been denied access to insurance coverage or paid higher rates (or received lesser coverage) when classified by race or sex.”).

21. See FREDERICK SCHAUER, *PROFILES, PROBABILITIES, AND STEREOTYPES* 4 (2003) (using the example of teenage male drivers in New Jersey paying higher insurance premiums as a result of that group’s characterization as reckless drivers).

22. *Id.*

23. *Id.*

underwriter determines the appropriate level of risk to assign the individual, which in turn affects the decision to insure and the resulting cost of obtaining an insurance premium.

For example, consider a world where owners of red sports cars are stereotyped as dangerously fast drivers.²⁴ Once identified as an “owner of a red sports car,” a driver applying for automobile insurance will be grouped with other red sports car owners, and each group member will be assigned the group-wide attribute of “dangerously fast driver.” Thus, although this particular driver may consistently drive ten miles below the speed limit and be the picture of safe driving, his ownership of a red sports car will necessarily cause the underwriter to flag him as a “dangerously fast driver,” which in turn will increase the cost of his insurance premium. Mostly, the use of statistical data in this realm occurs without much protest, and this type of “stereotyping” is seen as normal practice in the underwriting world.²⁵

However, actuarial assessments that rely on race as the selected identifying characteristic have faced expected criticism, particularly in the realm of homeowner’s insurance through a practice known as redlining.²⁶ The term redlining traditionally derives its name from the government’s 1930s practice of figuratively—or in many cases literally—drawing a red line around certain areas deemed unworthy of mortgage loans based on the minority racial status of the area’s residents.²⁷ The process was transparent: once an area was identified as minority-inhabited, insurance providers either imposed higher insurance premiums or categorically refused to insure homes located within its bounds.²⁸ Ultimately, the Fair Housing Act of 1968 outlawed this flamboyantly discriminatory practice.²⁹

However, despite efforts to eradicate this practice, redlining still appears to be alive and well.³⁰ Unlike traditional redlining, in which

24. Although an estimated forty-four percent of Americans actually believe that red sports car owners are subject to higher insurance premiums, insurance providers maintain that car color does not actually affect their calculus and that the “red car” idea is simply a myth. See Sarah Whitten, *Do Drivers of Red Cars Really Pay More for Auto Insurance?*, CNBC (Sept. 21, 2015, 12:01 AM), <http://www.cnbc.com/2015/09/18/do-drivers-of-red-cars-really-pay-more-for-auto-insurance.html> [https://perma.cc/89MK-LMMH].

25. See SCHAUER, *supra* note 21, at 5 (“[I]n the vast majority of instances the actuarial behavior of the insurance industry is accepted simply as a fact of life.”).

26. *Id.* at 4–5 & n.2; see Emily Badger, *Redlining: Still A Thing*, WASH. POST (May 28, 2015), <https://www.washingtonpost.com/news/wonk/wp/2015/05/28/evidence-that-banks-still-deny-black-borrowers-just-as-they-did-50-years-ago/> [https://perma.cc/LR5U-5VRU] (describing the historical roots of redlining).

27. See Badger, *supra* note 26.

28. *Id.*

29. *Id.*

30. *Id.*

actuaries unapologetically based their determinations *solely* on the racial makeup of a neighborhood, modern redlining is less facially discriminatory.³¹ Rather, its discriminatory nature stems from its definition of risk.³² Depending on the specific type of homeowner's insurance sought, risk may be defined by the age of the home; a low fair market value; a likelihood of burglary, vandalism, or other property damage; and so forth.³³ However, these characteristics are disproportionately found in the lower socioeconomic, high-crime, older neighborhoods that racial minorities often call home.³⁴ Therefore, minority individuals are disproportionately affected by the higher risk level assigned to them by modern redlining techniques, despite the fact that these lines are no longer technically drawn solely based on race.

While innocuous at first glance, the example of modern redlining serves as a reminder that “permissible stereotyping” is easily weaponized. Although this process is no longer inherently race-based, defining risk in a way that substantially and negatively impacts minority populations allows insurance providers to perpetuate the systematic discrimination faced by these groups. Thus, as a consumer of this sort of statistical evidence, it is crucial to understand how variables are operationalized.

2. Life Tables, Forensic Economists, and Lost Earnings Calculations

In cases involving wrongful death or permanent physical injury, the plaintiff (or the plaintiff's survivors) generally must be compensated for both present and future damages. Future damages allow the

31. See Matthew Jordan Cochran, *Fairness in Disparity: Challenging the Application of Disparate Impact Theory in Fair Housing Claims Against Insurers*, 21 GEO. MASON U. C.R.L.J. 159, 172 (2011).

32. *Id.*

33. *Id.* (describing riskier properties as “older homes, structures with low market values, and properties in dangerous and deteriorating conditions”).

34. Gregory D. Squires, *Race, Politics, and the Law: Recurring Themes in the Insurance Redlining Debate*, in *INSURANCE REDLINING: DISINVESTMENT, REINVESTMENT, AND THE EVOLVING ROLE OF FINANCIAL INSTITUTIONS* 1, 11 (Gregory D. Squires ed., 1997) (noting, for example, the disproportionate number of older homes owned by African Americans). Today's redlining describes an allegedly race-neutral analysis. See Cochran, *supra* note 31, at 172; see also *N.A.A.C.P. v. Am. Family Mut. Ins. Co.*, 978 F.2d 287, 290 (7th Cir. 1992) (“Risk discrimination is not race discrimination.”). Redlining recently came into the public spotlight as a result of the collapse of the housing market in 2008, which many associate with predatory lending in certain redlined districts—a process known as “reverse redlining.” See Badger, *supra* note 26 (discussing a Wisconsin-based bank's two hundred million dollar redlining settlement with the Department of Housing and Urban Development). In fact, the Supreme Court recently granted certiorari to determine whether cities affected by the retail redlining practices of private banks may bring an action under the Fair Housing Act. See *Bank of Am. Corp. v. City of Miami*, 136 S. Ct. 2544 (2016).

plaintiff to recover for foreseeable expenses associated with the premature diminishment of his or her life, including tangible costs like future medical expenses and speculative costs like future lost earnings. Quantifying future damages requires a basic understanding of life expectancy and worklife expectancy, which life tables readily provide.

Life tables are simply statistical predictions of numerical figures such as life expectancy or lost worklife, based on past data.³⁵ As mentioned in the Introduction, life tables index the average number of years of life remaining for an individual who has reached a given age.³⁶ While race- and gender-neutral tables are certainly available, many commonly used life tables present this data according to race, gender, and combinations of race and gender.³⁷

Figure 1³⁸

Age	All Races & Origins			White			Black		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
0	78.8	76.4	81.2	79.1	76.7	81.4	75.5	72.3	78.4
1	78.3	75.9	80.6	78.5	76.1	80.7	75.3	72.2	78.2
10	69.4	67.0	71.7	69.6	67.3	71.8	66.5	63.4	69.3
20	59.6	57.3	61.9	59.8	57.5	62.0	56.8	53.7	59.5
30	50.1	48.0	52.1	50.2	48.2	52.3	47.4	44.6	49.8
40	40.7	38.7	42.6	40.8	38.8	42.7	38.2	35.6	40.4
50	31.6	29.7	33.3	31.7	29.9	33.4	29.4	27.0	31.5
60	23.2	21.7	24.6	23.3	21.7	24.6	21.6	19.5	23.3
70	15.6	14.4	16.5	15.6	14.4	16.5	14.8	13.2	15.9
80	9.1	8.3	9.7	9.1	8.3	9.7	9.1	8.0	9.7
90	4.6	4.1	4.8	4.5	4.0	4.8	5.1	4.5	5.2
100	2.3	2.0	2.3	2.2	2.0	2.3	2.8	2.6	2.8

Life expectancy tables, also known as mortality tables, assist the jury in determining the plaintiff's future medical expenses and future pain and suffering. The tables allow jurors to conceptualize how long the plaintiff will in fact be capable of incurring such expenses, given

35. Lost working life is often simply an easier and more inclusive way to quantify lost wages. See Martha Chamallas, *Questioning the Use of Race-Specific and Gender-Specific Economic Data in Tort Litigation: A Constitutional Argument*, 63 *FORDHAM L. REV.* 73, 79 (1994) (noting how the focus on what the injured plaintiff "could have earned [through work-life], as opposed to what they would have earned [through lost wages]" allows for compensation to injured plaintiffs who are homemakers or work in other roles not typically compensated by the traditional market (emphasis added)). For a further discussion of the potential benefits of relying on lost worklife, see *infra* Section III.B.

36. See, e.g., Arias et al., *supra* note 9, at 3.

37. *Id.*

38. Figure 1 shows the typical layout of a standard life expectancy table. This table is based on data excerpted from the U.S. Life Tables. See *id.*

their current age.³⁹ From this starting point, certain downward adjustments may be made based on specific health defects or prior injuries of the plaintiff.⁴⁰

Worklife tables assist the jury in determining the appropriate amount of compensation for future lost earning capacity. An assessment of future lost earnings is simply a comparison of the amount the injured party was capable of earning preinjury with the amount that he or she is capable of earning postinjury.⁴¹ Beginning with a worklife expectancy table to establish the period of time left in the plaintiff's working life, additional information regarding the specific work history of an injured plaintiff is incorporated to determine the dollar value of the loss.⁴²

The life tables used in the adversarial setting come from a number of sources. Most courts permit practitioners to supply their own tables, although some courts require the mandatory use of state-codified mortality tables.⁴³ Many practitioners routinely rely on life tables and worklife tables produced by the federal government. These include the U.S. Life Tables,⁴⁴ which are created by the Department of Health and Human Services, and the Bulletin 2254 Worklife Tables,⁴⁵ which were created by the Bureau of Labor Statistics in 1984. Notably, the Bulletin 2254 Worklife Tables have not been updated since their

39. Many practitioners rely on the U.S. Life Tables, which are produced by the federal government and include different statistical variations based on gender, race, and combinations of gender and race. *See id.*

40. This figure, known as the Relative Mortality Ratio, provides a ratio for which to compare the individual's mortality risk to the mortality risk of the general population. *See* Robert J. Thornton & Frank Slesnick, *New Estimates of Life Expectancies for Persons with Medical Risks*, 10 J. FORENSIC ECON. 285, 285 (1997). Generally, because life tables are not meant to be conclusive, a plaintiff's preexisting health condition does not affect the admissibility of a life table, but rather goes toward the weight to be afforded to the evidence. *See, e.g., In re Estate of Eggleston*, 698 N.W.2d 892, 897 (2005) ("Where a dispute exists regarding the health of a person whose life expectancy is in issue, the mortality tables are admissible. . . . But the trier of fact may or may not use the mortality tables depending on the disposition of the disputed question of fact."). Although not discussed at length in this Note, an additional factor for consideration would be the disparate degree to which particular health risks disproportionately affect certain racial minorities (for example, sickle cell trait in African Americans), thereby decreasing indicated life expectancy.

