

Forgotten Racial Equality: Implicit Bias, Decision-Making and Misremembering

Justin D. Levinson *

The Confrontation:

Tyronne first encountered James when they accidentally bumped elbows in a crowded bar... An hour after leaving the bar, Tyronne and a friend spotted James outside a local diner. They approached James slowly, and Tyronne said: "Why did you bump into me back there?" James moved forward, shoved him with both hands, and said: "Get out of my face." ...Without hesitating, Tyronne then stepped forward and tried to shove James in the chest, but missed and hit him in the face. James fell back slightly. He then turned around, took a couple steps away from Tyronne, and appeared to reach for something in his pocket. Tyronne quickly pursued James from behind and punched him in the side of the head. James fell to the ground. Tyronne's friend stepped forward and kicked James...

INTRODUCTION

Racial bias may unconsciously alter the recollection of facts by judges and jurors during all facets of the legal decision-making process. In delegating fact-finding and decision-making authority to judges and juries, the American legal system makes a supposedly elementary but unsupported psychological assumption—that these individuals can cognitively process, evaluate, and weigh the facts that were presented during trial.¹ The accuracy of this assumption recently has been challenged by behavioral law and economics scholars, who have demonstrated that cognitive biases affect the way people process information.² Yet perhaps an even more vulnerable part of this

* Assistant Professor of Law, University of Hawaii. The author would like to thank Charles Lawrence, Eric Yamamoto, Melody MacKenzie, Debra Lieberman, Carl Christiansen, Jeanine Skorinko and Susan Serrano for their comments and support. Dean Aviam Soifer provided generous summer research support. Michael Colon, Sonny Ganaden and Dina Shek provided outstanding research assistance.

¹ See Dan Simon, *A Third View of the Black Box: Cognitive Coherence in Legal Decision Making*, 71 U. CHI. L. REV. 511, 551 (2004) (stating: "The prevailing trial design rests on the assumption that the complex and vast amount of testimony, presented over the course of days and weeks, can be encoded, retained, and retrieved from memory in an unaltered state.").

² These scholars aim to create a psychologically accurate model of legal decision-making. See Christine Jolls et al., *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471 (1998). See also Kim A. Kamin & Jeffrey J. Rachlinski, *Ex Post Ex Ante: Determining Liability in Hindsight*, 19 LAW & HUM. BEHAV. 89 (1995); Jeffrey J. Rachlinski, *A Positive Psychological Theory of Judging in Hindsight*, 65 U. CHI. L. REV.

psychological assumption is implicated by systematic biases in memory recall. Unlike most cognitive biases, which are assumed to be race-irrelevant, unconsciously biased memory failures by judges and jurors may propagate implicit racial biases through the legal process itself. Despite this challenge to basic assumptions of legal decision-making, scholarship has not yet examined whether judicial fact-finders and decision-makers systematically “misremember” facts in racially biased ways. Nor has it adequately addressed the link between implicit racial biases, the law’s quest for justice, and cultural responsibility.³

In the past two decades legal scholars have identified a variety of ways in which unconscious racial biases influence the legal process.⁴ One significant methodology has involved examining the specific harms caused by unconscious racism, such as the connection between unconscious racial bias and acts of employment discrimination.⁵ Another methodology has involved evaluating the unintentional biasing implications of legislation.⁶ As scientific research methods continue to improve their rigor, we continue to learn more about the implicit nature of racial biases and stereotypes and how they might harbor immunity in the legal system.

Shifting gears momentarily, let us now return to *The Confrontation*, the story presented at the beginning of this Article (but please do not look back at the story just yet). Here’s a brief memory quiz about what you read. Do the following facts accurately describe a piece of *The Confrontation* story you read? (answer yes or no to each question) (1) Tyronne kicked James. (2) James pushed Tyronne. (3) Tyronne tried to push James in the chest, but missed and hit him in the face. Does the quiz seem easy to you? Well, it might (check your answers in the footnote below).⁷ But make the facts a bit more

571 (1998); Russell Korobkin, *The Endowment Effect and Legal Analysis*, 97 NW. U. L. REV. 1227 (2003). Some cognitive biases, such as the hindsight bias, operate in close connection with memory processes. By separating behavioral law and economics discussions from my discussion of unconscious memory biases, I do not mean to imply that other cognitive biases do not involve memory. To the contrary, many cognitive biases, such as hindsight bias, availability heuristic, and primacy/recency effects, operate inextricably with the human memory.

³ But see Charles R. Lawrence III, *The Id, the Ego, and Equal Protection: Reckoning with Unconscious Racism*, 39 STAN. L. REV. 317 (1987). Lawrence initiated this discussion twenty years ago, but the cultural responsibility element of his famous article is often overshadowed by discussions of his scientific claims about unconscious racism.

⁴ See *Id.*; Linda Hamilton Krieger, *The Content of Our Categories: A Cognitive Bias Approach to Discrimination and Equal Employment Opportunity*, 47 STAN. L. REV. 1161 (1995); Jerry Kang, *Trojan Horses of Race*, 118 HARV. L. REV. 1489 (2005).

⁵ See, e.g. Krieger, *supra* note __.

⁶ See Kang, *supra* note __.

⁷ Here are the quiz answers. Question 1 is inaccurate. Tyronne did not kick James.

complicated (like a real case), and you might not remember as well.⁸ And simply change Tyronne’s race from African American to Caucasian (and his name to William) and you might even remember some facts differently. Not convinced? Read on, or perhaps skip ahead to the empirical study I conducted,⁹ which illustrates that these memory-driven unconscious biases occur in a systematic fashion.

The empirical study I conducted investigated whether unconscious racism affects how mock jurors remember legal facts. I asked people to read the facts of legal stories (one is an expanded version of *The Confrontation*), briefly distracted their attention,¹⁰ and then quizzed their memories of the facts. The actors’ race served as the independent variable—people read about either William (a Caucasian), Kawika, (a Hawaiian), or Tyronne (an African-American).¹¹ The results of the study demonstrate that the race of a civil plaintiff or a criminal defendant can unconsciously cause people to misremember a case’s facts in racially biased ways. For example, people who read about Tyronne or Kawika were more likely to remember aggressive facts from the “confrontation” compared to people who read about William.¹² The results also show that susceptibility to misremembering facts based on race cannot be attributed to more overtly racist people—those who were susceptible to racial misremembering were even sometimes less explicitly racist.

This Article, including the empirical study I conducted on juror memories, brings together theories and methods from legal discourse on unconscious racism and from psychology studies of implicit social cognition and memory processes. It is structured as follows: Section II begins by offering psychological proof of unconscious racism. It details recent studies in which people’s unconscious racial attitudes and stereotypes are measured in novel, yet methodically rigorous ways. Then it turns to legal discourse on unconscious racism, and looks at how legal commentators have incorporated psychological

Tyronne’s friend kicked James. Questions 2 and 3 are accurate.

⁸ Research has suggested that jurors may not remember much more than half of information presented at trial. See Mary E. Pritchard & Janice M. Keenan, *Does Jury Deliberation Really Improve Jurors’ Memories?* 16 APP. COGNITIVE PSYCHOL. 589 (2002)(finding a 60% accuracy rate of recall for mock jurors who watched a thirty-five minute video of a case).

⁹ See *infra* Section IV.

¹⁰ With *The Confrontation*, I attempted to create a similar effect for readers of this Article by pausing two paragraphs before asking the basic recall questions. Almost all memory studies on recall provide a brief distraction task between presenting the task and testing recall. See *infra* Section III for examples.

¹¹ For one case, participants read an expanded version of *The Confrontation*. In the other story they read about an employment termination scenario. Names and races were similarly varied in the independent variable condition.

¹² For detailed results, see *infra* Section IV.

knowledge of these studies into critiques of legal theory, frequently by focusing on the gap between legal tests and psychological reality. It highlights the connection between unconscious racism, social justice, and cultural responsibility that was present in early discussions on unconscious bias, but has seemingly faded as the scientific model has improved and legal discourse zooms in to follow. Finally, it notes that little or no empirical work has been conducted to determine whether unconscious racial bias may affect judge and juror memories of case facts.

Section III investigates the intricacies and errors of human memory processes and discusses the intimate connection between memory and legal decision-making. It describes several systematic flaws in the human memory, including the generation of false memories. Empirical studies indicate that people unconsciously create false memories in ways that are consistent with stereotypes. Section III then turns to legally relevant examples of memory failure. Thus far, discussions of failures of memory in the legal setting have typically been limited to faulty eyewitness identifications, such as when the “own race bias” manifests. Based upon the research discussed in Sections II and III, I argue that unconscious bias likely affects legal decision-making by altering judge and jury memories of case facts. Section IV details the empirical study I conducted, which tested whether manipulating the race of actors in a legal scenario would affect how accurately people recalled the story’s events. The study showed that for some facts, simply altering a legal actor’s race caused participants to remember certain facts or generate false memories in racially biased ways.

Section V begins by discussing the relationship between implicit biases, culture, and the law. It points out that implicit biases are not errors caused by scientific quirks, but are meaningful manifestations of social and cultural norms. It then discusses how the law’s quest for justice requires that implicit racial biases not simply be addressed with a temporary debiasing framework, but with a reflective, culturally competent mandate. Yet until a cultural solution emerges through time, learning, and change strategies, we are stuck with a system in which racial biases are transmitted implicitly through legal decision-making process. Thus, the Section addresses a debiasing model that might help moderate implicit memory biases, though only temporarily. While such models risk overlooking the cultural responsibility for implicit bias, they do hold some promise for minimizing harm. These temporary solutions include (a) using debiasing techniques to block stereotypes and enhance memory, (b) striving for more counter-stereotypic legal professionals and more diverse juries, and (c) implementing more widespread procedural changes such as juror note-taking and question asking. Section VI concludes.

II. UNCONSCIOUS RACISM EXPOSED: PSYCHOLOGICAL PROOF AND LEGAL DISCOURSE

Over the past decade, studies have deconstructed the complicated ways in which the human mind maintains and manifests unconsciously biased racial attitudes and stereotypes. Many of these studies have reached the same conclusion—that unconscious biases are real, pervasive, and difficult to change.¹³ Responding to the growing scientific proof of unconscious bias, legal commentators have called for various types of reform.¹⁴ Reform minded scholars have, for example, focused on the relationship between discriminatory acts triggered by unconscious bias (such as employment decisions) and the failure of legal rules to properly guard against or provide recourse for such acts.¹⁵ These works often critique a substantive legal rule or construct (such as the intent doctrine) in light of psychological evidence that indicates that such rule or construct fails to truly understand the implicit nature of racism.¹⁶ While such works have made great progress in discussing the relationship between substantive legal rules and unconscious racism, less progress has been made in studying how unconscious racism affects legal processes such as judicial rulings and jury decision-making.¹⁷

In order to develop fully a theory on how unconscious racism might affect judicial rulings and jury decision-making, three distinct areas of scholarship on unconscious bias are helpful for review: (1) empirical psychological studies that document various forms of unconscious racism; (2) detailed legal arguments that call for reform of legal tests to match cognitive and racial realities; and (3) cognitive science studies that show the fragility of the human memory and connect memory failures to racial biases. This Section tackles the first two of these areas, and Section III address the third.

