The Reproducibility of Evolving Social Science Evidence and How It Shapes Equal Protection Jurisprudence

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Background

In *Korematsu v. United States*,[1] the United States Supreme Court held that strict scrutiny would apply to cases regarding statutes that create classifications based on race.[2] This means that the burden of proof is on the government to show that the challenged statute, law, or classification is narrowly tailored to serve a compelling state interest.[3] Furthermore, legal scholars attribute the influx in the application of sociological data into the federal courts' decisions to the "legal realist movement and its attempt to focus awareness on social context."[4] As the social sciences grew, practitioners, including leaders of socio-legal studies, began looking at the relationship between social sciences and law.[5] Psychologist, Hugo Münsterberg, advanced the idea that social sciences were necessary for the study of law.[6] Karl Llewellyn and Benjamin Cardozo promoted the development of the study of law based on social science evidence.[7]

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1. Korematsu v. United States, 323 U.S. 214 (1944) (The Supreme Court's analysis in *Korematsu* provides a backdrop for the standards of review that the Court considers appropriate in addressing Fourteenth Amendment violations.).

2. *Id.* at 216 ("It should be noted, to begin with, that all legal restrictions which curtail the civil rights of a single racial group are immediately suspect. That is not to say that all such restrictions are unconstitutional. It is to say that courts must subject them to the most rigid scrutiny."); *see also* DAVID L. FAIGMAN, LABORATORY OF JUSTICE: THE SUPREME COURT'S 200-YEAR STRUGGLE TO INTEGRATE SCIENCE AND THE LAW 255 (2004).

3. Geoffrey R. Stone et al., Constitutional Law 520–21 (7th ed. 2013).

4. Henry F. Fradella, *A Content Analysis of Federal Judicial Views of the Social Science "Researcher's Black Arts,"* 35 RUTGERS L.J. 103, 106 (2003).

5. *Id.*

6. *Id.*

7. *Id.*

Today, the majority of legislatures do not classify people in a manner that overtly disadvantages a particular population based on race within statutes.[8] However, even though some laws appear facially neutral, they may affect minority populations in disparate and detrimental ways.[9] For example, a law that places the death penalty in the discretion of the jury may, on its face, impact the population equally, only until there is proof that juries use such discretion, whether intentionally or subconsciously, to target certain races.[10] Disparate impact alone, however, is insufficient to require the Court to apply strict scrutiny.[11] The circumstances in which the law was imposed must be considered when showing that the underlying purpose was racially discriminatory, violating the Fourteenth Amendment's Equal Protection Clause.[12]

Furthermore, the role of social sciences in Equal Protection jurisprudence has long been a controversial topic. In 1896, the Court heard *Plessy v. Ferguson*, a case questioning the validity of a Louisiana statute authorizing "equal but separate" accommodations to blacks and whites.[13] The Court relied on notions of legal formalism and held that the statute was not unreasonable because it was based on social custom.[14] The Court noted that the argument "separate facilities are unequal" is a construction placed on the statute by the "colored race."[15] More specifically, the Court noted that the plaintiff's argument was based on the false notion that the "enforced separation" of races "stamps the colored race with a badge of inferiority."[16] The Court went further in stating that "[i]f this be so, it is not by reason of anything found in the act, but solely because the colored race chooses to put that construction upon it."[17] Justice Harlan wrote a memorable dissent, stating that "[o]ur Constitution is color-blind, and neither knows nor tolerates classes among citizens," thus advancing the belief that discriminatory laws should not be upheld.[18]

8. FAIGMAN, *supra* note 2.

9. *Id.*

10. See discussion of McCleskey v. Kemp, 481 U.S. 279 (1987) below.

11. FAIGMAN, *supra* note 2.

12. *Id.*

13. Plessy v. Ferguson, 163 U.S. 537, 540 (1896).

14. *Id.* at 550–51.

15. *Id.* at 551.

16. *Id.*

17. *Id.*

18. *Id.* at 559; *see generally* Molly Townes O'Brien, *Justice John Marshall Harlan as Prophet: The* Plessy *Dissenter's Color-Blind Constitution*, 6 WM. & MARY BILL RTS. J. 753 (1998).

More than fifty years after *Plessy*, the Supreme Court based a monumental decision partly on social science evidence appearing in the famous Footnote 11 of *Brown v. Board of Education*, written by Justice Warren.[19] The Court's holding in *Brown* echoed a more progressive view that racial segregation in schools constitutes a violation of the Fourteenth Amendment.[20]

Brown's Footnote 11 was highly debated by legal scholars who both applauded and criticized the Court for its application of social science evidence.[21] For some, the Court's citation ushered in a glimmering possibility that a relationship was beginning to develop between social sciences and the law, especially where public laws were implicated.[22] However, the development of this relationship was short-lived, and critics of this potential bond pointed to Justice Warren's remark that the footnote "was only a note, after all."[23] These scholars believed that Footnote 11 was just a way for the Court to arrive at a holding it was inevitably going to arrive at.[24] The *Brown* footnote placed both courts and judges in a position where they were to interpret information about topics unfamiliar to them, ultimately revealing the Court's limitations in understanding and interpreting expert evidence.[25] The Court in *Brown* confronted the Fourteenth Amendment in conjunction with "presenting the question of whether 'segregation of children in public schools solely on the basis of race . . . deprive[s] the children of the minority group of equal educational opportunities.'"[26] Constitutional law scholar, David Faigman, points out that

> [o]f the five traditional principles of constitutional adjudication, none squarely supports the decision [in *Brown*,] and several indicate a contrary result. The text of the [F]ourteenth [A]mendment is, at best, ambiguous on the matter, and the *Brown* result appears contrary to the framers' original intent.[27]

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19. Fradella, *supra* note 4, at 106; Brown v. Bd. of Educ., 347 U.S. 483, 494 n.11 (1954).