41. Chamallas, *supra* note 35, at 79.

42. *See id.* at 79. This information often includes things like level of educational attainment, working history, and so forth.

43. *See, e.g.,* N.C. GEN. STAT. ANN. § 8-46 (West 2016). Notably, the North Carolina Mortality Table is a race- and gender-neutral life table.

44. *See* Arias et al., *supra* note 9.

45. *See, e.g.,* U.S. DEP'T. OF LABOR BUREAU OF LABOR STATISTICS, WORKLIFE ESTIMATES: EFFECTS OF RACE AND EDUCATION (1986), <https://www.bls.gov/opub/reports/worklife-estimates/archive/worklife-estimates-1986.pdf> [<https://perma.cc/E7ZZ-KBEY>] (relying primarily on data from 1979–1980 for its estimates); *see also* Ellison v. United States, No. 09-0331, 2011 WL 13136515, at *26 (E.D. Pa. Sept. 14, 2011) (noting the expert's reliance on the BLS worklife tables as a foundation for his calculation).

original production in 1984 and rely on data collected prior to 1981.⁴⁶ In addition to government-produced tables, many practitioners rely on existing standardized tables created by highly regarded economists, such as the Skoog, Ciecka, and Krueger worklife tables.⁴⁷ Others create and update their own tables using recently available data.⁴⁸

In some cases, parties introduce life tables directly into evidence to allow the jurors to draw their own conclusions.⁴⁹ When submitted alone, the tables are generally accompanied by jury instructions using permissive language instructing jurors that they *may* look to factors such as age, life expectancy, worklife expectancy, and the like to compute future damages.⁵⁰ Further, while jurors are certainly required to consider the evidence illustrated by the tables, there is no explicit obligation to incorporate this evidence into their final damages assessment.⁵¹

More commonly, however, life tables instead serve as a foundation for more advanced calculations by expert witnesses. The experts testifying in these cases are generally forensic economists or

46. See U.S. DEPT. OF LABOR BUREAU OF LABOR STATISTICS, *supra* note 45 (describing the data collection methods). The Bulletin 2254 Worklife Tables are the last set of worklife tables produced by a United States government agency. See Gary R. Skoog & James E. Ciecka, *Evolution of Worklife Expectancy Measurement*, in FORENSIC ECONOMICS: ASSESSING PERSONAL DAMAGES IN CIVIL LITIGATION 33, 35 (Frank Tiwari ed., 2016).

47. Frank L. Slesnick, Michael R. Luthy & Michael L. Brookshire, *A 2012 Survey of Forensic Economists: Their Methods, Estimates, and Perspectives*, 24 J. FORENSIC ECON. 67, 86 (2013) (discussing the Skoog, Ciecka, and Krueger Tables).

48. See, e.g., David Millimet et al., *Estimating Worklife Expectancy: An Econometric Approach*, 113 J. ECONOMETRICS 83 (2003) (introducing a new methodology for creating worklife tables based on updated data); Daniel L. Millimet et al., *Detailed Estimation of Worklife Expectancy for the Measure of Human Capital: Accounting for Marriage and Children*, 24 J. ECON. SURV. 339 (2010) (relying on the methodology used in the 2003 study to “construct even more detailed worklife tables based on gender, age, education, race, marital status and parental status, conditional on current labour force status”). Generally, additional options include relying on the life-participation employment technique (LPE Model) or choosing a standardized year to end work-life (such as the time when Social Security benefits kick in). See Michael L. Brookshire & Frank L. Slesnick, *Forensic Economists and Their Changing Viewpoints Over Time*, in FORENSIC ECONOMICS: ASSESSING PERSONAL DAMAGES IN CIVIL LITIGATION 205, 213 (Frank Tiwari ed., 2016).

49. See, e.g., *Kay v. Menard*, 754 A.2d 760 (R.I. 2000) (upholding the admissibility of life tables directly into evidence without explanation by an expert).

50. Statistical evidence in this capacity, and in many, is not provided to conclusively determine the exact life expectancy or numerical figure, but rather is meant as “an illuminative guidepost for the jury to reasonably estimate the plaintiff’s loss by using statistical variables that reflect the available objective traits of the plaintiff.” Douglas M. Foley, Note, *Infants, Lost Earning Capacity, and Statistics: Sound Methodology or Smoke and Mirrors?*, 13 GEO. MASON U. L. REV. 827, 841 (1991).

51. See *Reilly v. United States*, 863 F.2d 149, 167 (1st Cir. 1988) (“[Life-tables] of this sort ‘are merely guides to assist a court or jury in arriving at its verdict.’” (citing *Gonyer v. Russell*, 160 F. Supp. 537, 540 (D.R.I. 1958))).

vocational rehabilitation specialists.⁵² Beginning with the time periods provided by the life tables, experts incorporate additional information regarding the specific plaintiff into their calculations. Depending on the level and depth of the qualifying factors used, these figures can paint a remarkably accurate picture of future damages, thus meeting the compensatory goal of tort damages.

When determining future lost earnings, the expert's goal is to calculate the total amount of income foregone as a result of the plaintiff's diminished earning capacity, discounted back to today's dollars.⁵³

$$PV_{A, t_0} = \sum_{t=1}^{WL} [E_{N, t_0}] \left[\frac{1}{1+(i+g)} \right]^t$$

In reaching this value, experts generally rely on four basic elements: (1) anticipated annual base earnings,⁵⁴ (2) the growth rate of such earnings,⁵⁵ (3) the remaining worklife expectancy period,⁵⁶ and (4) a discount rate.⁵⁷ Experts provide a more individualized consideration of the specific working history of the plaintiff, which theoretically should yield a more accurate anticipated annual base income and therefore a more accurate result. However, as explored in Part II, the accuracy of the output may be prejudicially manipulated in a way that obscures an honest, predictive reading.⁵⁸

52. See, e.g., G.M.M. *ex rel.* Hernandez-Adams v. Kimpson, 116 F. Supp. 3d 126, 131 (E.D.N.Y. 2015) (relying on a forensic rehabilitation expert and two forensic economists); Johnson v. Montoya, 308 P.3d 566, 568 (Utah Ct. App. 2013) (relying on a vocational expert and an economist expert).

53. The equation explains that the Present Value [PV] of the plaintiff's lost earnings beginning from the chosen starting age [A] through the end of the worklife [t₀] is equal to the sum of the stream of payments available throughout the worklife, based on the annual base earnings level [E_{N, t₀}], discounted back to present value by the chosen discount rate $\left[\frac{1}{1+(i+g)} \right]^t$, where g represents the chosen growth rate and i represents the interest rate.

54. The anticipated annual base income is the "actual or projected before-tax income." Childs v. United States, 923 F. Supp. 1570, 1574 (S.D. Ga. 1996).

55. The growth rate in amount of earnings accounts for extrinsic factors such as inflation, as well as intrinsic factors such as career progression. See *id.*

56. Worklife expectancy represents the "probable length of time a person would have remained in the workforce, taking into account periods of voluntary and involuntary unemployment." See *id.*

57. The appropriate discount rate is needed to discount the cash flows back to present value. See *id.* The determination of the appropriate discount rate is often hotly contested. For a more detailed discussion, see William P. Jennings & Penelope Mercurio, *Selection of An Appropriate Discount Rate in Wrongful Death and Personal Injury Cases*, 14 J. CONTEMP. L. 195, 200 (1988).

58. See Childs, 923 F. Supp. at 1579 ("[B]ecause no one can know what [the infant decedents'] educational and occupational achievement would have been, the experts were at liberty to make

Ultimately, lost earnings calculations become problematic in cases where there is no information regarding individualized features such as educational attainment or career trajectory to help inform the selection of an anticipated annual base salary.⁵⁹ Where the injured plaintiff is a young child, these calculations come to resemble mere guesses, for while child-plaintiffs may certainly recover for lost earnings, such figures are often “speculative and fraught with difficulties.”⁶⁰ To solve this problem, experts often include multiple predictions about future earnings based on several hypothetical educational attainment outcomes.⁶¹ For example, different projections are made assuming the child attained a high school degree, a bachelor’s degree, a master’s degree and so forth.⁶² However, it is in this realm of injured children where race-based and gendered data often constitutes the bulk of the calculation, given the lack of other reliable information.⁶³ Race-specific and gender-specific tables narrow the analysis to essentially a race-specific and/or gender-specific appraisal.⁶⁴ Thus, the lost earnings calculation for an African American male infant may rely solely on life tables describing African Americans and males, with both classifications yielding statistically shorter work-lifespans than their respective Caucasian or female counterparts.⁶⁵ As such, this practice caps the range of available damages to these plaintiffs.

assumptions consistent with the interests of the party for which they were testifying.”); *infra* Section II.A.I.

59. See, e.g., *Childs*, 923 F. Supp. at 1579 (noting the “illusory” nature of the “mathematical precision by which all [the] experts” valued the lives of the decedents: a six-year-old child and an unborn infant).

60. *Estevez v. United States*, 72 F. Supp. 2d 205, 210 (S.D.N.Y. 1999) (quoting *Kavanaugh v. Nussbaum*, 514 N.Y.S. 55, 59 (N.Y. App. Div. 1987)).