A. Psychological Evidence of Unconscious Racism

Unconscious racism materializes in a variety of different forms and can

¹³ See, e.g., Anthony Greenwald et al., *Measuring Individual Differences in Implicit Cognition: The Implicit Association Test*, 74 J. PERSONALITY & SOC. PSYCHOL. 1464 (1998); Joshua Correll et al., *The Police Officer's Dilemma: Using Ethnicity To Disambiguate Potentially Threatening Individuals*, 83 J. PERSONALITY & SOC. PSYCHOL. 1314, 1321 (2002).

¹⁴ See Charles R. Lawrence III, *The Id, the Ego, and Equal Protection: Reckoning with Unconscious Racism*, 39 STAN. L. REV. 317 (1987); Krieger, *supra* note __.

¹⁵ See Lawrence, *supra* note __. Krieger, *supra* note __.

¹⁶ See Lawrence, *supra* note __. Krieger, *supra* note __.

¹⁷ Some authors, such as those examining peremptory challenges, focus on the intersection of substantive rules and legal processes. See Antony Page, *Batson's Blind-Spot: Unconscious Stereotyping and the Peremptory Challenge*, 85 B.U.L. REV. 155 (2005) (thoroughly outlining research on unconscious racism).

affect the legal process in many ways. One possible, but troubling, way that unconscious racism may manifest in legal decision-making is through biased memories. In this Article, I argue that unconscious racism automatically causes jurors (and perhaps even judges¹⁸) to misremember case facts in racially biased ways. According to this argument and its underlying empirical prediction, implicit racial biases are triggered in jurors and manifest automatically through memory processes. This racial bias will distort case facts in ways that are completely unknown to the juror but prejudicial to the legal actor (for example, a criminal defendant or a plaintiff in an employment discrimination claim). Thus, the argument draws upon research in two related psychological areas, social cognition research and studies on human memory.¹⁹ Social cognition studies on bias explore the vast role of often automatic cognitive processes in decision-making. Memory studies, including those conducted using social cognition methodologies, reveal the vast powers of the human mind, but also the systematic failures of the human mind's ability to recall certain facts. In combination with memory theories that reveal systematic shortcomings of human recall, social cognition research can provide empirically solid ground for the prediction that unconscious racial attitudes and stereotypes are powerful and reliable enough to affect jury memories in biased ways.

Implicit Social Cognition. Much of the existing evidence of unconscious racial bias comes from the field of social cognition.²⁰ Social cognition research analyzes how people think about themselves and others, often using methods

¹⁸ In this Article, I argue that both juries and judges will likely be affected by unconscious memory biases. Some readers might prefer to see me address only jury decision-making in this context. After all, the empirical study I conducted focuses more closely on mock jurors, not on judges. Nonetheless, in light of evidence detailing systematic errors in a wide range of human cognitions, it is important not to leave judges out of the discussion. Research on judicial versus jury decision-making biases appears to corroborate the decision to include judges as possible unconscious propagators of bias. See Jennifer K. Robbenmolt, *Evaluating Juries by Comparison to Judges: A Benchmark for Judging?*, 32 FLA. ST. U. L. REV. 469 (2005) (indicating that judges and jurors may well suffer from the same errors of thought); Andrew J. Wistrich et al., *Can Judges Ignore Inadmissible Information? The Difficulty of Deliberately Disregarding*, 153 U. PA. L. REV. 1251 (2005) (indicating that judges are not always able to disregard certain information, even when required by their own rulings); Donald C. Nugent, *Judicial Bias*, 42 CLEV. ST. L. REV. 1 (1994); Chris Guthrie et al., *Inside the Judicial Mind*, 86 CORNELL L. REV. 777 (2001) (finding that judges, while sometimes less susceptible to biases than juries, still exhibit systematic cognitive biases). For the sake of brevity and clarity, this Article will only occasionally repeat "and judges" throughout.

¹⁹ Some research on memory falls under the umbrella of social cognition because of its focus on cognitive processes. I review research in memory studies and errors, *infra* Section III.

²⁰ See, e.g., Kang, *supra* note __.

from cognitive psychology to investigate how the human mind works.²¹ The area of social cognition thus includes work on a wide range of topics, including attribution theory, schemas, the self, reasoning processes and decision-making, memory, and attitudes.²² It should come as no surprise, then, that social cognition research also examines stereotypes, biases, and inter-group relations. In her groundbreaking work on unconscious bias and employment discrimination, Linda Hamilton Krieger provided three overarching themes of social cognition research on biases and stereotypes, each of which she related to bias in the workplace: First, normal cognitive processes automatically trigger stereotyping;²³ Second, stereotypes and biases operate absent an explicit intent to use them;²⁴ and Third, “[p]eople’s access to their own cognitive processes is in fact poor.”²⁵ Thus, studies in social cognition have illustrated that racial attitudes and stereotypes are both automatic and implicit. That is, people possess attitudes and stereotypes of which they have little or no conscious control or awareness.

A now famous example of social cognition research on unconscious racial bias comes from research by Mazharin Banaji, Anthony Greenwald and their colleagues, who began using the Implicit Association Test in the 1990s.²⁶ The Implicit Association Test (“IAT”) pairs an attitude object (such as a racial group) with an evaluative dimension (good or bad) and tests how response accuracy and speed indicate unconscious and automatic attitudes and stereotypes.²⁷ In the computerized version of the IAT, participants sit at a computer and keyboard and are asked to pair an attitude-object (e.g. Black or White; man or woman; fat or thin) with either an evaluative dimension (e.g. good or bad) or an attribute dimension (e.g. home or career; science or arts) as

²¹ SUSAN T. FISKE & SHELLEY E. TAYLOR, *SOCIAL COGNITION* (2d ed. 1991).

²² *Id.*

²³ Krieger, *supra* note __ at 1188. For more on the automaticity of stereotypes, see John A. Bargh et al., *Automaticity of Social Behavior: Direct Effects of Trait Construct and Stereotype Activation on Action*, 71 *J. PERSONALITY & SOC. PSYCHOL.* 230 (1996); John A. Bargh et al., *The Generality of the Automatic Attitude Activation Effect*. 62 *J. PERSONALITY & SOC. PSYCHOL.* 893 (1992).

²⁴ *Id.* at 1189.

²⁵ *Id.* Kang labels this as “dissociation”-- the gap between conscious awareness and implicit attitude. See Kang, *supra* note __ at 1513. See also Laurie A. Rudman, *Social Justice in Our Minds, Homes, and Society: The Nature, Causes, and Consequences of Implicit Bias*, 17 *SOC. JUSTICE RES.* 129, 133 (2004) (similarly summarizing the automaticity, unintentionality and often unconscious nature of implicit biases).

²⁶ See Greenwald et al., *supra* note __; Anthony Greenwald & Mazharin Banaji, *Implicit Social Cognition: Attitudes, Self-Esteem, and Stereotypes*. 102 *PSYCHOL. REV.* 4 (1995) (discussing theories underlying implicit social cognition and the IAT).

²⁷ Mazharin Banaji, *Implicit Attitudes Can Be Measured*, in *THE NATURE OF REMEMBERING: ESSAYS IN HONOR OF ROBERT G. CROWDER* 117 (Henry L. Roediger, III, et al., eds. 2001).

quickly as they can.²⁸ The speed at which the participants can pair the words together (e.g. in one task, participants are told to quickly pair together pictures of African American faces with positive words from the evaluative dimension) is interpreted as the strength of the attitude (or in the case of attributes, the strength of the stereotype).²⁹ As described by Nilanjani Dasgupta and Greenwald, “[w]hen highly associated targets and attributed targets share the same response key, participants tend to classify them quickly and easily, whereas when weakly associated targets and attributes share the same response key, participants tend to classify them more slowly and with greater difficulty.”³⁰ As demonstrated by Greenwald and his colleagues’ in their landmark study (and in numerous follow-ups³¹), study participants consistently demonstrate implicit attitudes and stereotypes in areas including race, gender, and beyond.³² The time measurement variable used in the IAT allows researchers to determine that it is implicitly harder for people to group together, for example, images of Black faces with positive words than it is for them to group together Black faces and negative words.³³ The systematic display of racial biases on the IAT has been confirmed by examining hundreds of thousands of IATs taken in recent years on the IAT project’s website.³⁴

Other than through the IAT, unconscious racism has been documented using a variety of methodologies.³⁵ One series of studies uses custom made

²⁸ Banaji, *supra* note __ at 123.

²⁹ *Id.* See also Greenwald et al, *supra* note __.

³⁰ Nilanjana Dasgupta & Anthony G. Greenwald, *On the Malleability of Automatic Attitudes: Combating Automatic Prejudice With Images of Admired and Disliked Individuals*, 81 J. PERSONALITY & SOC. PSYCHOL. 800 (2001).

³¹ Recent research on the IAT is quite voluminous. One often contested area of study on the IAT relates to the validity of the measurements. See, e.g., Alan J. Lambert et al., *On the Predictive Validity of Implicit Attitude Measures: The Moderating Effect of Perceived Group Variability*, 41 J. EXPERIMENTAL SOC. PSYCHOL. 114 (2005); C. Miguel Brendl et al., *How Do Indirect Measures of Evaluation Work? Evaluating the Inference of Prejudice in the Implicit Association Test*, 81 J. PERSONALITY & SOC. PSYCHOL. 760 (2001).

³² See, e.g., Greenwald et al, *supra* note __; Anthony G. Greenwald & S. D. Farnham, *Using the Implicit Association Test to Measure Self-Esteem and Self-Concept*. 79 J. PERSONALITY & SOC. PSYCHOL. 1022 (2000); D. Maison et al., *The Implicit Association Test As a Measure of Implicit Consumer Attitude*, 32 POLISH PSYCHOL. BULL., 1 (2001). Dozens of IAT tests are available at the Project Implicit Website, <https://implicit.harvard.edu/implicit/> (last visited Jul. 2006). See also Brian Nosek et al., *Harvesting Implicit Group Attitudes and Beliefs From a Demonstration Website*, 6 GROUP DYNAMICS 101 (2002) (reporting results from hundreds of thousands of IATs on the popular on-line Website, including significant Black-White IAT results).

³³ See Greenwald et al., *supra* note __; Dasgupta & Greenwald, *supra* note __; Nosek et al., *supra* note __.

³⁴ Nosek et al., *supra* note __.

³⁵ Jerry Kang, Linda Hamilton Krieger, Gary Blasi and others have described some of these studies. See Kang, *supra* note __; Krieger, *supra* note __; Gary Blasi, *Critical Race*

video games to examine the race-based phenomenon of “shooter bias.”³⁶ This bias emerges when participants play a video game that instructs them to shoot perpetrators (who are holding guns) as fast as they can but not to shoot innocent bystanders (who are unarmed). The “shooter bias” refers to participants’ propensity to shoot Black perpetrators more quickly and more frequently than White perpetrators and to decide not to shoot White bystanders more quickly and frequently than Black bystanders.³⁷ Studies have also shown that participants more quickly identify handguns as weapons after seeing a Black face, and more quickly identify other objects (such as tools) as non-weapons after seeing a White face.³⁸ In these studies, participants are entirely unaware that they have even seen a White or Black face. The quick flashing image registers in the unconscious, but participants are not consciously aware of the prime.³⁹ The unconscious visual stimulus is enough to change accuracy and speed of identification of the gun or tool in a racially biased way.