20. *Brown*, 347 U.S. at 494–95.

21. Rachel F. Moran, *What Counts as Knowledge? A Reflection on Race, Social Science, and the Law*, 44 LAW & SOC'Y REV. 515, 516 (2010).

22. *Id.* at 517.

23. *Id.* at 524.

24. *Id.*

25. *Id.* at 522 (citing Michael Heise, *Equal Educational Opportunity by the Numbers: The Warren Court's Empirical Legacy*, 59 WASH. & LEE L. REV. 1309, 1342 (2002)).

26. Fradella, *supra* note 4, at 107 (citing Brown v. Bd. of Educ., 347 U.S. 483, 493 (1954)).

27. *Id.* (citing David L. Faigman, *"Normative Constitutional Fact-Finding:" Exploring the Empirical Component of Constitutional Interpretation*, 139 U. PA. L. REV. 541, 567–68 (1991)).

Thus, Faigman suggests that the Court employed constitutional fact-finding in support of its ultimate holding.[28] While doing so, the Court's "review of social scientific evidence led the Supreme Court to answer the issue presented in *Brown* in the affirmative."[29]

Furthermore, others argue that there was no empirical question raised in *Brown*, thus social science data was not necessary in addressing the question before the Court.[30] Instead they advance the idea that there is no need for evidence towards the "'proposition that segregation is an insult to the Black community—we *know* it; we know it the way we know that a cold causes snuffles.'"[31]

Whether or not one agrees with the latter view, the Court chose to incorporate social science research backing its decision in *Brown*.[32] "That decision has palpable consequences when considering the question of how federal courts view the role of social science evidence in the adjudication process."[33] The Court's decision in *Brown* symbolizes the fact that the Supreme Court has recognized the importance of incorporating social science evidence in judicial fact-finding.[34]

Moreover, over fifty years have passed since the decision in *Brown* and there remains widespread disagreement about whether social science research has or should play a significant role in the jurisprudence regarding racial discrimination.[35] Today, legal scholars stress that social science

28. *Id.* at 107–08.

29. *Id.* at 108.

30. *Id.*

31. *Id.* (citing Ronald Dworkin, *Social Sciences and Constitutional Rights – The Consequences of Uncertainty*, 6 J.L. & EDUC. 3, 5 (1977)).

32. *Id.*

33. *Id.*

34. *Id.* Furthermore,

> The research the Supreme Court cited in *Brown* was one of the primary reasons the Court found that segregation violated the Equal Protection Clause of the Fourteenth Amendment. Moreover, [as scholars] point out, [t]he United States Supreme Court has received empirical social science data on many occasions in the wake of *Brown*. Prominent examples include social science's role in decisions concerning school desegregation, obscenity, segregation by gender, jury size, discriminatory death penalty, death-qualified juries, juvenile delinquency, discrimination, and Eighth Amendment death penalty challenges. Although social statistics did not form the basis for any of these decisions, the Court has increasingly engaged in consulting the social science literature, acknowledging that "legal theory is one thing. But the practicalities are different."

Michael Rustad & Thomas Koenig, *The Supreme Court and Junk Social Science: Selective Distortion in Amicus Briefs*, 72 N.C. L. REV. 111–12 (1993).

35. Moran, *supra* note 21, at 516.

practitioners remain unsure about their own neutrality and objectivity and face opposition being heard amongst a market of information and ideas based on questionable quality.[36] As a result, social scientists face backlash for the notion that their expertise is a proper foundation for legal decisions.[37]

Brown's influence in the legal community was expansive. Law professor, Michael Heise, argued that "'one of *Brown*'s critical—though underappreciated—indirect effects [is that of] transforming educational opportunity doctrine by casting it empirically.'"[38] He further argued that "the decision contributed to 'law's increasingly multidisciplinary character,' a change that greatly expands what counts as knowledge in the courtroom."[39] He suggests that the overarching role of *Brown* is that it established a new role for social sciences in law.[40] However, Heise's approach is only one opinion among many critics and proponents of the idea that *Brown* served a catalyst for the application of social sciences in law.[41]

I. The Court's Growing Hostility to the Application of Social Science Data and *McCleskey v. Kemp*

In considering subsequent U.S. Supreme Court holdings, it seems that the critics of social science evidence prevailed, as evidenced by the Court's growing hostility to the application of social science data to support lower court holdings.[42] In the seminal case of *McCleskey v. Kemp*, the Court considered a capital sentencing case with a defendant who presented social science data[43] to show that the death penalty was applied unfairly based on race.[44] The Court refused to incorporate social science data into their decision despite rendering the methodologies valid.[45] The Court went further in noting that evidence of existing disparities in the data was not considered proof of intentional and particularized discrimination against

36. *Id.*

37. *Id.*

38. *Id.* at 523 (citing Michael Heise, Brown v. Board of Education, *Footnote 11, and Multidisciplinarity*, 90 CORNELL L. REV. 279, 280 (2005)).