61. See Lawrence M. Spizman, *Estimating Educational Attainment and Earning Capacity of a Minor Child*, in FORENSIC ECONOMICS: ASSESSING PERSONAL DAMAGES IN CIVIL LITIGATION 75, 75 (Frank Tiwari ed., 2016).

62. *Id.*

63. See Chamallas, *supra* note 35, at 82. (“[E]xperts tend most often to resort to gender-based and race-based statistics when the injured party has only a limited or nonexistent work history.”).

64. See Martha Chamallas, *Civil Rights in Ordinary Tort Cases: Race, Gender, and the Calculation of Economic Loss*, 38 LOY. L.A. L. REV. 1435, 1439 (2005) (“[C]omparing, for example, women only to other women, blacks to blacks, and men to men.”).

65. See *infra* Fig.2 (noting an African American male aged zero to one has a life expectancy of 71.1 years, as opposed to the gender-neutral and race-neutral calculation of 78.5 years; the race-neutral male calculation of 76.0 years; the African American gender-neutral calculation of 74.5 years; and the African American female calculation of 77.6 years).

*B. Recent Rejections of Raced-Based and Gendered Evidence at Trial:
Selected Examples*

1. Judge Weinstein's Initial Rejection: The *McMillan* Rule

In *McMillan v. City of New York*, the plaintiff, an African American male, suffered a severe spinal cord injury following a ferryboat crash.⁶⁶ In determining the plaintiff's future damages, the defendant's expert attempted to rely on data showing that African Americans who suffer from spinal cord injuries tend to have shorter lifespans than "other 'races'" suffering from similar injuries.⁶⁷ Summarily rejecting the use of race-based life expectancies, Judge Weinstein supported his position with a thorough analysis of the "factual unreliability" of race-based data and the equal protection and due process violations inherent in their use.

As an initial matter, Judge Weinstein examined the extensive body of social and anthropological scholarship that considers race to be a simple "biological fiction."⁶⁸ Focusing on the lack of genetic variation between different racial groups, Judge Weinstein instead posited that "race" is simply a social construct that has little, if anything, to do with biological variance.⁶⁹ Thus, according to this argument, race alone cannot inherently predict life expectancy. Moreover, Judge Weinstein examined the unreliability of rigidly defined racial categories, a topic explored in depth in Part II.⁷⁰ Next, he considered the incomplete picture provided by focusing on race alone, suggesting that other factors may be to blame for the apparent life expectancy gap between certain races.⁷¹ Finally, noting the distinct lack of previous constitutional challenges, Judge Weinstein briefly discussed the constitutional problems associated with relying on race-based data at trial, discussed further in Part II.⁷²

2. Criminal Restitution: *United States v. Bedonie*

The need to quantify life expectancy and lost earnings exists outside of civil damages. Similar calculations are often necessary when determining restitution in criminal cases involving victims who suffer

66. 253 F.R.D. 247, 248 (E.D.N.Y. 2008).

67. *Id.*

68. *Id.* at 249–50. To punctuate his point that race is in fact a fictional concept, all references to race and racial categories throughout the opinion are set off by quotation marks. *See id.*

69. *Id.* at 250.

70. *Id.*

71. *Id.*

72. *See infra* Part II.

severe personal injury or death. In *United States v. Bedonie*, a federal district court awarded full restitution under the Mandatory Victims Restitution Act in two consolidated homicide cases.⁷³ Over the objections of the defendants *and* the government, the court appointed an expert to determine the lost earnings of the victims: a twenty-two-year-old Native American male and a three-month-old Native American female.⁷⁴ Upon noticing the expert's initial reports were calculated based on the victims' Native American race and respective genders, the court became "concerned about possible constitutional and other problems in relying on race and sex assumptions."⁷⁵ However, the court chose to avoid "reaching constitutional questions in advance of the necessity of deciding them" when it instructed the court-appointed expert to recalculate restitution using race- and gender-neutral data.⁷⁶ The court instead relied on its discretion, claiming that:

As a matter of fairness, the court should exercise its discretion in favor of victims of violent crime and against the possible perpetuation of inappropriate stereotypes This is particularly true in this case, where the defendants have deprived their victims of the chance to excel in life beyond predicted statistical averages.⁷⁷

Rather, the court placed the burden on the defendants to prove that race and gender were necessary components of the calculation.⁷⁸

On appeal, the U.S. Court of Appeals for the Tenth Circuit affirmed the district court's decision to exclude race and gender, finding no abuse of discretion.⁷⁹ Noting that while 18 U.S.C. § 3664(e) imposes the burden of proving loss on the government, the statute also allows matters to be shifted to "the party designated by the court as justice requires."⁸⁰ Thus, the district court did not err in its decision to place

73. 317 F. Supp. 2d 1285, 1293 (D. Utah 2004), *rev'd on other grounds and remanded sub nom* *United States v. Serawop*, 410 F.3d 656 (10th Cir. 2005).

74. *Id.* at 1290.

75. *Id.* at 1314. In an sad twist of events, the defendant also attempted to discount his daughter's future earning capacity by relying on the fact that "she resided in a household where *he* was abusive." *Id.* at 1322. He claimed that given his history of domestic violence, the chance that his daughter would go on to graduate from high school was much lower, and therefore this personalized factor should be accounted for when calculating restitution. *Id.* The court squarely rejected the defendant's attempt "to creative [sic] an abusive family situation and then argue that, because of this abuse, his daughter was less likely to succeed in a life." *Id.* This provides an interesting example of a defendant attempting to reduce an award based on the plaintiff's socioeconomic status.

76. *Id.* at 1319 (quoting *Lyng v. Nw. Indian Cemetery Protective Ass'n*, 485 U.S. 439, 445 (1988)).

77. *Id.*

78. *Id.*

79. *United States v. Serawop*, 505 F.3d 1112, 1127 (10th Cir. 2007).

80. *Id.* (citing 18 U.S.C. § 3664(e) (2012)).

the burden on the defendant to prove that race-based and gendered statistics were *necessary* aspects of the restitution calculation.⁸¹

3. Criminal Sentencing: *Buck v. Davis*

Even beyond life expectancy and lost earnings calculations, race-based evidence often finds its way to trial. Recently, it found its way to the Supreme Court. In *Buck v. Davis*, the defendant, an African American male, was convicted of capital murder.⁸² At the sentencing phase of his trial, state law instructed that the jury was entitled to sentence the defendant to death “only if it found unanimously and beyond a reasonable doubt” that the defendant was likely to commit future acts of violence.⁸³ The defense counsel called a court-appointed psychologist to testify regarding the issue.

In determining the defendant’s likelihood of recidivism, the expert “considered seven ‘statistical factors,’” including the defendant’s African American race.⁸⁴ In a written report (which was subsequently admitted into evidence), the expert wrote: “Black: increased probability. There is an overrepresentation of Blacks among the violent offenders.”⁸⁵ Further, when testifying, the expert claimed that race was among “certain factors . . . ‘know[n] to predict future dangerousness.’”⁸⁶ Although the expert ultimately concluded that the defendant did *not* pose a future danger of reoffending, the damage was done.⁸⁷ The defendant was sentenced to death.⁸⁸

In light of the defense counsel’s prior knowledge of the expert’s reliance on race, the Supreme Court held that the decision to elicit specific testimony regarding the defendant’s race constituted ineffective assistance of counsel.⁸⁹ Further, the district court’s denial of the defendant’s Rule 60(b)(6) motion based on its finding that race played only a *de minimis* role in sentencing was an abuse of discretion.⁹⁰

While *Buck v. Davis* is clearly confined to the solemnest of situations where an expert’s testimony “expressly makes a defendant’s race pertinent on the question of life or death,” many of the same rationales for excluding race-based expert testimony apply to civil

81. *See id.*

82. 137 S. Ct. 759, 768 (2017).

83. *Id.*

84. *Id.*

85. *Id.*

86. *Id.* at 769.

87. *Id.*

88. *Id.*

89. *Id.* at 780.

90. *Id.*

damages.⁹¹ In writing for the majority, Chief Justice Roberts describes the “perfect storm” created when an expert introduces evidence that coincides with existing racial prejudice.⁹² Clearly this harm is not limited to the criminal context. Similar to the “particularly noxious strain of racial prejudice” that leads people to believe African American men are prone to violence, some jurors may believe that minorities or women are inherently worthy of earning less. Thus, having an expert speak to this exact issue at trial may validate their existing discriminatory prejudices. Further, the immutable character of race certainly applies equally in the civil setting.⁹³ In writing for the majority, Chief Justice Roberts makes much ado of the fact that “one thing would never change: the color of [the defendant’s] skin.” Similarly, an injured plaintiff is unable to change his or her skin color to escape racial stereotypes that may prevent adequate recovery.

C. The Special Circumstances of Lead Paint Cases: A Case Study

1. The Historical Use and Dangers of Lead-Based Paint

The use of race-based statistics in the commonly known “lead paint cases” presents a particular problem given the disproportionate number of minority children serving as injured plaintiffs.⁹⁴ In 1978, the federal government banned the sale of lead-based paint for commercial uses.⁹⁵ However, according to the Environmental Protection Agency, lead poisoning remains the number one environmental health threat to children in the United States ages six and younger.⁹⁶ Young children are particularly susceptible to the negative effects of lead exposure due to their developmentally fragile state and proclivity for hand-to-mouth contact.⁹⁷

91. *Id.* at 777.

92. *Id.* at 769. Admittedly, the “storm” Chief Justice Roberts was referring to was exacerbated in this case by the fact that the evidence was introduced by a court-appointed expert. *Id.* at 777.

93. *Id.* at 776. (“But one thing would never change: the color of [the defendant’s] skin. [The defendant] would always be black.”).

94. See Laura Greenberg, Comment, *Compensating the Lead Poisoned Child: Proposals for Mitigating Discriminatory Damage Awards*, 28 B.C. ENVTL. AFF. L. REV. 429, 430 (2001).