Faced with the results described above and the concern that “officers use

Studies: Advocacy Against the Stereotype: Lessons from Cognitive Psychology 49 UCLA L. REV. 1241 (2002). See also Jerry Kang & Mazharin Banaji, *A Behavioral-Realist Revision of ‘Affirmative Action,’* 94 CAL. L. REV. 1063 (2006).

³⁶ See Correll et al., *supra* note __ (2002); B. Keith Payne, *Prejudice and Perception: The Role of Automatic and Controlled Processes in Misperceiving a Weapon*, 81 J. PERSONALITY & SOC. PSYCHOL. 181, 185-86 (2001); Joshua Correll et al., *Event-Related Potentials and The Decision to Shoot: The Role of Threat Perception and Cognitive Control*, 42 J. EXPERIMENTAL SOC. PSYCHOL., 120 (2006). Several of the original studies on shooter bias were reviewed by Kang, *supra* note __.

³⁷ Correll et al, *supra* note __ (2002); Anthony G. Greenwald et al., *Targets of Discrimination: Effects of Race on Responses to Weapons Holders*, 39 J. EXPERIMENTAL PSYCHOL. 399 (2003). Most discussions of shooter bias focus on race in explaining the Black-White result differences. Another possibility in these studies is reflected by the concept of “colorism”. See Trina Jones, *Shades of Brown: The Law of Skin Color*, 49 DUKE L.J. 1487 (1999).

³⁸ Correll et al, *supra* note __ (2006), citing D.M. Amodio et al, *Neural Signals for the Detection of Unintentional Race Bias*, 15 PSYCHOL. SCI. 88 (2004), C.M. Judd et al., *Automatic Stereotypes Versus Automatic Prejudice: Sorting Out the Possibilities in the Payne (2002) Weapon Paradigm*, 40 J. EXPERIMENTAL SOC. PSYCHOL. 75 (2004); Payne, *supra* note __ (2001); K. Payne et al., *Best Laid Plans: Effects of Goals on Accessibility Bias and Cognitive Control in Race-Based Misperceptions of Weapons*, 38 J. EXPERIMENTAL SOC. PSYCHOL. 384 (2002).

³⁹ This visual flashing technique is known as “priming.” A well known example of a priming study is Claude M. Steele & Joshua Aronson, *Stereotype Threat and the Intellectual Test Performance of African Americans*. 69 J. PERSONALITY & SOC. PSYCHOL. 797 (1995) (finding that priming racial identity affects standardized tests scores). For a legal article on priming, see Justin D. Levinson, *Suppressing the Expression of Community Values in Juries: How “Legal Priming” Systematically Alters the Way People Think*, 73 U. CIN. L. REV. 1059 (2005) (arguing that placing citizens on juries alters their cultural and cognitive reference points and therefore changes their decision-making).

race when making the decision to shoot,”⁴⁰ researchers have continued to investigate the roots of shooter bias. Studies have linked shooter bias to culturally held racial stereotypes, which link Blacks to danger.⁴¹ This well-known racial stereotype may even manifest in brain processes that moderate responses to fear. In a recent study, Joshua Correll and his colleagues looked at fluctuations in participants’ brain activity (known as “event-related brain potentials”) while they played the shooter video game.⁴² According to Correll and his colleagues, measuring event-related brain potentials can demonstrate a distinction in brain response when people detect threats compared to when they have a desire to control their response.⁴³ Correll and his colleagues found that as participants played the video game, racial bias manifested in their brains. That is, participants’ brain activity showed more threat related brain activity for Black actors than White actors (even for Blacks without guns), and more control response activity for White actors compared to Black actors.⁴⁴ These brain responses then correlated with the participants’ performance—the more biased brain activity they displayed, the more shooter bias they exhibited.⁴⁵ Despite the concern raised by the study’s result, Correll and his colleagues maintained optimism that future research will lead towards further understanding and perhaps eventually lead to moderation of real world shooter bias.

A third type of social cognition study revealing unconscious racism uses word completion tasks to show how people more quickly associate stereotypical words when stereotypes have been activated. These studies demonstrate that people can more quickly complete word fragments, identify stereotypic words, and pronounce stereotypic words when stereotypes have been activated compared to when they have not been activated.⁴⁶ For example, a study by Daniel Gilbert and J. Gregory Hixon presented participants with lists of partially completed words and asked them to complete as many as possible during a short time period.⁴⁷ Some of the words presented were stereotypically associated with Asians, such as the word “polite” (written as POLI_E, so that other words, such as “police,” could be formed during the word completion

⁴⁰ Correll, *supra* note __ (2006) at 120.

⁴¹ Correll, *supra* note _ (2002); Correll, *supra* note __ (2006).

⁴² Correll, *supra* note ____ (2006).

⁴³ These brain responses are known as P200 and N200 components, among others. *Id.* at ____.

⁴⁴ Correll, *supra* note __ (2006) at ____.

⁴⁵ *Id.* at ____ . Interestingly, biased results in brain activity and shooter bias also correlated with individual participants’ personal and cultural stereotypes.

⁴⁶ Ziva Kunda & Steven J. Spencer, *When Do Stereotypes Come to Mind and When Do They Color Judgment? A Goal-Based Theoretical Framework for Stereotype Activation and Application*, 129 PSYCHOL. BULL. 522 (2003).

⁴⁷ Daniel T. Gilbert & J. Gregory Hixon, *The Trouble of Thinking: Activation and Application of Stereotypic Beliefs*, 60 J. PERSONALITY & SOC. PSYCHOL. 509 (1991).

task).⁴⁸ As they completed the task, participants were either exposed to a Caucasian or Asian research assistant, whose only role was to hold up cards containing the word fragments. The participation of this assistant was hypothesized to be significant enough to activate racial stereotypes and thus affect word completions. The hypothesis was correct. Participants who saw an Asian assistant completed more words in a stereotype-consistent manner than those who saw a Caucasian assistant.⁴⁹ This study, and others like it, indicates that implicit stereotypes manifest quickly and harmfully in a variety of different ways, and that they seemingly do so automatically any time there is a cognitive opportunity.

Moving beyond social cognition, other projects using broader social science methodologies have revealed similar racial gaps. Marianne Bertrand and Sendhil Mullainathan created fictitious character names and resumes and studied how real world potential employers responded to “African-American sounding names” compared to “White sounding names.”⁵⁰ Using the fictitious resumes, which also varied the experience of the imaginary applicant, the experimenters responded to real help wanted ads in Boston and Chicago.⁵¹ The results demonstrated that employers were more likely to call job applicants with White sounding names than African-American sounding names. In fact, when accounting for the dual influence of racial name sound and prior job experience, the researchers found that a White name yielded as many callbacks as an additional eight years of experience.⁵²

Research in social cognition and related areas thus provides strong evidence that implicit racial attitudes and stereotypes are triggered by automatic cognitive processes in a variety of cognitive domains. Based upon this compelling evidence, it would not at all be surprising if yet another cognitive domain—that of memory—is similarly infected with implicit racial bias. In Section III, I examine research on the human memory. Such research illustrates a close connection between memory errors and racial stereotypes. In

⁴⁸ *Id.* at 510. Other words included “short,” “shy,” “rice,” and “nip.” These words had been obtained from a previous experiment in which people were asked to name their stereotypes of Asians.

⁴⁹ *Id.* at 511. The experimenters also tested how cognitive busyness affected stereotype consistent word completion. The results reported in the text are for the non-busy participants. When participants were distracted while performing their tasks, stereotypes were moderated in word completions. However, when stereotypes were activated in combination with busyness, participants were even more likely to apply stereotypes.

⁵⁰ Marianne Bertrand & Sendhil Mullainathan, *Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination*, 94 AM. ECON. REV. 991 (2004).

⁵¹ *Id.*

⁵² *Id.* at 994.

the memory domain, as well as in implicit social cognition more generally, the manifestations of implicit racial bias often conflict with a person's explicit attitudes about race. This conflict is illustrated by the gap between implicit attitudes and explicit preferences.

Explicit Racial Preference, Implicit Bias and Social Dominance. One particularly interesting characteristic of implicitly biased attitudes is that they frequently diverge from explicit racial preferences. That is, overtly racist people are not the same people who are implicitly biased.⁵³ According to Patricia Devine, “[e]ven those who consciously renounce prejudice have been shown to have implicit or automatic biases that conflict with their nonprejudiced values....”⁵⁴ For example, Correll and his colleagues evaluated “shooter” video game participants on game performance (an implicit measure) and also asked them about their racial preferences (an explicit measure).⁵⁵ Results showed that explicit measures of racial preferences were not correlated with results for the video game.⁵⁶ That is, people who exhibited greater amounts of “shooter bias” were not the same ones who endorsed more racially unequal preferences. A related and somewhat surprising finding is that implicit bias sometimes occurs by members of the bias affected group. For example, Banaji and Greenwald found that women and men both display implicit gender stereotypes that are sometimes negative towards women.⁵⁷

The relationship, if any, between implicit and explicit racial attitudes is relevant to legal discussions of bias. If implicitly biased people are also systematically explicitly biased, one could argue that the law's current protective focus on explicit and intentional discrimination might be sufficient. The law could wait for explicitly discriminatory actions and provide sufficient remedies. But if implicitly biased citizens are not always more explicitly biased, then the law's current focus on overtly racist acts overlooks a large percentage of racially biased action. Thus, legal remedies focusing on explicit actions (those that could be tied to discriminatory motive, for example) fail to corral many cases of implicitly biased racial harms.⁵⁸ The legal decision-

⁵³ Patricia G. Devine, *Implicit Prejudice and Stereotyping: How Automatic Are They? Introduction to the Special Section*, 81 J. PERSONALITY & SOC. PSYCHOL. 757 (2001).

⁵⁴ *Id.* But see Wilhelm Hofmann et al., *A Meta-Analysis on the Correlation Between the Implicit Association Test and Explicit Self-Report Measures*, 31 PERSONALITY & SOC. PSYCHOL. BULL. 1369 (2005)(finding a general relationship between implicit and explicit attitudes).

⁵⁵ Kang, *supra* note __ at 1526, citing Joshua Correll et al., *The Police Officer's Dilemma: Using Ethnicity To Disambiguate Potentially Threatening Individuals*, 83 J. PERSONALITY & SOC. PSYCHOL. 1314, 1321 (2002).

⁵⁶ *Id.*

⁵⁷ Mahzarin R. Banaji & Anthony Greenwald, *Implicit Gender Stereotyping in Judgments of Fame*, 68 J. PERSONALITY & SOC. PSYCHOL. 181 (1995).

⁵⁸ See generally Lawrence, *supra* note __; Krieger, *supra* note __.

making concerns are similar. If unconscious discrimination manifests through the racially biased memories of judges and jurors, it would be important to know whether people with stronger explicit racially hierarchical preferences are more susceptible to its influences. If not, our legal process could be propagating implicit racism with no safeguards in place.