39. Moran, *supra* note 21, at 523.

40. *Id.*

41. *Id.* at 524.

42. *Id.* at 523–24; *see generally* Fradella, *supra* note 4.

43. David C. Baldus et al., *Comparative Review of Death Sentences: An Empirical Study of the Georgia Experience*, 74 J. CRIM. L. & CRIMINOLOGY 661, 753 (1983).

44. Moran, *supra* note 21, at 524.

45. *Id.* at 523–24.

McCleskey, which was the standard at the time and remains the standard to date. This standard is referred to as the "Intent Doctrine."[46] Looking forward, the comingling of race and capital sentencing in *McCleskey* provides a backdrop for analyzing how social science data should shape our understanding of the contours of the Equal Protection Clause of the Fourteenth Amendment.

The Intent Doctrine applied in *McCleskey* grew out of the *Washington v. Davis* and *Personnel Administrator of Massachusetts v. Feeney* era.[47] In *Washington v. Davis*, the Washington D.C. Police administered "Test 21" to all job applicants in order to measure "verbal ability, vocabulary, and reading comprehension."[48] Because black applicants failed the test at a higher rate than white applicants, the black applicants pointed to the disparate impact of the test's results as a violation of the Equal Protection Clause of the Fourteenth Amendment.[49] Their complaint hinged on the idea that there was no evidence that Test 21 tested the skills applicable to being a police officer.[50] The Court held that the disparate impact of the facially neutral civil service test was not enough to give rise to the application of strict scrutiny analysis.[51] Moreover, for the Court to adopt strict scrutiny in determining that a law, policy, or practice is in violation of the Equal Protection Clause, the plaintiffs would have to show discriminatory intent or purpose.[52] Without such a showing, the Court applied rational basis review.[53]

In *Personnel Administrator of Massachusetts v. Feeney*, the Court specified that the standard of purposeful discrimination offends the Constitution when analyzing the context of gender equality against the backdrop of veteran preference laws.[54] The holding in *Feeney* exemplified that in order to prove a Equal Protection Clause violation, the plaintiff must prove that a state legislature adopted the law "because of, not merely in spite of, its adverse effects" upon the affected group.[55] The majority

46. *Id.* at 524.

47. Washington v. Davis, 426 U.S. 229 (1976); Pers. Adm'r of Mass. v. Feeney, 442 U.S. 256 (1979).

48. *Davis*, 426 U.S. at 234–35 (citing the district court's "findings and conclusions" in Davis v. Washington, 348 F. Supp. 15 (D.D.C 1972)).

49. *Id.* at 237, 240.

50. *Id.* at 249.

51. *Id.* at 268–70.

52. *Id.*

53. Washington v. Davis, 426 U.S. 229, 259–60 (1976).

54. Pers. Adm'r of Mass. v. Feeney, 442 U.S. 256, 274 (1979).

55. *Id.* at 279 (internal quotation marks omitted).

opinion's application of purposeful discrimination then carried into *McCleskey*.[56]

There is still tension over which standard of review the Court should apply and how social science evidence might play a helpful role in Equal Protection jurisprudence. This raises an important question about whether there is an avenue by which the Court may understand and utilize social science data, allowing the judiciary to integrate social sciences in its holdings while applying its own doctrinal rules to arrive at fair and equitable decisions. Today, the Court continues to apply the Intent Doctrine established in *McCleskey*, despite more recent social science findings suggesting that humans have implicit biases.[57] Additionally, in 2015, Scientific Magazine published a study, *Estimating the Reproducibility of Psychological Science*, finding that only thirty-six percent of psychological studies are replicable.[58] These findings come with their own set of criticisms[59] but must still be accounted for in shaping our understanding of the contours of the Equal Protection Clause of the Fourteenth Amendment as well as how courts should utilize social science data given its evolving nature. This paper will discuss the implications that evolving social science data has on the adjudication of cases involving the Equal Protection Clause analyzed against the backdrop of *McCleskey*. Furthermore, it is important to emphasize the role that this evolving data has on our understanding of the law given its low rate of reproducibility.

A. Warren McCleskey's Attempt to Use Social Science Evidence

Warren McCleskey was an African-American male convicted of killing a white police officer in Georgia.[60] Unbeknownst to him, his case would go down in legal and political history as one of the most prominent challenges to the death penalty, weaving two highly sensitive topics into one case: race and capital punishment.[61] In facing punishment by death, McCleskey tried to show that the jury deciding whether he should be

56. *See generally* McCleskey v. Kemp, 481 U.S. 279 (1987).

57. *See generally* Anthony G. Greenwald & Mahzarin R. Banaji, *Implicit Social Cognition: Attitudes, Self-Esteem, and Stereotypes*, 102 PSYCHOL. REVIEW 4 (1995). See discussion of the Implicit Association Test ("IAT") below.

58. OPEN SCIENCE COLLABORATION, *Estimating the Reproducibility of Psychological Science*, 349 SCIENCE MAG. 943 (2015).

59. Benedict Carey, *Many Psychology Findings Not as Strong as Claimed, Study Says*, N.Y. TIMES (Aug. 27, 2015), http://www.nytimes.com/2015/08/28/science/many-social-science-findings-not-as-strong-as-claimed-study-says.html?_r=0.