95. See CPSC Announces Final Ban on Lead-Containing Paint, U.S. CONSUMER PROD. SAFETY COMM’N (Sept. 2, 1977), <http://www.cpsc.gov/en/Recalls/1977/CPSC-Announces-Final-Ban-On-Lead-Containing-Paint/> [perma.cc/B6HT-D92T].

96. See Press Release, Donna Heron, Env’tl. Prot. Agency, Lead Poisoning: Number One Environmental Health Threat to Children Ages Six and Younger in the U.S., https://archive.epa.gov/epapages/newsroom_archive/newsreleases/5e312cbe6666dca8852579340068ebef.html [https://perma.cc/W6T5-J89B].

97. Mayo Clinic Staff, *Lead Poisoning: Symptoms and Causes*, MAYO CLINIC (Dec. 6, 2016), <http://www.mayoclinic.org/diseases-conditions/lead-poisoning/symptoms-causes/dxc-20275054> [https://perma.cc/4KLF-T3BY].

Unfortunately, the low-income housing often associated with minority populations tends to have a disproportionate amount of lead-based paint hazards, given the lack of improvements to these deteriorating structures and the unavailability of funding for updating purposes.⁹⁸ Older lead-based paint is often simply painted over as a way of avoiding the extensive removal costs.⁹⁹ However, when the substance is not completely removed, the risk remains and becomes especially pervasive once the top level of paint is disturbed. Because the residents of these lead-infested buildings are often racial minorities, evidence at trial regarding the statistically shorter lifespan of minority populations is especially damaging. Further, because these injured plaintiffs are children, this race-centric data often takes center stage and becomes outcome-determinative.¹⁰⁰ Thus, the compounding of race with age leads to a particularly helpless situation for these young plaintiffs.

Ultimately, some scholars suggest that situations like these create perverse incentives for tortfeasors.¹⁰¹ Because the cost of injuring these populations is reduced, potential tortfeasors may be less cautious when dealing with them. For example, consider a landlord who owns two residential buildings: one whose residents are all Caucasian males and one whose residents are all Hispanic females. If lead-based paint is found and the landlord is sued, the residents in the Caucasian male building will cost the landlord much more in damages than the residents in the Hispanic female building. Thus, if given the opportunity to choose between protecting the two groups, the rational self-serving landlord will exercise greater care to prevent harms to the Caucasian males than to the Hispanic females.

98. David E. Jacobs et. al., *The Prevalence of Lead-Based Paint Hazards in U.S. Housing*, 110 ENVTL. HEALTH PERSP. A599, A606 (2002) (finding that thirty-five percent of low-income housing within the United States contained lead-based paint hazards).

99. *Id.* at A599 (“Unless proper precautions are implemented, lead-based paint can contaminate dust or soil when it . . . is disturbed during maintenance, repainting, remodeling, demolition, or paint removal.”).

100. *See supra* Section I.A.2.

101. *See Chamallas, supra note 64*, at 1441 (“[B]ecause it is cheaper to injure poor minority children, there is less incentive for defendants to take measures to clean up toxic hazards in the neighborhoods most affected by lead paint.”). For additional examples of the perverse incentives created by race-based damages, see Ronen Avraham, *Torts and Discrimination*, 78 OHIO ST. L.J. (forthcoming 2017).

2. Judge Weinstein on Lead-Based Paint:
G.M.M. ex rel. Hernandez-Adams v. Kimpson.

In a recent lead paint case in the Eastern District of New York, Judge Weinstein reiterated the fact that “[b]ecause low-income and minority families are more likely to occupy older homes with lead-based paint, the majority of children poisoned by lead in the United States are poor African-American and Latino children.”¹⁰² Although noting the OMB’s practice of distinguishing between race and ethnicity, for purposes of his analysis, Judge Weinstein treated ethnicity-based data as largely similar to race-based data.¹⁰³

In *G.M.M. ex rel. Hernandez-Adams*, the infant-plaintiff was a young Hispanic male who was exposed to lead-based paint in his Brooklyn apartment when the family dog scratched the apartment walls and released the toxins.¹⁰⁴ After finding the defendant-landlord liable, the determination of damages focused on the typical lost earning capacity question: “what the child would have become without the injury.”¹⁰⁵ To assist the jury in this determination, the plaintiff and the defendant presented their respective experts, who each relied on the child’s Hispanic ethnic classification in their calculations.

The plaintiff’s expert relied mostly on the educational and vocational attainment of the child’s parents; he premised his opinion on the idea that:

[W]e see children achieving higher levels of education, educational achievement, than their parents as a generality. And it is particularly true in Hispanic families. . . . [Hispanics] came from backgrounds, many of them, without substantial educational histories. . . . So . . . within the Hispanic population there is even a more pronounced tendency for their children to have higher levels of educational achievement than their parents.¹⁰⁶

Thus, classification as Hispanic boded well for this young boy, given that his mother held a master’s degree and his father held a bachelor’s degree.¹⁰⁷ If this expert’s projections were taken to pass, then at least master’s degree-level compensation (and potentially even doctorate degree-level compensation) would be required.¹⁰⁸ Thus, the plaintiff’s

102. *G.M.M. ex rel. Hernandez-Adams v. Kimpson*, 116 F. Supp. 3d 126, 130 (E.D.N.Y. 2015).

103. *Id.* at 148 (“Ethnicity, like race, as discussed in *McMillan*, is a fictitious, changing, and unreliable social construct); *see also id.* at 152 (“The use of race-based statistics to obtain a reduced damages award—which is now extended to the use of ethnicity-based statistics, to calculate future economic loss—is unconstitutional.”).

104. *Id.* at 131.

105. *Id.*

106. *Id.* at 132.

107. *Id.* at 129.

108. *Id.*

expert relied on ethnic stereotyping to *increase* the amount of damages receivable, a concept explored in depth in Section III.B.¹⁰⁹

The plaintiff's expert also relied substantially on the parent's socioeconomic standing, a metric complexly related to race and ethnicity.¹¹⁰ While the expert claimed that ethnicity played a minimal role in his calculation, it is important to note that many of the factors used were themselves related to race and ethnicity, including socioeconomic status, projected educational attainment, worklife expectancy, and so forth. Ultimately, the plaintiff's expert projected an economic loss of approximately \$2.5 million to \$4 million.¹¹¹

On the other hand, the defendant's forensic economist used ethnicity to *decrease* the amount of damages, focusing instead on the general earning capacity of Hispanic males. His calculations relied on "Hispanic males' education statistics" and "Hispanic males' academic achievements" to arrive at a significantly smaller award than the plaintiff's expert.¹¹² He approximated an economic loss of \$1.3 million to \$2.5 million.¹¹³

Addressing both experts, Judge Weinstein determined that any predictions about the infant's future earning capacity must be calculated completely devoid of his Hispanic ethnicity.¹¹⁴ Relying heavily on his previous exclusion of race-based statistics in *McMillan v. City of New York*, Judge Weinstein again noted the concept of race as a biological fiction, the unreliability of definitive racial categories, the intricate connection between socioeconomic status and race, and finally the unconstitutionality associated with using race as a means to decrease damages.¹¹⁵

109. *See infra* Section III.B.

110. *G.M.M. ex rel. Hernandez-Adams*, 116 F. Supp. 3d at 132–33 (describing the cross examination of the plaintiff's expert); *see infra* Section III.A.

111. *Id.* at 134–35.

112. *Id.* at 135.

113. *Id.*

114. *Id.* at 134 (noting Judge Weinstein's comment that "Hispanics is too general a category. . . . You'll have to be more definitive with respect to this particular family. We have professors as well as gardeners who are Hispanics, and I don't believe that we ought to go forward in federal court with that assumption of uniformity.").

115. *Id.* at 134–35. For a further discussion of Judge Weinstein's constitutional analysis, see *infra* Part II.

II. PROBLEMS WITH STATISTICAL DAMAGES

A. *The Impracticality of Current Statistical Metrics:
Applicability Concerns*

1. The Reference Class Problem and Overfitting

The reference class problem refers to the inherent aspect of user-selection involved when making statistical inferences.¹¹⁶ Because statistical inference requires “abstracting a person (or event or thing) to a few salient characteristics, and then comparing that person with others having the same or similar characteristics,” the characteristics that we choose to focus on when describing that person (or event or thing) will definitively determine the scope of the resulting inferences. Thus, because there are often countless ways to describe a single thing, the predictive worth of any inference relies upon the chosen frame of reference.¹¹⁷

For example, consider the commonly cited statistic that heart disease is the leading cause of death, accounting for approximately one out of every four deaths annually.¹¹⁸ This statistic does not apply evenly to all populations.¹¹⁹ Instead, studies show that the risk of contracting heart disease is highly correlated with factors such as age, race and ethnicity, geography, family history, and existing medical conditions.¹²⁰ For instance, in reality, only 18.4% of American Indian deaths are attributable to heart disease, as compared to 23.8% of non-Hispanic Whites.¹²¹ Additionally, individuals living in the southeastern United States are disproportionately susceptible to death by heart disease when compared to their fellow citizens in the northwestern United States.¹²² Thus, the type of statistical inputs used to reach this idea of “one out of every four deaths” is crucial. Presumably, that reference class meant to capture the blended average of all races and geographical locations. However, when the reference class is concentrated on a particular subpopulation, such as American Indian males or American Indian males living in the northwestern United States, the outcome is substantially different.

116. See Edward K. Cheng, *A Practical Solution to the Reference Class Problem*, 109 COLUM. L. REV. 2081, 2085 (2009).

117. *Id.*

118. See *Heart Disease—Fact Report*, CTRS. FOR DISEASE CONTROL & PREVENTION (Aug. 10, 2015), <https://www.cdc.gov/heartdisease/facts.htm> [<https://perma.cc/BE2T-J9NP>].