One reliable predictor of explicit racial bias is the Social Dominance Orientation (SDO) scale. SDO is a measure that is designed to show an individual's preference for social hierarchy.⁵⁹ According to Felicia Pratto and her colleagues, a social dominance orientation is "the extent to which one desires that one's in-group dominate and be superior to out-groups."⁶⁰ The scale that developed to test SDO has been accepted as a measure of explicit racism and has often been used by social psychologists to predict anti-Black racism as well as other explicit racial preferences.⁶¹ In the empirical study I conducted on memory bias and race, *infra* Section IV, I employed the SDO scale. I conducted this test in order to determine whether implicit memory biases, if they do in fact exist, are related to explicit racial preferences.⁶² If the two are related, such that implicitly racist jurors are also explicitly racist, potential legal solutions might include employing explicit racism questionnaires for jurors. Such screenings would thus block both explicitly racist and implicitly racist jurors from participating in biased decision-making. However, if implicit memory bias and explicit racial preferences are not related, then dealing with such biases becomes significantly harder.

B. Connecting Unconscious Biases and Legal Theory

Most legal discussions of unconscious bias focus on the disharmony between legal tests for discrimination (which require explicit, intentional racism⁶³) and the psychological reality of discrimination (which is often unconscious, implicit, and does not meet traditional definitions of intent).⁶⁴ These projects meaningfully incorporate empirical research on unconscious racism research into substantive legal models, and teach us that legal standards

⁵⁹ Felicia Pratto et al., *Social Dominance Orientation: A Personality Variable Predicting Social and Political Attitudes*, 67 J. PERSONALITY & SOC. PSYCHOL. 741 (1994).

⁶⁰ *Id.* at __.

⁶¹ To confirm validity, Pratto and her colleagues simultaneously tested their SDO measure along with several racism measures. *Id.* Results indicated that the SDO measured racism well. For each of these measures, there were significant correlations, indicating that the SDO agrees with these other scales. To see the 14-item SDO dependent variables, see *infra* note __ and accompanying text.

⁶² See *infra* note __ and accompanying text.

⁶³ See Lawrence, *supra* note __ (describing equal protection's intent doctrine); Krieger, *supra* note __ (describing Title VII's intent requirement).

⁶⁴ See Krieger, *supra* note __ (critiquing the continuing between disparate treatment and new knowledge on unconscious racism).

must evolve towards understanding the true workings of racial bias. This lesson is powerful. But there are other lessons we must learn from the new research on unconscious bias. Most projects to date focus on the role of unconscious bias in the discriminatory act or mental state of the perpetrator of discrimination. They have not focused on the decision-making implications of this new research. Specifically, few projects investigate how racial biases unconsciously affect judges and juries.⁶⁵ Nonetheless, the concept of unconscious racism is well established in legal scholarship.

In what is credited as the most influential legal article on unconscious racism, Charles Lawrence challenged equal protection discourse with a psychological theory of unconscious discrimination.⁶⁶ “[W]e are all racists,” he proclaimed, and noted that “most of us are unaware of our racism.”⁶⁷ Drawing upon research in both Freudian analysis and cognitive psychology, Lawrence questioned how the *Washington v. Davis*⁶⁸ discriminatory purpose doctrine reflected an American culture that consistently propagates discrimination, most of which is unconscious. The intent doctrine, Lawrence argued, not only misses the mark because of the scientific reality of unconscious racism, but in doing so fails to carry out the historical call for justice central to the Equal Protection Clause.⁶⁹ Now, almost 20 years after Lawrence’s article was published, a heavily empirically focused field of psychology supports Lawrence’s contentions more than ever, highlighted by implicit social cognition findings. Even the current field of cultural psychology, developed in the past two decades and a mere embryo in 1987, was born from an idea similar to Lawrence’s discussion of culture-- that cultural knowledge constantly shapes the way societal members think, feel, and perceive reality.⁷⁰ This new scientific field has begun to help deconstruct

⁶⁵ Scholarship in the area of race and juries for the most part focuses either on the ultimate decision of the jury, or on areas like eyewitness identification. These projects often overlook the powerful workings of unconscious bias in the various stages of legal decision-making. For a discussion of some of the existing work on race and eyewitness identification, see *infra* note __ and accompanying text.

⁶⁶ Lawrence, *supra* note __.

⁶⁷ Lawrence, *supra* note __ at 322.

⁶⁸ *Washington v. Davis*, 426 U.S. 229 (1976).

⁶⁹ Lawrence, *supra* note __ at __.

⁷⁰ See Richard A. Shweder, *Cultural Psychology - What Is It*, in CULTURAL PSYCHOLOGY (James W. Stigler et al. eds., 1990); Joan G. Miller, Culture and the Development of Everyday Social Explanation, 46 J. PERSONALITY & SOC. PSYCHOL. 961 (1984). See also Michael Morris & Kaiping Peng, *Culture and Cause: American and Chinese Attributions for Social and Physical Events*, 67 J. PERSONALITY & SOC. PSYCHOL. 949 (1994); See Li-Jun Ji et al, *Culture, Change, and Prediction*, 12 PSYCHOL. SCI. 450 (2001); RICHARD E. NISBETT, *THE GEOGRAPHY OF THOUGHT: HOW ASIANS AND WESTERNERS THINK DIFFERENTLY...AND WHY* (2003). The role of cultural norms in stereotype formation was also discussed by Eric Yamamoto. ERIC K. YAMAMOTO, *INTERRACIAL JUSTICE: CONFLICT & RECONCILIATION IN POST-CIVIL RIGHTS AMERICA*

cognitive biases (by illustrating their cultural limitations⁷¹) and lends support to Lawrence's theory that the cultural foundations of unconscious racial discrimination must be investigated and understood.⁷²

Outside of equal protection discourse, a major area of focus on unconscious racism has been in the employment discrimination arena, where scholars have debated not only whether unconscious racism actually affects employment decisions, but also how employment law doctrine should change (or not change) to incorporate a better understanding of how racism truly works. In an early major project in this area, Linda Hamilton Krieger discussed subtle forms of racism in Title VII employment discrimination cases, arguing that disparate treatment jurisprudence incorrectly assumes motivational, rather than cognitive, bases for discrimination.⁷³ Stating that though employment discrimination law's assumptions about the nature of discrimination may have been accepted historically by scientists, "these assumptions have been so undermined, both empirically and theoretically, that they can no longer be considered valid."⁷⁴ To illustrate the gap between the law's focus on conscious motivation and empirical evidence revealing unconscious racism, Krieger reviewed social cognition studies beginning in the 1960's, starting with research demonstrating the automatic nature of ingroup and outgroup categorization. For example, Krieger described a 1973 study by Billig and Tajfel that indicated that people chose to allocate monetary rewards to ingroup members rather than outgroup members, even when greater fairness and mutual

(1999). For legal articles discussing the intersection of cultural psychology and law, see Justin D. Levinson, *Mentally Misguided: How State of Mind Inquiries Ignore Psychological Reality and Overlook Cultural Differences*, 49 HOW. L. J. 601 (2005)(arguing for culturally competent legal rules); Justin D. Levinson & Kaiping Peng, *Different Torts for Different Cohorts: A Cultural Psychological Critique of Tort Law's Actual Cause and Foreseeability Inquiries*, 13 SO. CAL. INTERDISC. L.J. 195 (2004)(highlighting cultural differences cognitive biases, causation and foreseeability in the U.S. and China); Justin Levinson & Kaiping Peng, *Valuing Cultural Differences in Behavioral Economics*, available at SSRN (unpublished manuscript, May 2006) (arguing for a cultural model of behavioral economics).

⁷¹ See Levinson & Peng, *supra* note __.

⁷² See *infra* Section V for a more detailed discussion of the cultural influences of thought and decision-making.

⁷³ Krieger, *supra* note __ at 1186-1211. See also Deana Pollard, *Unconscious Bias and Self-Critical Analysis: The Case for a Qualified Evidentiary Equal Employment Opportunity Privilege*, 74 WASH. L. REV. 913 (1999) (arguing for a qualified evidentiary privilege to encourage unconscious-bias testing); Jessie Allen, Note, *A Possible Remedy for Unthinking Discrimination*, 61 BROOK L. REV. 1299 (1995) (sounding another early call for incorporating unconscious discrimination into intentional discrimination standards); Amy L. Wax, *Discrimination as Accident*, 74 Ind. L.J. 1129 (1999)(discussing "unconscious disparate treatment").

⁷⁴ Krieger, *supra* note __ at 1165.

gain would have been achieved using other allocations.⁷⁵ Bridging empirical findings and anti-discrimination policy, Krieger suggested reformulating disparate treatment doctrine to allow proof that group status played a role in causing an employment decision. This change would alter courts' focus from an intentionality standard-- whether an employer intended that race make a difference in an employment decision, to a causation standard-- whether race or group status made a difference in the decision.⁷⁶

Since Krieger's groundbreaking work, employment law scholarship has blossomed with discussions of unconscious racism.⁷⁷ Ann McGinley claimed that the Title VII's proof constructs did historically and should now include evidence of unequal treatment caused by unconscious discrimination, but that courts have been unjustifiably tightening their analysis in ways that exclude such evidence.⁷⁸ Lu-In Wang carried forward Krieger's focus on unconscious racism, arguing that institutions are partly to blame for perpetuating a status quo fraught with racial bias.⁷⁹ Tristin Green argued that corporate culture itself propagates racism in an unconscious way.⁸⁰ Melissa Hart focused on how existing Title VII remedies may actually provide redress for unconscious racism manifested in employment decisions.⁸¹ Angela Onwuachi-Willig and Mario Barnes critiqued Title VII in light of Bertrand and Mullainathan's study,⁸² arguing that constructed social meanings of race (such as someone being "regarded as" Black), rather than race itself, should be used in legal

⁷⁵ *Id.* at 1192-1193 (citing Michael Billig & Henri Tajfel, *Social Categorization and Similarity in Intergroup Behavior*, 3 EUR. J. SOC. PSYCHOL. 37 (1973)).

⁷⁶ *Id.* at 1242.

⁷⁷ See, e.g. Audrey J. Lee, *Unconscious Bias Theory in Employment Discrimination Litigation*, 40 HARV. C.R.-C.L. L. REV. 481 (2005).

⁷⁸ Ann C. McGinley, *¡Viva La Evolucion!: Recognizing Unconscious Motive in Title VII*, 9 CORNELL J. L. & PUB. POL'Y 415, 419 (2000).

⁷⁹ Lu-In Wang, *Race as Proxy: Situational Racism and Self-Fulfilling Stereotypes*, 53 DEPAUL L. REV. 1013 (2004).

⁸⁰ Tristin K. Green, *Work Culture and Discrimination*, 93 CAL. L. REV. 623 (2005).

⁸¹ Melissa Hart, *Subjective Decisionmaking and Unconscious Discrimination*, 56 Ala. L. Rev. 741, 745-49 (2005).