60. FAIGMAN, *supra* note 2.

61. *Id.* at 255, 258.

sentenced to death was biased against him because of his race.[62] However, according to the Court, the only avenue for McCleskey to succeed would be to prove that the jury had a discriminatory purpose.[63] The Court in *Feeney* found that

> "discriminatory purpose" . . . implies more than intent as volition or intent as awareness of consequences. It implies that the decisionmaker . . . selected or reaffirmed a particular course of action at least in part 'because of,' not merely 'in spite of,' its adverse effects upon an identifiable group."[64] Thus, McCleskey had to prove that the jury intentionally and particularly discriminated against him, which proved to be a nearly impossible feat.[65]

Around the time of McCleskey's case, the results of the Baldus Study were released.[66] The lead researcher, David Baldus, along with his team examined roughly 230 variables to find which variable most influenced the decision to assign the death penalty.[67] They concluded that, all other things being equal, "defendants charged with killing white victims were 4.3 times as likely to receive a death sentence as defendants charged with killing blacks."[68] Thus, the study indicated that "juries considered crimes against whites to be more egregious than crimes against blacks and imposed punishments accordingly."[69] Put differently, African Americans were punished more harshly because of their race. The findings, based on race, are as follows[70]:

Race of Defendant	*Race of Victim*	*Death Sentencing Rates*
Black	White	.21 (50/233)
White	White	.08 (58/748)
Black	Black	.01 (18/1443)
White	Black	.03 (2/60)

62. *Id.* at 259.

63. *Id.*

64. McCleskey v. Kemp, 481 U.S. 279, 298 (1987) (citing Pers. Adm'r of Mass. v. Feeney, 442 U.S. 256, 279, 299 (1979)).

65. FAIGMAN, *supra* note 2, at 259.

66. *Id.* at 257.

67. *Id.*

68. *Id.* (citing McCleskey v. Kemp, 481 U.S. 279, 287 (1987)).

69. DAVID L. FAIGMAN, LEGAL ALCHEMY: THE USE AND MISUSE OF SCIENCE IN THE LAW 116 (1999).

70. Baldus et al., *supra* note 43.

Several commentators noted that the Baldus Study is highly credible and was "far and away the most complete and thorough analysis of sentencing that [had] ever been done."[71] McCleskey chose to introduce these findings to show that the death penalty was imposed upon him in a discriminatory manner.[72] The district court scrutinized the methodology applied in the Baldus Study despite the legal community's response that criticizing the Baldus Study without proper knowledge of the scientific methods applied would be improper.[73] However, the lower court judge noted that "in any event, the disparities were not proof of intentional discrimination against any particular defendant."[74] McCleskey's case then reached the Eleventh Circuit Court of Appeals,[75] followed by the Supreme Court.[76] Given the backlash that the district court faced for criticizing the studies' methodology, the Supreme Court assumed the validity of the Baldus Study, yet chose not to take its findings into consideration[77] despite the Court's apparent lack of understanding on how the psychological experiment was conducted.[78] McCleskey was then sentenced to death by lethal injection.[79]

Although the Court's willingness to ignore the findings of the Baldus Study led to McCleskey's death, the presence of systematic prejudice in the Georgia capital sentencing system was exposed.[80] The Court was going to uphold McCleskey's conviction either way, but now the public was made aware of the Court's willingness to ignore the presence of systematic discrimination.[81] Today—nearly thirty years later—there are further developments expanding what is known about the human mind as well as intentional versus implicit discrimination and biases. Yet, the Court still applies the same standard of individual and particularized discrimination. What can and should be done differently?

71. Fradella, *supra* note 4, at 110–11 (quoting Randall L. Kennedy, McCleskey v. Kemp: *Race, Capital Punishment, and the Supreme Court*, 101 HARV. L. REV. 1388, 1399 (1988)).

72. *Id.* at 110.

73. FAIGMAN, *supra* note 2, at 258; Moran, *supra* note 21, at 522.

74. Moran, *supra* note 21, at 524 (citing McCleskey v. Zant, 580 F. Supp. 338, 356–61, 379 (N.D. Ga. 1984).

75. McCleskey v. Kemp, 753 F.2d 877 (11th Cir. 1985).

76. McCleskey v. Kemp, 481 U.S. 279 (1987).

77. FAIGMAN, *supra* note 2, at 258.

78. FAIGMAN, *supra* note 69, at 118.

79. FAIGMAN, *supra* note 2, at 255.

80. FAIGMAN, *supra* note 69, at 118.

81. *Id.*

B. Issues with the Court's Holding in *McCleskey*

The Intent Doctrine required that McCleskey, who alleged an equal protection violation, establish that purposeful, particularized discrimination "had a discriminatory effect" on the outcome of his case.[82] However, statistics make this a nearly impossible requirement to meet.[83] For example, the Baldus Study stood for the proposition that juries in Georgia accounted for the race of the victim when making determinations of whether to impose the death penalty.[84] But, a study like this casts a glaring light on the population in its entirety and does very little to bolster arguments for particularized discrimination.[85] Constitutional law scholar, David Faigman, addresses this issue in his book, *Laboratory of Justice*, which discusses decision-makers involved in capital cases: "the prosecutor who decides whether to seek the death penalty, the jury who decides whether to impose it, and the judge who presides over the trial and who enters judgment when it is over—are not likely to admit that they discriminated."[86] Furthermore, because jury deliberations are not open to public scrutiny, the discriminatory backdrop remains and repeats within the confines of courts, prosecutors, and participating jury members as a continuous cycle.[87]