119. *Id.*

120. *Id.*

121. *Id.*

122. *Id.*

Ultimately, statistical inference is very much the result of choice.¹²³ The decision to include or exclude certain inputs can have remarkable effects on the output, and therefore, the predictive value of the calculation.¹²⁴ Practitioners and their experts are often able to obscure values in favor of their clients by relying on certain variables to create desirable outcomes.¹²⁵ These differential inputs and the results they produce often set the stage for a “battle of the experts” at trial, and the nonexpert jury is left to make an assessment that scholars and experts continue to debate: what is the correct reference class?

For example, in *G.M.M. ex rel Hernandez-Adams*, the experts’ respective judgments as to the young boy’s future lost earnings were the clear result of choice.¹²⁶ The plaintiff’s expert focused on the “educational and vocational accomplishments of parents and adults who are around a child during that developmental process.”¹²⁷ Because the child’s mother held a master’s degree, the child’s father held a bachelor’s degree, and both individuals were gainfully employed in well-paying jobs, the use of these factors painted a positive picture of the child’s future lost earnings. Further, the expert redirected the child’s Hispanic race (which on average results in lesser educational attainment) to claim, “within the Hispanic population there is even a more pronounced tendency for their children to have higher levels of educational achievement than their parents.”¹²⁸ In terms of reference class, the plaintiff’s expert applied a more individualized class, incorporating several different variables. Instead of focusing on sweeping generalizations about Hispanic males, the expert attempted to probe at characteristics more unique to the child.

The defense, on the other hand, focused much more generally on the traditional educational attainment of Hispanic males, suggesting that only 2.1% of Hispanic males held a master’s degree or better.¹²⁹ The exclusion of the parents’ educational and occupational attainment

123. See Frank D. Tinari, *An Introduction to the Field of Forensic Economics*, in FORENSIC ECONOMICS: ASSESSING PERSONAL DAMAGES IN CIVIL LITIGATION 1, 5 (Frank Tiwari ed., 2016). (“[I]t must be reiterated that the forensic economics methodology, though not complicated, requires consideration of numerous elements of each particular case. Choices must be made by the analyst at nearly every turn.”).

124. See Cheng, *supra* note 116, at 2085.

125. See Edward K. Cheng, *Law, Statistics, and the Reference Class Problem*, 109 COLUM. L. REV. SIDEBAR 92, 93 (2009) (“As long as counsel manipulates the reference class sufficiently, he can arrive at any . . . number he wants.”).

126. See *G.M.M. ex rel. Hernandez-Adams v. Kimpson*, 116 F. Supp. 3d 126, 132 (E.D.N.Y. 2015).

127. *Id.* at 131.

128. *Id.* at 132.

129. See *id.* at 135 (citing the National Center for Education Statistics).

substantially lowered the amount of damages available. Similarly, the inclusion of the child within the broad class of Hispanic males further decreased the figure.

Ultimately, the reference class problem becomes particularly tricky when too many variables are incorporated into the calculation.¹³⁰ In those instances, what may seem like a very accurate model (given a high coefficient of determination) may actually be inaccurate. Instead, the fit may simply be due to statistical noise resulting from a superfluous number of included attributes.¹³¹

For example, consider John from the Introduction.¹³² If the plaintiff's expert were to make statistical predictions based solely off of John's status as an African American, then this number would likely lack an accurate depiction of his actual earning potential. However, attempting to include every single available reference point (his race, gender, parents' educational attainment, parents' marital status, parents' income, number of siblings, geographical location, etc.) may potentially result in a high degree of statistical noise and an equally inaccurate depiction. This type of overfitting permits experts to use complicated calculations as a smoke screen to obscure the actual process behind arriving at their final figure—a figure that is actually just the result of statistical noise. Thus, it is important that when choosing a reference class, the expert does not overfit the data by including too many variables.¹³³

Statistical evidence is subject to a great deal of manipulation, particularly in areas like damages calculations where a broad universe of possible variables and reference classes exist. While the inclusion of *too few* variables will result in low accuracy, the inclusion of *too many* variables will “overfit” the data— both resulting in a lack of predictive worth.¹³⁴

2. Blurred Lines: Mixed Race and Transgendered Individuals

The inclusion of race-based and gendered qualifiers becomes particularly hazy in instances where categories mix and rigid lines are impossible to draw. Given the increased prevalence of interracial

130. See Cheng, *supra* note 116, at 2095 (“[I]f the court uses characteristics that are too narrow, then it will run the risk of incorporating noise and random coincidence.”).

131. *Id.* at 2093 (“Too complex a model will incorporate too much random noise into its inferences about future observations and will . . . be inaccurate.”).

132. See *supra* Introduction.

133. Cheng, *supra* note 116, at 2092–93.

134. See *id.* at 2093 (“Too simple a model will fail to identify the underlying relationship and have low predictive accuracy. Too complex a model will incorporate too much random noise into its inferences about future observations and will also be inaccurate.”).

relationships and complex gender identities beyond the classic male-female divide, an entirely new problem is erupting for traditional race-based and gendered statistical evidence.¹³⁵ The current regime, based solely on binary gender options and the seven major racial categories,¹³⁶ does not appear equipped to handle the challenges posed by a new generation of multiracial and genderqueer individuals.¹³⁷

The issue has already arisen in relatively simple cases involving biracial plaintiffs. For example, in *Wheeler Tarpeh-Doe v. United States*, a jury faced the predicament of calculating damages for an injured biracial infant.¹³⁸ Because the young boy's mother was Caucasian and his father was African American, the court confronted the question of which of these categories to assign when presenting worklife tables.¹³⁹ The court was forced to decide: should the boy be considered Caucasian (like his mother) or African American (like his father) for the purposes of these statistical predictions? In rejecting the defendant's argument that the "average black male" statistic was the appropriate measure, the court held that it would be "inappropriate to incorporate current discrimination resulting in wage differences between the sexes or races or the potential for any future such discrimination into a calculation for damages resulting from lost wages."¹⁴⁰ Instead, the court chose the "average wage[] for all persons," relying on a blended average of all racial categories and both traditional genders.¹⁴¹

In application, it should be noted that the court's decision to incorporate the average female wage by relying on the blended average actually reduced the value below the defendant's proposed value, which

135. See Lise Funderburg, *The Changing Face of America*, NAT'L GEOGRAPHIC (Oct. 2013), <http://ngm.nationalgeographic.com/2013/10/changing-faces/funderburg-text> [https://perma.cc/8MFK-P4X8] (discussing the new racial environment of the United States and the need to reconsider existing notions of race and identity). The article discusses the United States' Census Bureau's inclusion of a multiracial category in the 2000 census, at which point 6.8 million Americans identified as multiracial. *Id.* In the 2010 census, that figure rose by thirty-two percent. *Id.* However, given that respondents are able to select more than one category when self-reporting their race, Census data on race is remarkably complicated.

136. The 2010 census listed the seven major racial classifications: White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian or Other Pacific Islander, and Some Other Race. See *2010 Census Demographic Profile Summary File*, U.S. CENSUS BUREAU 6-3 to 6-4 (Aug. 2011), <http://www.census.gov/prod/cen2010/doc/dpsf.pdf> [https://perma.cc/8EMA-D9H8].

137. The term genderqueer serves as an inclusive term for transgendered and gender-variant individuals. See Pauline Park, *GenderPAC, the Transgender Rights Movement and the Perils of a Post-Identity Politics Paradigm*, 4 GEO. J. GENDER & L. 747, 754 (2003).

138. *Wheeler Tarpeh-Doe v. United States*, 771 F. Supp. 427, 454 (D.D.C. 1991), *rev'd sub nom.* *Tarpeh-Doe v. United States*, 28 F.3d 120 (D.C. Cir. 1994).

139. *Id.* at 455.

140. *Id.*

141. *Id.* at 456.

relied on data based on African American males.¹⁴² Using a calculation devoid of *all* qualifying factors impacted the injured party's recovery in a counterintuitive way. Much of the negative visceral reaction to race-based and gendered statistical evidence stems from the idea that minorities and women will always be negatively impacted, whereas Caucasians and males will always be made better off. However, as *Wheeler Tarpeh-Doh* illustrates, the exclusion of certain race- or gender-based figures can become something of a give-and-take battle. While the inclusion of the all-race metric increased the amount of potential damages, the simultaneous inclusion of the all-gender metric brought the figure crashing back down.¹⁴³

Assuming that race-based and gendered statistical predictions are in fact permitted, one option to address the difficulty in classifying multiracial individuals would be simply to create new categories with respect to the individual's unique racial makeup. For example, the solution in *Wheeler Tarpeh-Doe* would be to place the plaintiff in the statistical class of other biracial males sharing similar racial backgrounds—in this case Caucasian and African American parents.¹⁴⁴ While this option may currently be feasible for certain individuals based on similar racially identified populations, the difficulty quickly compounds in a situation involving the multiracial child of two biracial parents. For example, if the child's mother is of African American and Caucasian descent, and the child's father is of American Indian and Asian descent, in what group should that child fall? For consistency, the child should similarly be compared to individuals with his or her same racial makeup. Therefore, the appropriate comparator is persons with a similarly mixed racial background of African American, White, American Indian, and Asian descent.

However, finding reliable data on a class of individuals sharing this unique makeup may be a difficult task at this point. More time may be needed for a large enough class of individuals to produce meaningful data on life expectancy, worklife expectancy, salary, and so forth for these predictions to be useful. Further, even if enough data were produced for one class of multiracial individuals, at some point attempting to classify an individual based on their distinct racial makeup may become an impossibly convoluted endeavor.¹⁴⁵ This idea echoes the reference class problem mentioned above: theoretically, the

142. *See id.* ("The average wages for all persons are lower than the average black male wages; thus, the incorporation of women's expected earnings lowers the estimate even further than defendant's estimate.")

143. *Id.*

144. *Id.*

145. *See* Funderburg, *supra* note 135, and text accompanying note 135.

class could eventually become so narrow that it becomes entirely unique and no workable inferences could be drawn.¹⁴⁶

Continuing to assume that race-based and gendered statistics are accepted, another option would be to simply consider the existing statistical predictions for each major race making up the individual's racial identity and combine these figures for a mean average. However, how much of one race would be statistically significant in the makeup of a multiracial individual? Much like the blood quantum laws for Native Americans or the "one drop rule" for African Americans, would the injured party need to definitively prove that he or she is in fact a descendant of the proposed race?¹⁴⁷ Further, as with any mean average, outliers may seriously obscure the validity of the output. Finally, as a practical matter, presenting such reasoning in court may prove challenging; explaining these methods may simply confuse the jury.