⁸² Bertrand & Mullainathan, *supra* note __. An article that predates and contextualizes Bertrand & Mullainathan as well as others' research in the field is Mari J. Matsuda, *Voices of America: Accent, Antidiscrimination Law, and a Jurisprudence for the Last Reconstruction*, 100 YALE L.J. 1329 (1991)(stating "[s]omeone who tells you they don't like the way you speak is quite likely telling you that they don't like you"). Matsuda addressed the role of prejudice relating to the way racial minorities speak and casts the importance of voice and accent in (and beyond) a Title VII framework. While Bertrand and Mullainathan did not test the role of voice and accent in hiring decisions, one might anticipate that such a study would be worth conducting. For a recent article on the changing form of discrimination, see Kimberly A. Yuracko, *Trait Discrimination as Race Discrimination: An Argument About Assimilation*, 74 GEO. WASH. L. REV. 365 (2006).

applications of anti-discrimination laws.⁸³ Samuel Bagenstos described the compelling nature of unconscious racism literature and used it to evaluate a “structural approach” to antidiscrimination law, which he claimed highlights both the hope and also the challenges of discrimination.⁸⁴

Legal scholarship on unconscious bias has not been limited to equal protection and employment discrimination discussions. In other areas of law, the prevalence of scholarship discussing unconscious racism has increased greatly.⁸⁵ Critiquing the FCC’s call for more local news by virtue of the 2003 Media Ownership Order and related “public interest” obligation, Jerry Kang relied on social cognition research in claiming that local news broadcasts can act as a “trojan horse,” a covert delivery mechanism that propagates the implicit tools of racism.⁸⁶ Kang systematically described social cognition studies that indicate that the simple presence of racial cues can trigger unconscious racial bias. For example, Kang reviewed research on the IAT, detailed studies on shooter bias, and discussed a variety of other studies.⁸⁷ He then demonstrated how these accounts of unconscious racial bias are not harmless attitudes with little or no connection to real world effects. Instead, they can be directly linked to racially biased behavior, interactions and outcomes, as confirmed by the racial discrepancies found in Bertrand and Mullainathan’s study of racially stereotyped names and job interview requests, among others.⁸⁸ Furthermore, echoing Krieger’s prior message, Kang’s account provided compelling evidence that people frequently have no conscious awareness of their own implicit biases.⁸⁹

Kang recently joined with Banaji to argue for a “fair measures” model of affirmative action that incorporates knowledge from implicit social cognition.⁹⁰ Advancing a new methodology called “behavioral legal realism,”⁹¹ Kang and

⁸³ Angela Onwuachi-Willig & Mario L. Barnes, *By Any Other Name? On “Being Regarded” as Black, and Why Title VII Should Apply Even if Lakisha and Jamal are White*, 2005 WISC. L. REV. 1283 (noting that employers often use other criteria as proxies for race, national origin, sex, religion, or age).

⁸⁴ Samuel R. Bagenstos, *The Structural Turn and the Limits of Antidiscrimination Law*, 94 CAL. L. REV. 1 (2006).

⁸⁵ See, e.g. Reshma M. Saujani, *“The Implicit Association Test”: A Measure of Unconscious Racism in Legislative Decision-Making*, 8 MICH. J. RACE & L. 395, 413-15 (2003); Andrew Elliot Carpenter, student article: *Chambers v. Mississippi: The Hearsay Rule and Racial Evaluations of Credibility*, 8 WASH. & LEE R.E.A.L. J. 15 (2002)(arguing that unconscious racial bias affects judicial determinations of witness creditability).

⁸⁶ Kang, *supra* note __ at 1508.

⁸⁷ *Id.* at 1525.

⁸⁸ *Id.* at 1515. See Bertrand & Mullainathan, *supra* note __.

⁸⁹ Kang, *supra* note __ at 1508.

⁹⁰ Kang & Banaji, *supra* note __.

⁹¹ This model seeks to expose and then remedy gaps between legal assumptions and

Banaji addressed the unpersuasive nature of traditional debates over affirmative action, pointing out that implicit social cognition research opens new avenues for affirmative action discourse.⁹² Demonstrating the many ways that implicit racial bias functions automatically and contrary to explicit preferences, they proposed a system of “fair measures” that harnesses science as part of policy development. Taking “fair measures” in response to societal implicit biases requires counteracting or avoiding (if and when possible) the harmful effects of implicit bias. For example, Kang and Banaji argue that “cloaking” social category⁹³ or removing stereotype threat triggers⁹⁴ can help avoid known areas of harm connected to bias.⁹⁵ Kang and Banaji also use evidence of successful bias reduction strategies to call for a new type of fair measure—using “debiasing agents”.⁹⁶ This fair measure harnesses bias reduction studies indicating that minority role models and authority figures have the unique ability to temporarily reduce (or at least suppress) implicit bias. In practical terms, using a “debiasing agent” might include publicizing or hiring counter-stereotypical exemplars—such as women construction workers, male nurses, Black intellectuals, and White janitors.⁹⁷ If people recognize and associate these debiasing agents as “anchored to that social category,” related biases and stereotypes may become moderated over time.⁹⁸

Another example of the growing scholarship on unconscious racism is Antony Page’s critique of the Batson v. Kentucky three-step procedure for attacking peremptory challenges.⁹⁹ Presenting a broad array of evidence detailing the automaticity of racial and gender stereotyping, Page challenged the Batson test in light of social science research.¹⁰⁰ Supporting Krieger and

scientific reality. *Id.* at [2]. Work by Lawrence, Kreiger, and others focusing on unconscious motives fits nicely within this “behavioral realist model.” *See also* Levinson, *supra* note __ (“Mentally Misguided”) (empirically evaluating the gap between legal standards of “intent” and psychology reality of the way people perceive intentionality).

⁹² *Id.* at [7].

⁹³ Blind grading is an example of a cloak already employed in many law schools. *Id.* at [25]. The authors point out that such a step could help ameliorate effects such as those demonstrated by Bertrand and Mullainathan’s job resume study. *Id.* at [25-26].

⁹⁴ Stereotype threat describes the harmful effects that can be generated simply by “priming” racial or other stereotype consistent constructs. For example, having African American students identify their race before taking a standardized test has been shown to lower their standardized test scores. *See* Steele & Aronson, *supra* note __. Avoiding racial primes in such situations may not fully counteract the effect of stereotypes on test performance, but it certainly can reduce it. *See* Kang & Banaji, *supra* note __ at [28].

⁹⁵ Kang & Banaji, *supra* note __ at [25-32].

⁹⁶ Kang and Banaji use a “fair measures” model instead of an “affirmative action” model. *See Id.* at [4] (explaining the new terminology).

⁹⁷ *Id.* at [39].

⁹⁸ *Id.*

⁹⁹ Page, *supra* note __.

¹⁰⁰ Page also highlighted the faultiness of human memories when information is

Kang's work that pointed out the disconnect between conscious awareness and implicit bias, Page argued that because attorneys are not aware of their own thought processes, they may not themselves even know fully why they exercised a peremptory challenge.¹⁰¹

Focusing on practical solutions to the unconscious racism problem, Jody Armour discussed unconscious racism by distinguishing between stereotypes and personal beliefs, and proposed using egalitarian (conscious) personal beliefs to help overcome the effects of unconscious racism on juries.¹⁰² Armour argued that the best bias-combating strategies are not ex-post constitutional law inquiries (as called for by the intent doctrine), but a practical and scientifically grounded bias reduction strategy targeting legal decision-makers.¹⁰³ Despite Armour's early call for bias reduction and for future research on overcoming bias, social cognition research in the past decade has not yet provided a universal bias reduction solution. In fact, overcoming implicit biases such as those demonstrated by the IAT appears to be quite difficult, and is particularly resistant to conscious efforts.¹⁰⁴ Through the years, however, scholars have kept Armour's focus on overcoming bias alive. In one such recent project, Christine Jolls and Cass Sunstein suggested that perhaps legal rules themselves can offer clues to dealing with biases in the legal setting.¹⁰⁵

Scholars have also incorporated knowledge of implicit racial bias into political lawyering and social justice strategies. Calling for practical applications of research on implicit bias, Gary Blasi argued that scientific research on the human mind and racial bias should be understood and applied by practicing attorneys and public policy advocates.¹⁰⁶ As Blasi pointed out,

inconsistent with stereotypes, and pointed out that people can also have “‘memory illusions’, in which [people] recall stereotype-confirming behaviors that never actually transpired. Page, *supra* note __ at 220-221, citing Tadesse Araya et al., *Remembering Things That Never Occurred: The Effects of To-Be-Forgotten Stereotypical Information*, 50 EXPERIMENTAL PSYCHOL. 27 (2003).

¹⁰¹ Page, *supra* note __ at 160.

¹⁰² Jody Armour, *Stereotypes and Prejudice: Helping Legal Decisionmakers Break the Prejudice Habit*, 83 CALIF. L. REV. 733 (1995). Jerry Kang notes that Armour's distinction is roughly analogous to the difference between implicit versus explicit. See Kang, *supra* note __ at 1508, note 81.

¹⁰³ *Id.*

¹⁰⁴ See Jerry Kang, *supra* note __ at 1562 (noting that while conscious control may not counteract implicit attitudes demonstrated by the IAT, consciously altering “informational and interaction” environment might help). Kang notes that implicit biases can be fought with implicit methods. See Section V *infra* for a more detailed discussion of bias reduction strategies.

¹⁰⁵ Christine Jolls & Cass Sunstein, *The Law of Implicit Bias*, CAL. L. REV. (forthcoming 2006).

¹⁰⁶ Blasi, *supra* note __ at 1245.

understanding the true unconscious nature of bias can reshape the nature of effective advocacy. Eric Yamamoto also recognized the importance of understanding unconscious racial forces in a public policy advocacy setting.¹⁰⁷ Examining the gap between legal efforts for social justice and scholarly pursuits in critical race theory, Yamamoto argued that political lawyering must become compatible with current perspectives on racism and bias, including the complex role of unconscious racism in society.¹⁰⁸

Perhaps reflecting successes of the sort advocated by Blasi and Yamamoto, recent judicial decisions have begun to recognize the influence of unconscious racial discrimination.¹⁰⁹ In *Chin v. Runnels*, a criminal defendant convicted of murder appealed the guilty verdict on *habeas corpus* grounds, arguing that Chinese-American, Filipino-American and Hispanic-Americans had been excluded from service as foreperson on the grand jury that indicted him. Though the court denied the appeal in light of the “narrow standard of review available,”¹¹⁰ Judge Breyer nonetheless discussed the evidence regarding foreperson selection, which led to a “strong inference that the selection process may not have been race-neutral.”¹¹¹ In the San Francisco court’s jurisdiction, no Chinese-American, Filipino-American, or Latinos had been chosen to be grand jury foreperson during a thirty-six year period, a result that would have amounted to a .0003% chance if evaluated based on the chances of random selection.¹¹² Breyer wrote: “the complete absence of grand jury forepersons of Chinese, Filipino, or Latino descent over a 36-year period begs the question whether unconscious stereotyping or biases may have contributed to the exclusion of these groups notwithstanding the best of intentions of those

¹⁰⁷ Eric K. Yamamoto, *Critical Race Praxis: Race Theory and Political Lawyering Practice in Post Civil Rights America*, 95 MICH. L. REV. 821 (1997) (recognizing the continued power of Lawrence’s arguments and drawing on the cultural links to discrimination).