However, it is important to note: discriminatory actions that occur may be, for the most part, unconscious.[88] For example, the results of the Baldus Study signify that juries in Georgia place more value on white lives than black lives, which further points to the idea that their discriminatory actions are implicit rather than intentional.[89] Despite these results, Justice Powell concluded "that given the importance of upholding states' criminal laws against murder and the inevitable discretion inherent in carrying out these laws, more than a naked statistical showing was necessary to establish an equal protection violation."[90]

Furthermore, Faigman contends that "those who argue [that] the Supreme Court's use of empirical data was disingenuous failed to understand the process of legal reasoning as applied in the constitutional

82. FAIGMAN, *supra* note 2, at 259.
83. *Id.*
84. *Id.*
85. *Id.*
86. *Id.*
87. *Id.*
88. FAIGMAN, *supra* note 2, at 259; *see* Greenwald & Banaji, *supra* note 57.
89. FAIGMAN, *supra* note 2, at 259.
90. *Id.*

adjudication process."[91] Faigman's argument is furthered by his suggestion that the essential role of social science research forces the Court to take on and tackle the more difficult normative issues it faces.[92] In addressing *McCleskey*, Faigman states that

> the struggle to come to terms with the implications of racial bias in capital sentencing may have been buried in factual suppositions if not for the data. Furthermore, [t]he costs associated with transforming a whole body of law to accommodate inconvenient facts create an obstacle to unbridled discretion. By preventing the Court from inventing convenient facts, empirical research compels the Court to face up to the ramifications of its constitutional law-making.[93]

II. Trustworthy Evidence: The Court's Understanding of How to Apply Social Science Evidence

Judges are often not equipped to understand the data applied in social science studies. Justice Powell, the majority writer in *McCleskey*, later admitted that "[his] understanding of statistical analysis . . . ranges from limited to zero."[94] As previously mentioned, the majority opinion in *McCleskey* disregarded the findings of the Baldus Study, but there may have been a variety of factors that played into this decision.[95] The Court's lack of understanding about how to interpret and apply social science evidence may have resulted in fear that subsequent analysis would expose an improper application or understanding of the Baldus Study's findings and the empirical data on which the study was based.[96] In fact, this is the same scrutiny the district court had faced in *McCleskey*.[97]

91. Fradella, *supra* note 4, at 113.

92. *Id.* at 114.

93. *Id.* (internal quotation marks omitted).

94. FAIGMAN, *supra* note 69, at 118.

95. JOHN MONAHAN & LAURENS WALKER, SOCIAL SCIENCE IN LAW: CASES AND MATERIALS 333 (7th ed. 2009); *see generally* David C. Baldus et al., *Law and Statistics in Conflict: Reflections on* McCleskey v. Kemp, IN HANDBOOK OF PSYCHOLOGY AND LAW (D.K. Kagehiro & W.S. Laufer eds., 1992).

96. MONAHAN & WALKER, *supra* note 95.

97. FAIGMAN, *supra* note 2, at 258.

This is the crux of the argument for "ensuring that only trustworthy evidence is presented to the jurors."[98] Evidence scholar, Roger Park, explains that

> [a]t trial, witnesses of events are supposed to relay their first-hand observations to the jurors, who interpret those observations, reach conclusions about what happened, and then come to a decision. . . . One of the hallmarks of the trial system, inherited from the English common law, was a fastidious concern for independent findings of fact based on objective observations.[99]

The jury would extract their conclusions on the matters at hand based on the observations of the witnesses under oath.[100] Thus, it is only through the application of trustworthy sciences that the system may be maintained in a way that provides constituents with a just experience.

A. *McCleskey*'s Reality Maintains the Status Quo

Finding in favor of McCleskey would have gravely disrupted courts' application of death sentences in the jurisdictions that allowed criminal defendants to face death.[101] Furthermore, when the Court decided *McCleskey*,

> more than 3,000 death sentences had been imposed, but fewer than 100 had been actually carried out through the execution. A finding in favor of McCleskey, whether based upon the jury discrimination model or an employment discrimination model, which would have led to the scrutiny of each individual death sentence, would likely have led to the wholesale staying of executions until each jurisdiction's death-sentencing could be legitimated through an empirical study. A delay of 5 years in executions as a consequence would not have seemed unlikely. The outcry against the Court from such a policy would have been predictable.[102]

98. ROGER PARK ET AL., EVIDENCE LAW § 14.01, at 530 (2d ed. 2004).

99. *Id.*

100. *Id.*

101. MONAHAN & WALKER, *supra* note 95.

102. *Id.*

At the conclusion of the majority opinion, the Court suggests that a better forum for McCleskey's arguments would likely be the legislature because of its flexibility to analyze research in ways that the courts cannot, given its access to more resources.[103]