A similar difficulty occurs when applying gendered statistics to the genderqueer community. While the current gender system accounts for a dichotomous choice, many consider gender to be much more fluid.¹⁴⁸ For example, should a postoperative male-to-female transgendered individual be treated differently from a male-to-female transgendered individual in the earliest stages of transition? Further, should the individual be classified according to her original anatomical sex of male, or rather the gender with which she identifies?

Much like the solution in situations involving multiracial individuals, it is presumably possible that new categories of gender could be created and accounted for as needed. However, such data would likely take years to amass. And similar to the evolved understanding of multiracial individuals, there appears to be a growing recognition of gender fluidity.¹⁴⁹ This suggests that whatever figures were created may require continual revision to account for new

146. See *supra* Section II.A.

147. See Craig J. Dorsay, *Blood Quantum Issues and Other Challenges for Tribal Attorneys and Their Clients*, in BEST PRACTICES FOR DEFENDING TRIBAL MEMBERSHIP CASES 55 (2013), 2013 WL 5293044 (discussing the practical problems associated with enforcing blood quantum laws); Christine B. Hickman, *The Devil and the One Drop Rule: Racial Categories, African Americans, and the U.S. Census*, 95 MICH. L. REV. 1161, 1187 (1997) (discussing the formal adoption of the one-drop rule by the U.S. Census in 1920).

148. See Katy Steinmetz, *Beyond 'He' or 'She': The Changing Meaning of Gender and Sexuality*, TIME, Mar. 27, 2017, at 50.

149. See e.g., Emma Green, *Does Adding 'Genderqueer' to the Dictionary Make it 'Real'?*, ATLANTIC (Apr. 25, 2016), <https://www.theatlantic.com/entertainment/archive/2016/04/genderqueer-cisgender-transphobia-merriam-webster/479406/> [<https://perma.cc/3ZSH-SDKX>] (noting the addition by Merriam-Webster of several terms relating to sexuality and gender identity to its dictionaries); Ruth Padawer, *What's So Bad About A Boy Who Wants To Wear A Dress?*, N.Y. TIMES (Aug. 8, 2012), <http://www.nytimes.com/2012/08/12/magazine/whats-so-bad-about-a-boy-who-wants-to-wear-a-dress.html> [<https://perma.cc/HTX2-Q83J>].

variations. Further, the sensitive and personal nature of gender identification suggests that perhaps rigidly operationalizing it as a variable is neither appropriate nor accurately possible.

Even if data on transgendered persons could be produced to accurately predict the intended values for the intended individuals, one of the most basic problems remains: the perpetuation of systematic discrimination. The transgendered community perhaps serves as one of the best illustrations of statistically determined damages preserving the disadvantaged status of a population. Transgendered individuals suffer from a long history of discrimination in a wide variety of aspects of their lives, ranging from employment and housing to criminal justice.¹⁵⁰ As a result of this stigmatization, transgendered individuals tend to face disproportionately high rates of unemployment and homelessness.¹⁵¹ Thus, including a gender-based predictor that reflected this victimized status may only perpetuate the historically poor treatment of society's most neglected victims.

However, in spite of the magnified problems that occur when traditional race and gender categories blur, the merits of statistical evidence should not be completely discarded. After all, there is undeniable relief in the objectivity inherent to statistical predictions that make them so attractive in making sense of particularly blurry areas.

B. The Elephant in the Room: Constitutional Concerns

Though relatively unchallenged in the judicial system thus far, the constitutional questions surrounding the use of race-based and gendered statistics typically arise in the context of equal protection and due process.¹⁵² As a threshold matter, only those race-based and gendered classifications that constitute state action can validly support challenges under the Fourteenth Amendment.¹⁵³ Recognizing the high bar required to prove such violations, this Note presents Judge

150. See Jaime Johnson, *Recognition of the Nonhuman: The Psychological Minefield of Transgender Inequality in the Law*, 34 LAW & PSYCHOL. REV. 153, 154 (2010) (mentioning primary areas of discrimination as "employment, family law, healthcare, criminal justice, housing, and immigration").

151. *Id.* at 162 (discussing the pervasive legal and judicial inaction in response to the legal and social problems faced by the transgendered community).

152. Notably, a review of the literature and case law suggests a normative acceptance of race-based statistics as constitutionally sound.

153. *The Civil Rights Cases*, 109 U.S. 3, 11 (1883) ("It is State action of a particular character that is prohibited. Individual invasion of individual rights is not the subject matter of the amendment.").

Weinstein's possible arguments for asserting a race-based challenge.¹⁵⁴ In producing these arguments, Judge Weinstein relied substantially on the scholarship of Professor Martha Chamallas, which is also presented below.

According to Judge Weinstein, the argument for a violation of equal protection proceeds as follows. It is a well-established tenet of constitutional law that the classification of individuals on the basis of race creates a suspect category.¹⁵⁵ Beginning with its original articulation in *Korematsu v. United States*, the Supreme Court has long held that explicit racial classifications trigger strict scrutiny.¹⁵⁶ Under strict scrutiny, racial classifications will be upheld as constitutional "only if they are narrowly tailored to further compelling government interests."¹⁵⁷

Applied to civil damages, a judge's decision to allow race-based economic evidence to be introduced at trial can be interpreted as judicial reliance, thereby constituting state action and triggering strict scrutiny.¹⁵⁸ While normally the judge's decision to admit evidence does not offer insight into his or her personal opinions of the evidence, race-based economic data is unique. For example, the decision to admit eyewitness testimony does not inherently indicate that the judge believes the eyewitness is reliable.¹⁵⁹ On the other hand, the decision to admit race-based evidence "conced[es] the relevance" of racial considerations. Therefore, the judge's admission constitutes state action by allowing the jury to believe that reliance on race-based considerations is legally appropriate, thereby establishing "a common law rule that the future earning capacity of the plaintiff depends upon" race.¹⁶⁰ Thus, subjecting the plaintiff to a decreased life expectancy on the basis of his or her race violates equal protection.¹⁶¹

Several problems arise when attempting to bring an equal protection challenge under this line of reasoning. Despite creative

154. While this discussion focuses on race-based data, it should be noted that challenges based on gendered statistics face an even higher hurdle. Because classifications based on gender simply trigger intermediate scrutiny, the action need only be "substantially related to an important government objective." *Clark v. Jeter*, 486 U.S. 456, 461 (1988).

155. *McMillan v. City of New York*, 253 F.R.D. 247, 255 (E.D.N.Y. 2008) (citing *United States v. Carolene Products Co.*, 304 U.S. 144, 152 n.4 (1938)).

156. 323 U.S. 214, 216 (1944) ("It should be noted that . . . all legal restrictions which curtail the civil rights of a single racial group are immediately suspect. . . . Pressing public necessity may sometimes justify the existence of such restrictions; racial antagonism never can.").

157. *Grutter v. Bollinger*, 539 U.S. 306, 326 (2003).

158. *McMillan*, 253 F.R.D. at 255 (citing *Edmonson v. Leesville Concrete Co.*, 500 U.S. 614, 620–28 (1991); *Shelley v. Kraemer*, 334 U.S. 1, 14–21 (1948)).

159. See Chamallas, *supra* note 35, at 106.

160. *Id.*

161. *McMillan*, 253 F.R.D. at 255.

arguments by Judge Weinstein and Professor Chamallas, it is not explicitly clear that the type of judicial reliance described constitutes state action. In supporting their argument, both Judge Weinstein and Professor Chamallas rely on the Supreme Court's decision in *Edmonson v. Leesville Concrete Company*, which held that race-based preemptory challenges exercised by private litigants during a civil trial constituted state action.¹⁶² However, preemptory challenges and economic evidence are readily distinguishable as a matter of state of action. As an initial consideration, preemptory challenges have "no utility outside of the jury system, a system which the government alone administers."¹⁶³ On the other hand, economic evidence can be used in a number of settings beyond trial, including during settlement negotiations in which the government has no role.¹⁶⁴ Further, even at trial, the government cannot explicitly exercise control over experts' findings beyond qualifying experts and admitting their testimony.

Additionally, in terms of impact, decisions made during voir dire necessarily infect the entirety of the trial by choosing who gets to participate as a trier of fact. Thus, preemptory challenges directly affect the outcome of the trial. However, race-based data is simply evidence to be *considered* by those chosen triers of fact; jurors are not explicitly obligated to rely on this evidence. As such, it seems the possible effects of discrimination during voir dire far exceed the possible effects of discrimination during the presentation of evidence. As a final practical consideration, *Edmonson* explicitly holds that it is the excluded jurors whose equal protection rights are violated by this state action.¹⁶⁵ However, in the realm of civil damages, it is presumably the plaintiff who seeks to prove that the inclusion of race-based considerations violates his or her own equal protection rights.

Regarding due process concerns, Judge Weinstein explains the existence of "a right—in effect a property right—to compensation" of an injured party under state and federal law.¹⁶⁶ Because substantive law restricts the form and content of expert evidence offered at trial, the court's admission of race-based evidence creates arbitrary and irrational state action.¹⁶⁷ Thus where a court permits "ill-founded assumption[s]" to be included at trial, this action arbitrarily "burden[s]

162. 500 U.S. 614 (1991).

163. *Id.* at 622.

164. Chamallas, *supra* note 35, at 107.

165. *Edmonson*, 500 U.S. at 614 ("Race-based exclusion of potential jurors in a civil case violates the excluded persons' equal protection rights.").

166. *McMillan*, 253 F.R.D. at 255.