¹⁰⁸ *Id.* at 830.

¹⁰⁹ *Chin v. Runnels*, 343 F. Supp.2d 891 (N.D. Cal. 2004). Two recent projects discuss this case. See Darren Seiji Teshima, *A "Hardy Handshake Sort of Guy": The Model Minority and Implicit Bias About Asian Americans in Chin v. Runnels*, 11 UCLA ASIAN PAC. AM. L.J. 122 (2006) (arguing that “court officials unconsciously relied on the stereotype of Asian Americans as unassertive and passive”); Sara R. Benson, *Reviving the Disparate Impact Doctrine to Combat Unconscious Discrimination: A Study of Chin v. Runnels*, 31 T. MARSHALL L. REV. 43 (2005) (predicting that evidence of severe disparate impact plus unconscious bias will be enough will be enough for a plaintiff’s victory). A more famous instance of unconscious discrimination being mentioned in the courts occurred in Justice O’Connor’s dissent in *Georgia v. McCollum*. *Georgia v. McCollum*, 505 U.S. 42, 68 (1992) (O’Connor, J., dissenting) (“It is by now clear that conscious and unconscious racism can affect the way white jurors perceive minority defendants and the facts presented at their trials, perhaps determining the verdict of guilt or innocence.”).

¹¹⁰ *Id.* at 39.

¹¹¹ *Id.* at 40.

¹¹² *Id.*

involved.”¹¹³ Other prominent juridical references to unconscious racism have included references at the Circuit Courts¹¹⁴ and the Supreme Court.¹¹⁵

As legal scholarship on unconscious bias has grown, empirical studies have consistently improved their methodology and continue to reveal a complex web of implicitly racist attitudes and stereotypes.¹¹⁶ Nonetheless, legal scholars and psychologists have generally overlooked how implicit racism explicitly effects legal decision-making processes.¹¹⁷ This hole in legal discourse continues to heighten the need for studies that connect unconscious racism with the legal decision-making processes.

III. MISREMEMBERING LEGAL FACTS IN RACIALLY STEREOTYPED WAYS

It should come as no surprise that the human mind does not always act like a sponge. In the legal setting, we hope but hardly expect that jurors exhibit perfect retention of trial facts, particularly in complicated trials.¹¹⁸ Many recent discussions of cognitive bias, for example, detail biases that are intimately connected with judge and juror memory.¹¹⁹ Nonetheless, despite our

¹¹³ *Id.* at 41.

¹¹⁴ *Id.* at 42-43, citing *EEOC v. Inland Marine*, 729 F.2d 1229 (9th Cir. 1984), cert. denied 469 U.S. 855 (1984); *Gonzalez-Rivera v. INS*, 22 F.3d 1441 (9th Cir. 1994); *United States v. Bishop*, 959 F.2d 820 (9th Cir. 1992); *Bush v. Commonwealth Edison Co.*, 990 F.2d 928 (7th Cir. 1993).

¹¹⁵ *Id.* at 43, citing *Georgia v. McCollum*, 505 U.S. 42 (1992)(O’Connor, J., dissenting).

¹¹⁶ The evolution and debate over the IAT’s validity exemplifies the methodological challenges that must be overcome in order to have “good science.” These challenges increase the quality of subsequent projects.

¹¹⁷ Most studies on race in the law have focused on how race affects guilty verdicts. These studies are focused more on the outcome than on the process. One potential way to overcome this gap in research is through cross-disciplinary collaborations. For a few examples of recent cross-disciplinary collaborations, see, e.g. Kang & Banaji, *supra* note __; Gary Blasi & John T. Jost, *System Justification Theory and Research: Implications for Legal Advocacy and Social Justice* (forthcoming CAL. L. REV. 2006). A few collaborations have tested psychological phenomena in legal scenarios. See Levinson & Peng, *supra* note __ (2006).

¹¹⁸ See *Johnson v. Louisiana*, 406 U.S. 356, 389 (1972) (J. Douglas dissenting, recognizing that juror memory of trial facts is “imperfect”); M. Neil Brown et al., *The Shared Assumptions of the Jury System and Market System*, 50 ST. LOUIS L. J. 425, 460 (2006) (questioning juror memories when scientific studies indicate that people can only store 1% of information as long term memory). For a psychological study assessing juror memory retention generally, see Mary E. Pritchard & Janice M. Keenan, *Memory Monitoring in Mock Jurors*, 5 J. EXPERIMENTAL PSYCHOL.: APPLIED 152 (1999)(demonstrating no correlation between mock jurors predictions and confidence in memory and actual memory performance).

¹¹⁹ The hindsight bias and availability heuristic are two examples. For discussions on these topics, see, e.g. Kamin & Rachlinski, *supra* note __; Rachlinski, *supra* note __;

understanding that jurors' memory capacities are limited and that cognitive biases persist, we still assume that these cognitive limitations are not embedded with racial bias. As we have seen, however, social cognition research on implicit bias has taught us that people experience difficulty in performing a variety of simple cognitive tasks when basic racial constructs are active.¹²⁰ It should not be surprising, then, if we learned that when participating in cases with racially diverse legal parties, jurors (and perhaps judges) unknowingly misremember trial information in systematically biased ways.

This section explores research in human memory processes and presents theoretical background for my claim that legal decision-making processes are hindered by unconscious racial bias in memory retention of case facts. To provide an overview of the relevant topics in memory, it explores a variety of empirical studies on the human memory. These studies include examinations of false memory generation, the interaction between false memories and stereotypes, and memory errors known as "source monitoring error." The discussion then turns from proof of individual memory errors to address whether individual errors will affect group decision-making processes. Taken together, research in memory and decision-making indicates that memory errors are normal, occur in stereotype driven ways, and can manifest in a variety of ways that can ultimately affect legal decision-making.

A. Memory Errors Are Normal and Meaningful

Until the 1990's, memory errors were frequently considered "noise" by social scientists.¹²¹ As a result, experimenters usually overlooked whether memory failures and false memories occurred systematically or whether they provided clues as to links between false memories and stereotypes. In recent years, however, scholars of memory and cognitions have learned a great deal about the ways in which the human brain can systematically misremember

Ronald J. Gilson & Reinier Kraakman, *Mechanisms of Market Efficiency Twenty Years Later: The Hindsight Bias*, 28 IOWA J. CORP. L. 715 (2003). Philip G. Peters, Jr., *Hindsight Bias and Tort Liability: Avoiding Premature Conclusions*, 31 ARIZ. ST. L.J. 1277 (1999); Hal R. Arkes & Cindy A. Schipani, *Medical Malpractice v. the Business Judgment Rule: Differences in Hindsight Bias*, 73 OR. L. REV. 587 (1994); April M. Perry, Comment: *Guilt by Saturation: Media Liability for Third-Party Violence and the Availability Heuristic*, 97 NW. U. L. REV. 1045 (2003).

¹²⁰ See Banaji & Greenwald, *supra* note ____.

¹²¹ Alison P. Lenton et al., *Illusions of Gender: Stereotypes Evoke False Memories*, 37 J. EXPERIMENTAL SOC. PSYCHOL. 3 (2001). Not all early work disregarded the social context of remembering. Bartlett believed that "remembering is an active process that is guided and shaped by people's knowledge and beliefs about the world." C. Neil Macrae et al., *Creating Memory Illusions: Expectancy-Based Processing and the Generation of False Memories*, 10 MEMORY 63 (2002), citing FREDERIC C. BARTLETT, REMEMBERING: A STUDY IN EXPERIMENTAL AND SOCIAL PSYCHOLOGY (1932).

facts.¹²² According to Daniel Schacter, memory errors can be grouped into two broad categories: forgotten information and distorted recollections.¹²³ Errors based upon forgotten information and distorted recollections both have the potential to influence the way juries recall and “mis-recall” the facts of cases. Yet, few memory errors have been investigated in the context of jury decision-making.¹²⁴ Nonetheless, research on human memory processes has prospered outside of the law. These studies have revealed two major themes: (1) people are generally unaware of how their memories work;¹²⁵ and (2) misremembrances are not random-- they are normal, predictable and meaningful.¹²⁶ The first theme perhaps illustrates why legal scholars have underutilized memory research in decision-making discussions (though studies on eyewitness identification have incorporated it in detail¹²⁷). The second theme and its implications illustrates why legal scholars should pay more attention to memory research.

Misremembrances occur outside of our conscious awareness. According to C. Neil Macrae and his colleagues, people are “unwittingly duped into believing that the contents of consciousness comprise an accurate record of the experienced past, when in fact they do not. Instead, these items are false memories, illusory experiences of events, actions, and utterances that never occurred.”¹²⁸ But why do false memories arise and what can we learn from them? Memory researchers have found that false memories emerge regularly in the course of a normally cognitive functioning and that they are explainable by understanding the intricacies of the human mind.¹²⁹ Some memory researchers have posited that people unknowingly reconstruct the past in ways that flatter their egos and serve to bolster their theories and beliefs about themselves.¹³⁰ Others, however, have documented that false memories emerge

¹²² See MEMORY DISTORTION: HOW MINDS, BRAINS, AND SOCIETIES RECONSTRUCT THE PAST (Daniel Schacter, ed. 1995).

¹²³ Schacter calls these error categories the “sin of omission” and the “sin of commission,” respectively. DANIEL SCHACTER, THE SEVEN SINS OF MEMORY: HOW THE MIND FORGETS AND REMEMBERS (2001).

¹²⁴ But see Jeanine Skorinko et al., Stereotypic Crimes: How Group-Crime Associations Affect Memory and (Sometimes) Verdicts and Sentencing (unpublished manuscript, on file with author, June 2006). This study is discussed *infra* note __ and accompanying text.

¹²⁵ CURT R. BARTOL & ANNE M. BARTOL, PSYCHOLOGY AND LAW: THEORY, RESEARCH AND APPLICATION 228 (3rd ed. 2004).

¹²⁶ Macrae et al., *supra* note __.

¹²⁷ These studies are often lead by psychologists rather than lawyers. See *infra* note __ and accompanying text.

¹²⁸ Macrae et al., *supra* note __ at 63.

¹²⁹ Macrae et al., *supra* note __.

¹³⁰ Macrae et al., *supra* note __ at 64, citing Anthony G. Greenwald, *The Totalitarian Ego: Fabrication and Revision of Personal History*, 35 AM. PSYCHOLOGIST 603 (1980); L. S. Newman & R.F. Baumeiser, *Toward an Explanation of the UFO Abduction*

in a broader range of situations.¹³¹ An investigation of these normal errors reveals that they frequently occur because of the human mind's heavy reliance on stereotypes.