Justice Brennan's dissenting opinion in *McCleskey* suggests a different approach that led him to conclude that "both statistical principles and human experience, reveal[] that the risk that race influenced McCleskey's sentence is intolerable by any imaginable standard."[104] Justice Brennan then delves even deeper into the methodology of the Baldus Study to arrive at its aforementioned conclusion that, after the Baldus Study accounted for about 230 nonracial variables that could reasonably be thought to impact a sentence, the study found that McCleskey's life would have avoided death had his victim been black.[105] The study distinguishes between two situations: the first situation is where the jury essentially plays no role because the aggravating factors present in the case point to only one outcome, and the second situation is where there are only "intermediate" aggravating factors where the jury is given far more discretion and responsibility.[106] McCleskey's circumstances put his case into the scheme of the second situation, and

> [i]n such cases, death is imposed in 34% of white-victim crimes and 14% of black-victim crimes, a difference of 139% in the rate of imposition of the death penalty. In other words, just under 59%—almost 6 in 10—[of the] defendants comparable to McCleskey would not have received the death penalty if their victims had been black.[107]

III. Changing Views: The Tension Between the Intent Doctrine and Implicit Bias

Nearly thirty years have passed since the Supreme Court's holding in *McCleskey*, and the Intent Doctrine remains the Court's standard for cases alleging violations of the Equal Protection Clause of the Fourteenth Amendment.[108] However, since 1987, there have been social science

103. McCleskey v. Kemp, 481 U.S. 279, 319 (1987).

104. *Id.* at 325 (Brennan, J., dissenting).

105. *Id.*

106. *Id.*

107. *Id.*

108. *Intent Standard*, EQUAL JUSTICE SOCIETY, http://equaljusticesociety.org/law/intentdoctrine/ (last visited Mar. 24, 2017).

developments that undercut the idea that the Court relies on in its Intent Doctrine. The newer findings suggest that humans indeed carry implicit biases.[109] The Implicit Association Test ("IAT") published in Psychological Review in 1995[110] is the standard by which implicit cognition is determined. The IAT defined implicit cognition as "traces of past experience [that] affect some performance, even though the influential earlier experience is not remembered in the usual sense—that is, it is unavailable to self-report or introspection."[111] Anthony Greenwald and Mahzarin Banaji explain implicit cognition as a means of revealing associative information that people were not otherwise aware of or able to report,[112] regardless of their own motivation to access it.[113] They even compared implicit cognition to being "simply unreachable in the same way that memories are sometimes unreachable, not just in amnesic patients, but in every person."[114] They concluded that a large portion of "social cognition occurs in an implicit mode."[115] Although the IAT has its own limitations and its reliability has been criticized,[116] it still questions the simplistic understanding of intentional discrimination and suggests that discriminatory interactions between people are complicated and cannot be analyzed solely through the lens of intentional discrimination.

IV. Reproducibility of Psychological Science

The long-running tension in the relationship between the law and social science evidence is further complicated by more recent findings that only thirty-six percent of replications done on psychological studies have significant results.[117] In August 2015, *Estimating the Reproducibility of Psychological Science* (the "Reproduction Study") was published, which reproduced one hundred experimental studies that had been published across three reputable psychology journals.[118] They aimed to reproduce the

109. Greenwald & Banaji, *supra* note 57.

110. *Id.*

111. *Id.* at 4–5.

112. Brian A. Nosek et al., *Implicit Association Test at Age 7: A Methodological and Conceptual Review, in* SOCIAL PSYCHOLOGY AND THE UNCONSCIOUS: THE AUTOMATICITY OF HIGHER MENTAL PROCESSES 265–66 (John A. Bargh ed. 2007).

113. *Id.*

114. *Id.*

115. Greenwald & Banaji, *supra* note 57, at 20.

116. *See generally* Beth Azar, *IAT: Fad or Fabulous?*, 39 MONITOR ON PSYCHOL. 44, (July 2008), http://www.apa.org/monitor/2008/07-08/psychometric.aspx.

117. OPEN SCIENCE COLLABORATION, *supra* note 58, at 943, aac4716-1, aac4716-3.

118. *Id.* at 943, aac4716-1, aac4716-2, aac4716-4, aac4716-5.

studies using original materials when available.[119] The study found that the results of psychological studies would rarely produce the same result.[120] Thus, the study bolsters yet another reason why the Supreme Court would likely refute the application of social science evidence in their opinions.

However, there is more than one factor to be considered when analyzing the success of the reproduced study.[121] In this particular study, p-value and effect size were used as two mechanisms in developing the findings.[122] The p-value estimates the probability that the result was arrived at by chance alone and/or is a false positive; if the statistical test finds that the p-value is lower than five percent, then the results of the study are considered to be due to the effects of the study as opposed to a false positive and thus are deemed significant.[123] Effect size measures how big the effect is as opposed to measuring the reliability.[124] Reproducibility is generally more likely when the original study has a lower p-value and a larger effect size.[125] The Reproduction Study ultimately found that thirty-six percent of replications had significant results.[126] However, it is important to note that this data should not be accepted as gospel because it also has been criticized.

When aiming to reproduce the findings, it is unclear whether the environmental conditions were replicated properly and what substitutes were used when original materials were not available.[127] Additionally, it is not completely clear how the aforementioned factors played into the thirty-six percent finding.[128] Thus, although these considerations suggest that the findings are eye-opening, perhaps the limitations are not as harsh as suggested. Additionally, the study itself states in its conclusion that reproducibility, as a concept, is not well understood because the incentive that drives scientists is more heavily weighed toward novelty over replication.[129] However, it also states that in order for psychological

119. *Id.* at 943.