167. *Id.*

on ‘racial’ grounds a class of litigants who seek compensation,” thereby constituting a denial of due process.¹⁶⁸

Although distinct from civil damages, the Supreme Court recently found that such “ill-founded assumptions” are to be treated with particular care when considering due process in the criminal setting.¹⁶⁹ In *Pena-Rodriguez v. Colorado*, a jury convicted the petitioner of harassment and unlawful sexual contact.¹⁷⁰ After the verdict was rendered, two jurors informed the petitioner’s counsel of several derogatory statements made by another juror during deliberations regarding the petitioner’s Hispanic ethnicity.¹⁷¹ Specifically, that juror repeatedly contended that “Mexican men” were physically controlling and abusive towards women and, therefore, that the petitioner was guilty.¹⁷² Further, because the juror considered the petitioner’s alibi witness to be “an illegal,” he discounted the alibi testimony as untruthful.¹⁷³ Upon reporting this information to the court, the petitioner’s counsel memorialized the reporting witnesses’ statements in written affidavits.¹⁷⁴

Denying the petitioner’s motion for a new trial based on this information, the trial court noted the juror’s bias but held that Colorado Rule of Evidence 606(b) summarily prohibited the presentation of any evidence pertaining to matters or statements that occurred during jury deliberations in a proceeding questioning the validity of the verdict.¹⁷⁵ On appeal, the Colorado Court of Appeals and the Colorado Supreme Court upheld the trial court’s decision, relying on precedent suggesting that the jury’s right to confidential deliberations is paramount to the effective administration of justice.¹⁷⁶

The United States Supreme Court reversed.¹⁷⁷ In piercing the impressive shield provided by Federal Rule of Evidence 606(b) and related state evidentiary rules, the Supreme Court held that “where a juror makes a clear statement that indicates he or she relied on racial stereotypes or animus to convict a criminal defendant, the Sixth

168. *Id.* at 256.

169. 137 S. Ct. 855 (2017).

170. *Id.* at 861.

171. *Id.*

172. *Id.* at 862.

173. *Id.*

174. *Id.*

175. *Id.* Colorado Rule of Evidence 606(b) is substantially similar to Federal Rule of Evidence 606(b). Compare COLO. R. EVID. 606(b) (“Inquiring into validity of verdict or indictment.”), with FED. R. EVID. 606(b) (During an Inquiry into the Validity of a Verdict or Indictment . . .”).

176. *Pena-Rodriguez*, 137 S. Ct. at 862.

177. *Id.* at 869.

Amendment requires that the no-impeachment rule give way. . . .”¹⁷⁸ Distinguishing racial bias from other possible forms of juror bias, including substance abuse¹⁷⁹ and prodefendant bias,¹⁸⁰ the Court found that “[a] constitutional rule that racial bias in the justice system must be addressed—including, in some instances, after a verdict has been entered—is necessary to prevent a systemic loss of confidence in jury verdicts”¹⁸¹ In so ruling, the Court affirmed its dedication to rooting out racial bias, going so far as to reach into jury deliberations to be sure that it is avoided.

C. The Dangers of Stereotyping

Although questionably sound under existing constitutional doctrine, some may still find the practice normatively objectionable and hold the view, much like the one espoused by Judge Weinstein, that using innate physical characteristics such as race and gender is simply unacceptable. As constitutional and evidence law scholar Frederick Schauer notes,

When we examine the principle of treating like cases alike, we perceive an immediate difficulty, not because it is a bad thing . . . but because the principle . . . appears to be so vacuous as to be incapable of supporting the idea of equality, or indeed of supporting much of anything else.¹⁸²

Making generalizations about groups of people in this manner goes against the individualistic values that drive Western society. Further, life tables are inherently retroactive; that is, they base their statistical prediction off of past patterns. Thus, relying on such information may perpetuate institutionalized racism and discrimination.

Additionally, stereotyping with race and gender presents unique dangers. Because race and gender are highly visible and objectively verifiable characteristics, consumers of statistical information tend to overvalue their predictive worth.¹⁸³ For example, an expert may consider many variables when calculating an individual’s future lost earnings, including race, gender, socioeconomic status, educational attainment, and projected income. However, in consuming this

178. *Id.* at 869.

179. *Tanner v. United States*, 483 U.S. 107 (1987) (rejecting an exception for evidence suggesting that certain members of the jury were under the influence of drugs and alcohol throughout the trial).

180. *Warger v. Shauers*, 135 S. Ct. 521 (2014) (rejecting an exception for evidence suggesting that a juror lied about her pro-defendant biases during voir dire).

181. *Pena-Rodriguez*, 137 S. Ct. at 869.

182. SCHAUER, *supra* note 21, at 203.

183. *Id.* at 187.

information, jurors may be predisposed to rely more heavily on the race and gender aspects of this calculation because they can readily perceive these attributes. Unlike educational attainment or socioeconomic status (which may seem much more nebulous to jurors), verifying the plaintiff's race or gender is an objective process. Therefore, with something tangible to rely on, jurors may overestimate the predictive worth of these variables.

III. POSSIBLE ANSWERS

A. The Nuclear Option: Remove All Statistical Indicators

Heeding constitutional and normative arguments against the use of race-based and gendered statistics, one solution would be to simply remove them from the calculation. This approach was articulated by legislators in the proposed Fair Calculations in Civil Damages Act, which seeks to “prohibit a court from awarding damages based on race, ethnicity, gender, religion, or actual or perceived sexual orientation.”¹⁸⁴

However, the effects of race have proven particularly difficult to extinguish. For example, research suggests that socioeconomic status complexly interacts with, and is likely confounded by, race.¹⁸⁵ Understanding the racial component of socioeconomic status may be incredibly demanding. To truly prevent damages awards based on race, would experts also be barred from using data that could possibly be confounded with race? If so, variables beyond simply prima facie race, including highly predictive factors like socioeconomic status and occupational attainment, would also need to be removed. The only statistical evidence available would be based on a blended “average person,” with a complete disregard for individualized information regarding the plaintiff's gender, race, socioeconomic status, occupation, educational attainment, and other helpful qualifying variables.

Unfortunately, in practice, this method may remove any semblance of accuracy from the process. If the purpose of these calculations is to reimburse the plaintiff for losses suffered at the hands of the defendant, should the goal not be to achieve the most accurate

184. H.R. 6417, 114th Cong. (2016); S. 3489, 114th Cong. (2016).

185. See, e.g., David R. Williams et al., *Race, Socioeconomic Status and Health: Complexities, Ongoing Challenges and Research Opportunities*, 1186 ANNALS N.Y. ACAD. SCI. 69, 74 (2010) (“All indicators of SES are strongly patterned by race, with SES being a key determinant of racial disparities in health.”); see also P.L. McCarthy et al., *Race/Ethnicity, Gender, Socioeconomic Status—Research Exploring Their Effects on Child Health: A Subject Review*, 105 PEDIATRICS 1349, 1350 (2000); David R. Williams, *Race, Socioeconomic Status, and Health: The Added Effects of Racism and Discrimination*, 896 ANNALS N.Y. ACAD. SCI. 173, 173–88 (1999).

number possible? Removing these important qualifiers will ultimately severely overcompensate certain persons, while severely undercompensating others.¹⁸⁶ Because these calculations are the result of a great number of input factors, the removal of one factor may be to the plaintiff's benefit, whereas the removal of another may be to his detriment.

For example, once again consider John from the Introduction.¹⁸⁷ John was the African American male raised in a nuclear family setting whose parents held doctorate degrees and were employed as physicians. Applying the proposed methodology, John's African American racial status would be removed, thereby enhancing the amount of John's award.¹⁸⁸ However, at the same time, the additional information regarding his parents' impressive educational and occupational attainment would also be removed, as well as John's male gender. The removal of this information, which if included would bode favorably for John, severely decreases the value. Instead of receiving an award capable of compensating John for the actual injuries sustained, the figure instead represents a mean value devoid of any real assessment of John's unique circumstances and actual lost earning capacity. The goals of the tort system are likely not met by undercompensating John to such a degree.

B. Affirmative Action Damages?

While many, including Judge Weinstein, explicitly reject the use of race-based statistics in a discriminatory manner, perhaps this data could be permitted when it would benefit a traditionally disadvantaged plaintiff. Much like affirmative action in the education system, allowing race-based and gendered statistics to apply in beneficial circumstances may serve an important policy function. Such damages may compensate individuals who previously faced discrimination as a result of their membership in a certain racial class or may allow them to overcome future adversities caused by their class membership.

In fact, this "affirmative action"-type function was explicitly contemplated by Judge Weinstein outside of the damages context.¹⁸⁹ Specifically, Judge Weinstein considered the use of race-based statistics

186. *See infra* Section III.B.

187. *See supra* Introduction.

188. With regard to life expectancy, the U.S. Life Tables suggest this would result in a difference of 4.9 years. *See infra* Fig.2 (comparing the 71.1-year life expectancy of an African American male aged z with the 76.0-year life expectancy of a gender-neutral and race-neutral individual).

189. *Id.*

as applied to the *Graham* rule, which states “that juveniles cannot be kept in prison for a non-homicide offense for their full life without parole.”¹⁹⁰ In that case, Judge Weinstein suggested that using individualized race-based statistics could potentially reduce the sentences for certain juvenile defendants with statistically shorter lifespans.¹⁹¹

It is conceivable that a similar affirmative action-type assessment could occur when calculating civil damages, with similarly disadvantaged classes of people being provided with a “damages floor.” For example, consider the following life expectancies for an individual aged 0–1:

Figure 2

	Race-Neutral	Caucasian	African American	Hispanic
Gender-Neutral	78.5 years ¹⁹²	78.8 years ¹⁹³	74.5 years ¹⁹⁴	81.2 years ¹⁹⁵
Male	76.0 years ¹⁹⁶	76.4 years ¹⁹⁷	71.1 years ¹⁹⁸	78.7 years ¹⁹⁹
Female	80.9 years ²⁰⁰	81.2 years ²⁰¹	77.6 years ²⁰²	83.5 years ²⁰³

Using a measure devoid of any race- or gender-based information, the average life expectancy of an individual within the United States population is 78.5 years. Thus, reliance on the blended average increases the award available to an individual within the overall African American population (74.5 years) and to an African American male (71.1 years); it affirmatively assists the plaintiff and ensures they are compensated to this “average” degree.