B. Stereotypes Drive Recall Errors and False Memory Generation

Both types of memory errors, those based on recall (forgetting) and those based on distorted recollections (false memories) tend to emerge in situations where stereotypes are involved.¹³² With respect to recall, memory stereotypes facilitate ease of access of information. Thus, when people recall information, they sometimes do so based on familiarity. But familiarity is code for stereotype. Thus, people often recall stereotype-consistent information more easily than stereotype-inconsistent information.¹³³ The link between

Phenomenon: Hypnotic Elaboration, Extraterrestrial Sodomasochism, and Spurious Memories, 7 PSYCHOLOGICAL INQUIRY 99 (1996); and M. Ross, *Relation of Implicit Theories to the Construction of Personal Histories*, 96 PSYCHOLOGICAL REV. 341 (1989).

¹³¹ See H. L. Roediger & K.B. McDermott, *False Alarms About False Memories*. 106 PSYCHOL. REV. 406 (1999); H. L. Roediger & K.B. McDermott, *Creating False Memories: Remembering Words That Were Not Presented in Lists*, 21 J. EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY & COGNITION 803 (1995).

¹³² Stereotypes, by their nature, are not always bad. In fact, they serve important cognitive functions. See Page, *supra* note __ at 236. Nonetheless, the stereotypes I discuss in this section are harmful stereotypes that relate race to undesirable characteristics.

¹³³ I have oversimplified things. Stereotype consistent information is not always recalled more easily. When people perceive events, if the information they perceive deviates sufficiently from their expectations, they may actually recall it better than stereotype-consistent information. Thus, while people easily recall stereotype consistent information, sometimes they can more accurately recall stereotype-inconsistent information. This seeming inconsistency should not be too troubling. Here's an example: Imagine you go to a baseball game. At the game, you notice that at different times, the players are playing with different colors of baseballs: white baseballs and blue baseballs. Later, you are asked what color baseballs they used. You might first recall the blue baseballs—they deviated enough from your expectancy so that you encoded it more deeply in your memory. But you will also easily recall the white baseballs. For the white balls, you stored the memory loosely because it matched your mental expectancy. (Macrae et al., *supra* note __ at 65 discusses this encoding). Overall then, while stereotypes have facilitated your memory of the white baseballs, your experience was unique enough to generate a deeper level of memory storage for the blue baseballs. The baseball experience, however, will not likely translate to memories of criminal legal stories. That is because, even though we have race-based expectancies for certain crimes (e.g. violent crimes-Black), hearing about a White person committing a violent crime will not be as cognitively surprising to us as seeing a blue baseball at a game. Thus, while it is true that stereotype-inconsistent information can sometimes be remembered more accurately (the blue baseball v. the white baseball), for less cognitively surprising occurrences (the White violent criminal v. the Black violent criminal), we will more easily revert to our memory stereotypes. The results of the empirical study discussed *infra*, Section IV, appear to confirm this explanation. *But see* Macrae, *supra* note __ (finding that, in the gender-employment context, participants were more likely to correctly remember names that had

stereotypes and memory is even stronger when looking at memory distortions such as false memories. Memory scholars have explained that people are more likely to generate false memories when they are consistent with stereotypes they have about the memory subject, actor and situation.¹³⁴ The tendency of false memories and stereotypes to go hand in hand emerges because people tend to misremember things that are loosely stored in the brain.¹³⁵ Stereotype consistent information is stored in broad schemas rather than deeply encoded in the human memory.¹³⁶ When people recall certain information that is part of a web of existing schemas and stereotypes, they may erroneously (and unknowingly) create additional memories (of things that never happened) that are consistent with those stereotypes.

Studies show how stereotypes are implicated both in memory recall and in memory distortion. A recent study by Jeanine Skorinko and her colleagues on memory recall demonstrates how racial stereotypes influence people's memories of crimes.¹³⁷ In the study, participants were presented scenarios of two stereotypically white crimes (ecstasy usage and identity fraud), two stereotypically black crimes (crack cocaine usage and shoplifting), and two stereotypically neutral crimes (marijuana usage and joyriding).¹³⁸ The race of the crime perpetrator in the stories was varied. After reading the stories, participants were asked to recall crime information by matching the race of the perpetrator with the crime. Results indicated that participants were more likely to recall the race of the Defendant when the crime matched the racial stereotypes of that defendant. For example, for hate crimes, participants were more likely to recall the race of a Caucasian perpetrator than an African American perpetrator. The study shows that racial stereotypes can systematically affect jurors' (unconscious) recollections in the legal setting, and that jurors may exhibit better recall of information about stereotypical criminals and crimes.¹³⁹

been paired with stereotype inconsistent occupations); C. Stangor & D. McMillan, *Memory For Expectancy-Congruent and Expectancy-Incongruent Information: A Review of the Social and Social Developmental Literatures*, 111 PSYCHOL. BULL. 42 (1992)(finding that stereotype-inconsistent information is recalled more accurately under certain conditions).

¹³⁴ Skorinko et al., *supra* note __.

¹³⁵ Lenton et al., *supra* note __.

¹³⁶ *Id.*

¹³⁷ Skorinko et al, *supra* note __. A stereotype is "a cognitive representation of the ideas, facts and images that are associated with a social group." See Lenton *et al.*, *supra* note __ at 3.

¹³⁸ Skorinko et al., *supra* note __. The researchers pre-tested race-crime stereotypes to confirm the racial stereotype categorization.

¹³⁹ Skorinko and her colleagues' results indicated that racial minorities are not always on the short end of the memory stick. For example, Caucasians were more frequently remembered to have committed hate crime. The results of the study indicate that the biased connection is not directly between race and memory, but instead it is between stereotype

Skorinko and her colleagues' study indicates that accuracy of recall can be influenced by stereotype consistency. A study by Alison Lenton and her colleagues expands the influence of stereotypes to include false memories.¹⁴⁰ They presented participants with a list of words,¹⁴¹ some of which were stereotypic of women (such as secretary and nurse) and others of which were stereotypic of men (such as lawyer and soldier). After giving a distraction task, participants were given a recognition test.¹⁴² Results showed that participants used gender stereotypes in creating false memories. That is, they more often (incorrectly) reported that they had seen gender-stereotyped words than non gender stereotyped words. Results also indicated that these false memories were elicited implicitly. Despite the nature of their errors, participants were completely unaware of the gender stereotype theme of the word lists.¹⁴³ The researchers expressed concern that the implicit creation of stereotype-consistent false memories may help to explain the "self-perpetuating nature of stereotypes and their resistance to change."¹⁴⁴

Studies on the influence of "cognitive busyness" on stereotypes and false memories indicate that even more false memories are generated when people are under stress, distracted, older, or otherwise cognitively busy.¹⁴⁵

and memory. Nonetheless, because of the deep connection between minorities and negative stereotypes (and because violent crimes are stereotypical of African Americans), the unfortunate effects of memory stereotype biases frequently falls upon African Americans and other minority groups rather than on Caucasians.

¹⁴⁰ Lenton et. al., *supra* note ___. See also Macrae et al., *supra* note (corroborating these results for false memory generation).

¹⁴¹ All participants were shown fifty words that constituted gender neutral roles and fifteen words that were gender stereotyped. Of these fifteen words, half of the participants received female stereotype roles and half received male stereotype roles. To make the gender context non obvious, the gender specific stereotype roles were mixed in among the other fifty words. *Id.* at 6.

¹⁴² *Id.* at 6.

¹⁴³ *Id.* at 10. The percentage awareness was slightly higher in the researcher's first experiment (of two). Nonetheless, the researchers considered the low awareness levels in both experiments to support a theory of implicit activation of stereotype-consistent information.

¹⁴⁴ *Id.* at 12.

¹⁴⁵ Macrae et al., *supra* note __ at 71. Stress, fatigue, and divided attention have all been shown to impair a person's recall ability. Even the aging process can lead to more false memories. As people age, their frontal lobe brain function decreases, and they become more likely to rely heavily on schemas at the expense of more detailed encoding processes. Macrae et al, *supra* note __ at 72. This schema reliance translates into stereotype consistent false memories. Older adults will thus generate more stereotype-consistent false memories than younger adults. Age effects increase in severity along with time-delay effects (delay between intake of information and the recall of that information), another type of executive dysfunction. Macrae et al., *supra* note __, at 71 citing *W. Koutstaal & Daniel Schacter, Gist-based False Recognition of Pictures in Older and*

Recognizing that previous memory studies on stereotype consistency and false memory had been tested using study participants whose cognitive energy was exclusively on the task at hand, Macrae and his colleagues ran a study to test how attention depletion affects false memories and stereotype consistency. They employed a gender-occupation methodology that resembled Lenton and her colleagues' word pair study.¹⁴⁶ However, in this study, both older and younger adults were tested, and half of the younger adult participants were given a simultaneous task to complete while they viewed the pairings of names and occupations.¹⁴⁷ The purpose of the simultaneous task (which consisted of counting backwards by 3's from 2000) was to split the participants' attention between the memory task and the counting task. Thus, the experimenters could test how decreased attention affects false memories and stereotypes.¹⁴⁸ As expected, the results indicated that attention depleted participants were less accurate in their memories than full attention participants.¹⁴⁹ In addition, the results showed that attention depleted young adults as well as full attention older adults committed more stereotype-consistent memory errors than full attention young adults.¹⁵⁰

In discussing the implications of their research findings on false memories and stereotype-consistency, Macrae and his colleagues surmised that "the creation of false memories may provide yet another avenue through which perceivers can bolster their pre-existing beliefs about the world," an implication they found "sobering."¹⁵¹ In the legal context, the study's results are similarly troubling. Rarely are judges and jurors focusing on one piece of information at a time. Age, multiple jury instructions, detailed factual

Younger Adults, 37 J. EXPERIMENTAL SOC. PSYCHOL. 3 (1997). Many researchers link age differences in false memories to frontal lobe brain function. *Id.* at 72. While older people typically experience more memory errors than younger people, some younger people, such as those with poor reading comprehension skills, have a propensity for false memories. *See Id.* at 77, citing R. DeBeni et al., *Increases in Intrusion Errors and Working Memory Deficit of Poor Comprehenders*, 52 Q. J. EXPERIMENTAL PSYCHOL.: HUM. EXPERIMENTAL PSYCHOL. 305 (1998).

¹⁴⁶ See notes ___ - ___ and accompanying text.

¹⁴⁷ None of the older adults were given the attention depletion. Researchers only depleted the attention of a group of younger adults because they theorized that attention depleted young adults make similar stereotype-consistent false errors to older adults giving full attention. *See Id.* at 72.

¹⁴⁸ Legal commentators can analogize attention depletion to the concept of cognitive overload in juries. *See J.J. Prescott & Sonja Starr, Improving Criminal Jury Decision-Making After the Blakely Revolution*, 2006 U. ILL. L. REV. 301 (discussing cognitive overload and other cognitive challenges in the context of post-Blakely increased juror responsibilities).

¹⁴⁹ Macrae et al., *supra* note ___ at ___.

¹⁵⁰ *Id.* at 74.

¹⁵¹ *Id.* at 75.

presentations, new, more complex legal standards,¹⁵² and conflicting testimony are all likely to add to cognitive depletion. As a result, one can expect a significant amount of stereotype consistent memory errors to manifest in a legal setting.