120. *See generally id.*

121. *Id.*

122. *Id.*

123. Elizabeth Gilbert & Nina Strohminger, *We Found Only One-Third of Published Psychology Research Is Reliable – Now What?*, THE CONVERSATION (Aug. 27, 2015), https://theconversation.com/we-found-only-one-third-of-published-psychology-research-is-reliable-now-what-46596.

124. *Id.*

125. *Id.*

126. OPEN SCIENCE COLLABORATION, *supra* note 58, at 943, aac4716-1, aac4716-3.

127. Carey, *supra* note 59.

128. *Id.*

129. OPEN SCIENCE COLLABORATION, *supra* note 58, at aac4716-7.

studies to move forward there must be reliance on replication and novelty.[130]

Critics of the Reproduction Study suggest that the findings are inconclusive.[131] The critics pointed to a few weaknesses in the findings that suggest a more skeptical approach; for example, the replicated findings themselves were never replicated, which would have accounted for any errors in the applied methodologies.[132] However, the study refuted this notion by claiming that the researchers tasked with conducting the replications were to work closely with the original researchers and to involve more participants, which statistically strengthened the findings.[133] Additionally, issues stemming from the Reproduction Study are farther reaching than just the social sciences. PLoS Medicine published an article, *Why Most Published Research Findings Are False*, addressing this issue in relation to "hard" sciences as well, which includes biomedical research.[134] Here, the article highlighted the "increasing concern that most current published research findings are false."[135] The article also stated that

> [t]he probability that a research claim is true may depend on study power and bias, the number of other studies on the same question, and, importantly, the ratio of true to no relationships among the relationships probed in each scientific field. In this framework, a research finding is less likely to be true when the studies conducted in a field are smaller; when there is a greater number and lesser preselection of tested relationships; where there is greater flexibility in designs, definitions, outcomes, and analytical modes; when there is greater financial and other interest and prejudice; and when more teams are involved in a scientific field in chase of statistical significance. Simulations show that for most study designs and settings, it is more likely for a research claim to be false than true. Moreover, for many current scientific fields, claimed

130. *Id.*

131. Carey, *supra* note 59.

132. *Id.*

133. *Id.*

134. *See* John P.A. Ioannidis, *Why Most Published Research Findings are False*, 2 PLOS MED. 696, 696–701 (2005).

135. *Id.* at 696.

research findings may often be simply accurate measures of the prevailing bias.[136]

V. Remedies the Court Should Consider

Given the information we can glean from the outcome of *McCleskey*, we know that the Court must consider a various methods to ensure that social science data is applied appropriately where there is any doubt as to the outcome of the case. *McCleskey* is a good reminder that the Court may even reject the application of valid social science as irrelevant research when deeply rooted constitutional values are the point of contention.[137] While the role of race discrimination in the death sentencing system is one of importance, the broader question is how the Court should utilize behavioral science data in determining what standard of review to apply, especially given the recent developments in the reproducibility of social science data and implicit bias. While there are no perfect answers, there are a few possible ways the Court can move forward.

The Court's apprehension towards incorporating social science evidence into its holdings can be remedied through ensuring that the evidence has been vetted properly to ensure validity and reproducibility of the study. One recent development is JuriLytics, which conducts peer reviews of expert testimony and reports.[138] JuriLytics is also a way that courts, or either party, can eliminate the "battle of the experts" and conduct a neutral analysis.[139] JuriLytics is an assessment of the existing papers, not a replication of the underlying methodologies in each individual study. Thus, the scope is relatively limited.

If the idea presented by JuriLytics were to go one step further and closely replicate studies rather than simply provide an analysis of the existing findings and methodologies, then perhaps this would provide a stronger incentive for the Court to consider accounting for the data. This solution would only bolster validity. It would not address how the Court should adopt newer findings in changings its application, like in the case of the Intent Doctrine and the new data suggesting that implicit biases exist.

The IAT itself suggested "strategies for avoiding unintended discrimination" to address concerns related to social discrimination in a variety of public settings, which it divided into three categories: blinding,

136. *Id.*

137. Moran, *supra* note 21, at 542.

138. *See* JURILYTICS, http://jurilytics.com (last visited Mar. 24, 2017).

139. *Id.*

consciousness raising, and affirmative action.[140] Blinding is the process of denying the decision maker exposure to the possibly biasing information.[141] Contrary to the proposition put forth in blinding, consciousness raising "encourages the decision maker to have heightened awareness of potential cues that could elicit discrimination."[142] The third avenue suggested in the IAT is affirmative action, which is distinct compared to the aforementioned categories because affirmative action by its very nature has a "deliberate compensatory component."[143] Affirmative action is compensatory because it accounts for a characteristic, which is known to be at the root of negative discrimination, and considers that characteristic advantageous.[144] Although these three suggestions presented by the IAT all serve advantages in varying capacities, their application in the IAT does not reflect other research done on these three avenues—the focus and benefit is on situations where discriminatory behavior is rooted in implicit attitudes.[145]

The intent standard can be adapted to reflect some of these strategies to avoid unintentional discrimination in juries in capital sentencing cases, such as *McCleskey*. Blinding would likely not be a viable solution because it is unlikely that the prosecution would be able to color its argument or put on eyewitness testimony if any mention of race were to be eliminated from the trial.[146] However, consciousness raising could be a viable option in which juries can be made aware of implicit biases in the context of jury instructions in capital cases.[147] According to the IAT's analysis on consciousness raising, the act of bringing the presence of implicit bias to the jury's attention will afford the jury the opportunity to account for and hopefully avoid the possible bias.[148] Although consciousness raising may not completely eliminate every trace of implicit bias, the reduction of implicit bias from the jury's decision is a step in the right direction. Additionally, this solution does not place unreasonable costs upon courts or litigants. The opposing argument to the application of consciousness raising in jury instructions is that drawing attention to implicit bias based on race could draw the jury's attention to a variable that they were not

140. Greenwald & Banaji, *supra* note 57, at 19.

141. *Id.*

142. *Id.*

143. *Id.*

144. *Id.*

145. *Id.*

146. *See generally* Old Chief v. United States, 519 U.S. 172 (1997).