190. G.M.M. *ex rel. Hernandez-Adams v. Kimpson*, 116 F. Supp. 3d 126, 158 (E.D.N.Y. 2015) (citing *Graham v. Florida*, 560 U.S. 48, 50 (2010)).

191. *Id.*

192. *National Vital Statistics Reports—United States Life Tables 2009*, CTR. FOR DISEASE CONTROL tbl.1 (2014), https://www.cdc.gov/nchs/data/nvsr/nvsr62/nvsr62_07.pdf [<https://perma.cc/M855-8UZ6>].

193. *Id.* tbl.4.

194. *Id.* tbl.7.

195. *Id.* tbl.10.

196. *Id.* tbl.2.

197. *Id.* tbl.5.

198. *Id.* tbl.8.

199. *Id.* tbl.11.

200. *Id.* tbl.3.

201. *Id.* tbl.6.

202. *Id.* tbl.9.

203. *Id.* tbl.12.

However, reliance on the blended average actually works to the detriment of the general Hispanic population (81.2 years), the average Hispanic male (78.7 years), and all females: within the general United States female population (80.9 years), the average Caucasian female (81.2 years), the average African American female (77.6 years), and the average Hispanic female (83.5 years). According to this outcome, reliance on neutral statistics actually undercompensates certain racial minorities and women. If the normative goal of monetary damages is to “make the plaintiff whole again,” then clearly using neutral statistics fails at least some plaintiffs.

Therefore, a possible approach would be to rely on the neutral statistics when it would assist the plaintiff (i.e., in the case of an African American male), while applying the more individualized statistics where the neutral measure would negatively impact the plaintiff's award (i.e., in the case of a Hispanic female). An attempt to manipulate the data in this way can be seen by the plaintiff's expert in *G.M.M. ex rel Hernandez*, through his proposition that Hispanic children tend to outperform their parents' educational attainment.²⁰⁴ In that case, the expert suggested that the child's ethnicity be considered in order to increase the final award.²⁰⁵ Instead of perpetuating the disadvantages faced by minorities by awarding them less than their Caucasian male counterparts, this approach seeks to equalize the end result.

Similar arguments can be made with respect to gender. When considering gender-specific data in the lost earnings context, the ever-referenced wage gap and female-to-male earnings ratio intuitively suggest that women receive less. However, when assessing lost earnings, it is important to consider women outside of the traditional waged labor environment. While household labor is not currently included in the United States gross domestic product (GDP), many economists recognize contributions to the home as productive work.²⁰⁶ At trial, some jurisdictions allow experts to present evidence of lost home production resulting from permanent impairment or death.²⁰⁷ To value these lost contributions, many experts consider replacement cost, which assesses these contributions according to the market value of the services rendered.²⁰⁸ Thus, a plaintiff who makes meals, cleans, tutors

204. See *supra* Section I.C.

205. *Id.*

206. See Joni Hersch, *Marriage, Household Production, and Earnings*, in *MARRIAGE AND THE ECONOMY: THEORY AND EVIDENCE FROM ADVANCED INDUSTRIAL SOCIETIES* 211 (Shoshana Grossbard-Schechtman ed., 2003).

207. *Id.* at 212.

208. *Id.*

her children, and performs maintenance work at home must be compensated at the market rate for these services.²⁰⁹

Valuing this type of unwaged labor in calculations of lost earnings allows women the opportunity to overcome the wage gap and receive awards that more adequately describe their loss. Further, contributions to the home likely continue long after the prescriptive “retirement age” faced by most workers in the traditional waged employment environment. Therefore, those performing home contributions conceivably have a much longer worklife expectancy than those engaged in the traditional workforce.

Thus, similar to race-based data, lost earnings calculations involving gendered data could provide women with a “damages floor.” In instances where female-specific data results in a lesser earning capacity, gender-neutral data should be used. However, where applying female-specific data (including contributions to the home) result in a *greater* award than the gender-neutral data, female-specific data should be used.

Ultimately, there are multiple significant problems which such an approach. Most notably, the rights of the defendants in such cases must be considered. Assuming that the plaintiff may in fact be heavily overcompensated in these situations, a single defendant is often responsible for footing the bill for this remedial justice. Is it fair to place society’s burden of compensating the victim of systematic discrimination on a single payer?

Another difficulty with “affirmative action damages” stems from the reference class problem.²¹⁰ While the average Hispanic male generally outlives the average Caucasian male by 3.4 years, there are numerous other variables that may ultimately suppress an individual Hispanic male’s award.²¹¹ Although using this race-specific statistic in the initial lifespan determination increases the award, including other variables such as Hispanic-specific educational attainment and Hispanic-specific socioeconomic status may once again decrease the value. Thus, in application, affirmative action damages are probably not a practical solution when multiple conflicting variables are considered.

209. *Id.*

210. *See supra* Section II.A.I.

211. *See supra* Fig.2.

C. A More Temperate Approach: Removing Prima Facie Race-Based and Gendered Statistics, While Employing Only the Most Recent Available Data in Other Statistical Predictions

Ultimately, this Note argues a position similar to that of many minority- and gender-rights advocates and demands the exclusion of race-based and gendered data. From a basic evidentiary standpoint, Rule 403 of the Federal Rules of Evidence likely requires this prohibition, given that the high danger of unfair prejudice clearly outweighs the probative value of these considerations.²¹² However, unlike the nuclear option mentioned above, this Note refuses to completely discard all statistical predictions.²¹³ To reconcile these issues, the appropriate course of action requires the statutory exclusion of prima facie race-based and gendered statistics, as was contemplated by the proposed Fair Calculations in Civil Damages Act.²¹⁴ As such, the current practice of relying on race- and gender-indexed life tables will be prohibited. Instead, experts may replace this data with more individualized factors such as socioeconomic status and educational attainment, which provide an equally capable proxy for meaningful prediction, yet avoid the constitutional and social concerns associated with race-based and gendered data. Particularly regarding socioeconomic status, some scholars claim that the alleged negative impacts suffered by racial minorities are primarily due to differences in economic characteristics and geography as opposed to simply race.²¹⁵ Therefore the prima facie removal of race will not affect the accuracy of the award to a significant degree, so long as economic characteristics and geography continue to be considered.

Once again, consider John from the Introduction.²¹⁶ Under this approach, John's status as an African American and a male would necessarily be excluded from the analysis. However, the information regarding his socioeconomic status, parents' educational attainment, and other such factors would readily be included in expert analyses in order to individualize the assessment. However, given the concept of overfitting discussed in Section II.A, only a few of these variables should be used at one time to create the statistical model.²¹⁷ Although many of

212. FED. R. EVID. 403.

213. See *supra* Section III.A.

214. H.R. 6417, 114th Cong. (2016); S. 3489, 114th Cong. (2016).

215. Arline T. Geronimus et al., *Inequality in Life Expectancy, Functional Status, and Active Life Expectancy Across Selected Black and White Populations in the United States*, 38 DEMOGRAPHY 227, 244 (2001).

216. See *supra* Introduction.

217. See *supra* Section II.A.I (discussing reference classes and the problem of overfitting).

these factors may be confounded with race, they are also correlated with things like personal drive, familial history, and, even to some degree, chance. Therefore, including them allows the expert to paint an accurately predictive picture of John's individual future earning capacity, which of course is the very point of the damages award.

In addition, this solution envisions a statutory mandate requiring any data used in these calculations to be continually updated, so as to avoid perpetuating systematic discrimination against lower socioeconomic status individuals. As such, any statistical measures relied on by the expert must be based on data that is collected or updated within five years from the date of the start of trial. Remarkably, many forensic economists continue to rely on worklife tables that are over thirty years old.²¹⁸ Keeping data new and relevant will prevent against what is likely the largest danger and criticism of using race-based and gendered statistics: the opportunity for these statistics to simply perpetuate discrimination against disadvantaged populations. Additionally, relying on recently updated data will better facilitate the inclusion of those individuals discussed in Section II.A who are currently unaccounted for in many of the existing tables. While relying on obsolete data preserves these discriminatory practices, data collected within the last five years will better reflect important changes in the social atmosphere.

It is not the statistician's duty to act as a social scientist to determine what role discrimination plays in the numbers produced; thus, this approach leaves the normative judgments to society and instead simplifies statistical analysis to its most pure purpose: achieving accurate predictive numbers based on existing data. Removing race-based and gendered classifications allows the expert to make an individualized determination based on the specific attributes of the plaintiff, while excluding racist and sexist considerations. Limiting the predictions to only the most recent data removes hypothetical projections about future rates of change while ensuring accuracy remains the key focus of the investigation.

Under this approach, major constitutional and social justice concerns are quelled. At the same time, statistical predictions can continue to assure the most accurate award is achieved, benefiting the plaintiff, the defendant, and the greater tort system.

218. See U.S. DEP'T. OF LABOR BUREAU OF LABOR STATISTICS, *supra* note 45.

CONCLUSION

The use of predictive statistics is an integral part of damages assessments in cases involving serious personal injury and death. The speculative nature of future damages offers parties, their experts, and the jury a great degree of latitude when calculating their estimated awards. Despite clear social justice issues associated with their use, race-based and gendered statistics and stereotypes have long infected these assessments. Through life tables and complex expert calculations, juries are continually encouraged to rely on the plaintiffs' immutable race and gender when tasked with determining their "worth."

However, recent developments in judicial and legislative thought suggest that race-based and gendered statistics will play a more limited role at trial going forward. Despite the predictive nature of these variables, the constitutional and impracticability hurdles associated with their use suggest that race and gender should no longer dominate the discussion of future damages. Rather, revising the current regime to replace race and gender with more fluid variables like socioeconomic status will adequately capture much of the same information while avoiding many of the dangers inherent in relying on such controversial characteristics. Where the inputs are not prima facie discriminatory and the integrity of the data can be ensured, both the plaintiff and the defendant can continue to benefit from the inclusion of forensic economics and statistical projections at trial.

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