147. *See* 18 U.S.C. §§ 3591–3599. See the link below for an example of the U.S. Circuit Court of Appeals for the Eight Circuit's jury instructions in death sentencing cases at http://juryinstructions.ca8.uscourts.gov/sec12.pdf.

148. Greenwald & Banaji, *supra* note 57, at 19.

implicitly biased about and, therefore, swaying their decision because the jury would hope not to appear discriminatory.

The third suggested option is affirmative action, otherwise referred to as reverse discrimination because of its proposition to discriminate in favor of the category of people generally discriminated against.[149] However, it is unlikely that this would bode well for the Court if it were adapting its current Intent Doctrine to account for implicit biases. Further, the category of people generally not discriminated against would likely have a claim that they face discrimination in their sentencing by juries, which would serve as counterproductive. Proponents for the application of affirmative action would likely claim that the findings of the Baldus Study would serve as "compensation for past, present, and likely future *implicit* discrimination by persons who have no intent to discriminate . . . . [and thus] affirmative action strategies might be understood as strategies for *reversal* of discrimination,"[150] which would likely result in more balanced results of the Baldus Study. However, the Court has a history with addressing issues hinging on affirmative action claims in the context of affirmative action in schools. In *Parents Involved in Community Schools v. Seattle School District No. 1*, the Court held that giving an advantage to a minority student for the purposes of bolstering racial integration was not permissible but that race-conscious objectives shown to be narrowlytailored would pass muster.[151] This analysis, against the backdrop of *McCleskey*, would likely point to consciousness raising as a more viable option.

Another alternative is taking away the jury's role in determining whether the death sentence is appropriate and allocating this responsibility to judges alone. However, critics have suggested that in jurisdictions where justices are elected, those judges reverse capital convictions half of the time compared to appointed judges.[152] This suggests that the political pressure of being reelected may bias a judge against making fair and equitable decisions during the appeals process.[153] These findings thwart the notion that courts bear the responsibility of protecting and promoting the constitutional rights of litigants without political pressure looming over them.[154] On the other hand, facing reelection helps ensure that judges are

149. *Id.*

150. *Id.*

151. Parents Involved in Cmty. Sch. v. Seattle Sch. Dist. No. 1, 551 U.S. 701, 734–35 (2007).

152. Dan Levine & Kristina Cooke, *Uneven Justice, In States with Elected High Court Judges, a Harder Line on Capital Punishment*, REUTERS (Sept. 22, 2015), http://www.reuters.com/investigates/special-report/usa-deathpenalty-judges/.

153. *Id.*

154. *Id.*

making fair and equitable decisions in their application of the law despite their own biases compared to justices who are appointed and seemingly have greater leeway to adjudicate in an activist-type role.[155] In 2013, Justice Sotomayor cited a study finding that judges in Alabama imposed the death penalty upon defendants at a higher rate during election years.[156] The arguments posed on both sides suggest the notion that decisions by juries may provide defendants in capital cases with more perspective and input than the risk that a judge may be carrying his or her own implicit or deliberate biases.

Conclusion

Considering the adversarial nature of the court system along with the scientific methodologies applied in social science experiments, balance is achieved when the courts find a way to account for the evolving nature of social science. This idea gives rise to a series of questions for the Court to consider moving forward: Now that we are aware that implicit biases exist, why does the Court still continue to uphold the particularized Intent Doctrine that was applied in *McCleskey*? Would it be likely that a case-by-case analysis would reach a fairer outcome? What is the cost-benefit outcome if the Court were to have access to resources to replicate studies?

Although the Court still continues to use the Intent Doctrine, newer findings suggest that implicit biases within the human mind may also factor into discriminatory effect and should be taken into consideration without opening up the floodgates and disrupting the courts. Additionally, the Reproduction Study—which found that only roughly one-third of psychological science is reproducible—is relevant in suggesting that courts should consider reproducing studies to check validity and reliability before altering precedent. Although there is no perfect solution for the Court to adopt, the current application of the outdated Intent Doctrine does not provide a fair and equitable court system. We will achieve a fair and equitable court system after we learn that we may not assume that judges are all-knowing when interpreting social science data and that using other avenues, such as those suggested in the IAT for how to avoid unintended discrimination, may serve as a springboard for understanding that implicit biases do exist. In order to be on the cutting edge of all of these considerations, courts must look to the reproducibility of social science findings in conjunction with applying newer developments, such as JuriLytics. The hope is that courts will take the aforementioned factors into

155. *Id.*

156. *Id.*

consideration in moving forward and create viable solutions for all those who utilize the services of the court when adjudicating cases.

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