C. Legal Memories Gone Wrong: Source Attribution Errors.

False memories are normal and can unconsciously propagate stereotypes. But what types of false memories are likely to emerge in legal decision making? One particular type of error, called source attribution error, may help us understand how systematic memory bias may be implicated in legal decision-making. While this memory error has sometimes been applied to eyewitness memory faults,¹⁵³ it has not been discussed in the context of juror memory errors and unconscious racial bias.

Gordon Allport and Leo Postman conducted an early and influential study that illustrated a source attribution error in the “telephone game.”¹⁵⁴ In the study (which was not originally intended to be a memory study but a study about rumors), participants viewed a picture of a two passengers on a streetcar (one passenger was White and one was Black). In the picture, the White passenger holds a razor blade and the Black passenger is empty-handed. Participants were then asked to describe the picture to other participants (who did not see the picture). As participants in the study told and re-told the story to others, the story changed. After the story had been re-told several times, participants reported that the Black passenger, not the White passenger held a razor blade. The results of the study (which had originally focused on retelling accuracy) demonstrated a source attribution error—the razor blade possession shifted from one memory source (the White passenger) to another (the Black passenger). Was it a coincidence that the source attribution error reflected stereotype consistency? Quite unlikely. Rather, the study more likely stands for the proposition that source attribution errors may be triggered by stereotypes.¹⁵⁵

Source attribution errors occur when a person places the source of one memory into another setting, creating an incorrect source of another

¹⁵² See e.g. Prescott & Starr, *supra* note __.

¹⁵³ See *infra* note __ for a brief discussion of studies investigating eyewitness memory.

¹⁵⁴ GORDON W. ALLPORT & LEO J. POSTMAN, *THE PSYCHOLOGY OF RUMOR* (1947).

¹⁵⁵ See Skorinko et al, *supra* note __ at 6. A recent study by Richard Marsh and his colleagues supports this proposition. In that study, the researchers found that participants attributed sources of memory in a manner consistent with gender and sexual orientation stereotypes. Richard L. Marsh et al., *Gender and Orientation Stereotypes Bias Source-Monitoring Attributions*, 14 *MEMORY* 148 (2006).

memory.¹⁵⁶ In the context of eyewitness identification, the concerns created by source attribution errors are powerful and easy to conceptualize.¹⁵⁷ A victim of a crime or an eyewitness might unknowingly transfer the memory of a person or face into another context.¹⁵⁸ Shortly after the Oklahoma City bombing in 1995, for example,¹⁵⁹ a massive search commenced for John Doe #2,¹⁶⁰ a “young square-faced man with dark hair and a stocky build wearing a blue and white cap.”¹⁶¹ John Doe #2’s description came from a mechanic who had seen Timothy McVeigh rent a van before the bombing. After a massive search, it turned out that there was no John Doe #2. The mechanic had simply confused another van rental transaction with McVeigh’s rental. The other rental transaction had involved two men, one of whom resembled McVeigh. The second man was a stocky square-faced man. The mechanic had unconsciously transferred memory of John Doe #2 from one context to another.¹⁶²

¹⁵⁶ See Schacter, *supra* note __.

¹⁵⁷ Francis A. Gilligan et al., *The Theory of "Unconscious Transference": The Latest Threat to the Shield Laws Protecting the Privacy of Victims of Sex Offenses*, 38 B.C. L. REV. 107, 123-24 (1996). For a comprehensive discussion of memory issues in eyewitness identification, see Ralph Norman Haber & Lyn Haber, *Experiencing, Remembering, and Reporting Events*, 6 PSYCHOL. PUB. POL’Y & L. 1057 (2000). In addition to studies on source attribution errors, studies on memory in eyewitness testimony have also connected memory errors to racial bias. These studies indicate that memory errors may occur particularly when perpetrators are out-group members. Another prominent discussion of memories in the eyewitness context is the role of repressed memories, including the reemergence of repressed memories through the use of hypnosis. A wide variety of psychological and legal articles have discussed repressed memories. See, e.g. JENNIFER J. FREYD, *BETRAYAL TRAUMA: THE LOGIC OF FORGETTING CHILDHOOD ABUSE* (1996); Elizabeth F. Loftus, *The Reality of Repressed Memories*, 48 AM. PSYCHOL. 518 (1993). The “own race bias,” for example, demonstrates that people can discriminate better between faces of their own ethnic group than faces of other ethnic groups. Bartol & Bartol, *supra* note __ at __. For a discussion of own race bias in the context of legal rules, see Sheri Lynn Johnson, *Cross-Racial Identification Errors in Criminal Cases*, 69 CORNELL L. REV. 934 (1984). Research has repeatedly found that White participants are more accurate in identifying White faces than Black faces. These studies have not found a connection between explicit racial attitudes and memory of out-group races, indicating that own-race bias operates implicitly. A meta-analysis of thirty years of studies on own-race bias confirmed that racial attitudes do not serve as predictors of own-race bias. Christian A. Meissner & John C. Brigham, *Thirty Years of Investigating the Own-Race Bias in Memory for Faces: A Meta-Analytic Review*, 7 PSYCHOL. PUB. POL. & L. 3 (2001) (analyzing data from 39 separate studies on own-race bias). When analyzed in the context of juror memory, these studies suggest not only that juror memory may be subject to unconscious memory biases, but also that such biases cannot be predicted by identifying explicitly biased jurors.

¹⁵⁸ These types of errors are well documented and have been discussed in terms of evidentiary laws. Gilligan et al, *supra* note __.

¹⁵⁹ This example was given by Schacter, *supra* note __ at __.

¹⁶⁰ Timothy McVeigh was John Doe #1. *Id.*

¹⁶¹ See Schacter, *supra* note __ (giving a more detailed description of this Oklahoma City bombing attribution error).

¹⁶² *Id.* at 92. According to Schacter, the source of the mechanic’s memory error was

If source attribution errors can cause faulty eyewitness identifications, they can also cause jurors to falsely recall case facts by attributing evidentiary facts to the wrong party without recognizing it (as illustrated by Allport and Postman's study). Recall *The Confrontation* story from the beginning of this Article. In attempting to remember the story, some readers might have believed that Tyronne kicked James. Such an error would constitute a source attribution error (because Tyronne's friend kicked James, not Tyronne). Memory researchers have pointed out that, as demonstrated by Allport and Postman's results, source attribution errors can systematically occur in ways driven by stereotypes. Using an analogy from *West Side Story*, Jeffrey Sherman and his colleagues noted that "stereotype driven errors in source memory may lead you to falsely remember that the Sharks rather than the Jets committed homicide..."¹⁶³

D. Connecting Memories to Decision-Making

If implicit biases affect judge and juror memories of case facts, do these biases also affect legal outcomes?¹⁶⁴ Making such a connection requires linking the cognitive process of memory to decision-making itself. Put simply, if biased memories do not create biased outcomes, our concern should be moderated. To date, no empirical studies have tested the effects of implicitly biased memories on legal decision-making outcomes. Inside and outside the legal setting, however, the crucial role of memories in decision-making has

"unconscious transference." Francis Gilligan and colleagues clarify that unconscious transference is closely related to source attribution errors, which they claim is the more accurate psychology terminology. See Gilligan et al., *supra* note __ at 116. For purposes of this Article, to avoid confusion in terminology, I use source attribution error and unconscious transference interchangeably. According to Elizabeth Loftus, source attribution errors result from the malleable nature of human memory and allow eyewitnesses to confidently conclude that the wrong person committed a crime. *Id.*, citing ELIZABETH F. LOFTUS, *EYEWITNESS TESTIMONY* (1979). Unconscious transference is a well documented and accepted phenomenon. According to Bartol and Bartol, two surveys indicate that between 81-84.5% of psychologists believe that evidence of unconscious transference is reliable enough to be presented in court. *Id.*, citing Saul M. Kassir et al., *The "General Acceptance" of Psychological Research on Eyewitness Testimony: A Survey of the Experts*, 44 AM. PSYCHOL. 1089 (1989); Saul M. Kassir et al., *On The "General Acceptance" of Eyewitness Testimony Research*, 56 AM. PSYCHOL. 405 (2001).

¹⁶³ Jeffrey W. Sherman et al., *Bearing False Witness Under Pressure: Implicit and Explicit Components of Stereotype-Driven Memory Distortions*, 21 SOC. COGNITION 213, 243 (2003). The researchers point out the legal dangers of such a source transference, focusing on faulty eyewitness identification.

¹⁶⁴ This question resembles an early challenge to implicit social cognition work. The challenge questioned the connection between implicit attitudes and behavior. That is, do people with implicit biases act on them? Evidence has indicated that implicit bias does lead to action. See Kang, *supra* note __.

been well documented.¹⁶⁵ Thus, it is quite likely that biased memory processes result in biased legal decisions.

Cognitive psychological research has demonstrated the importance of factual memory and recall to a variety of decision-making models. Nancy Pennington and Reid Hastie developed a “Story Model” of jury decision-making, a well regarded framework of jury information processing and decision-making that focuses on understanding how jurors process information.¹⁶⁶ According to Pennington and Hastie, the first step for jurors in information processing is constructing an “explanatory model” (or story) of case facts.¹⁶⁷ During the next step, jurors attempt to memorize and understand the judicial instructions of verdict categories.¹⁶⁸ Finally, they attempt to fit their “story” into the judicial instructions.¹⁶⁹ Because of the prominent role of story formation in this decision-making model, if memory errors taint the content of the story when it is formed or recalled, they will likely be preserved. These errors will remain in the stories as jurors incorporate the story into the judicial instructions and ultimately make decisions.¹⁷⁰

Research outside of the legal field supports the argument that memory functioning is crucial to decision-making. Focusing on models in the decision sciences (sometimes called “human judgment and decision making”), Elke Weber and his colleagues argued that memory insights, particularly related to the encoding process of information into memory, are crucial to judgment and

¹⁶⁵ Nancy Pennington & Reid Hastie, *Practical Implications of Psychological Research on Juror and Jury Decision Making*, 16 PERSONALITY & SOC. PSYCHOL. BULL. 90, 95 (1990). See also Nancy Pennington & Reid Hastie, *Explanation Based Decision Making: Effects of Memory Structure on Judgment*, 14 J. EXPERIMENTAL PSYCHOL.: LEARNING MEMORY & COGNITION 521 (1988); Michael R. P. Dougherty et al., *Memory as a Fundamental Heuristic for Decision Making*, in EMERGING PERSPECTIVES ON JUDGMENT AND DECISION RESEARCH 125 (Sandra L. Schneider & James Shanteau, eds., 2003) (noting that previous models often fail to account for a variety of empirical findings linking memory to various facets of decision-making).

¹⁶⁶ See Neil Vidmar & Shari Seidman Diamond, *Juries and Expert Evidence*, 66 BROOK. L. REV. 1121, 1138 (2001) (calling Pennington and Hastie’s theory a “widely accepted” model of jury decision-making). See also Jill E. Huntley & Mark Costanzo, *Sexual Harassment Stories: Testing a Story-Mediated Model of Juror Decision-Making in Civil Litigation*, 27 L. & HUM. BEHAV. 29 (2003) (confirming, critiquing and expanding Pennington & Hastie’s model); Reid Hastie, *The Role of “Stories” in Civil Jury Judgments*, 32 MICH. J. L. REF. 227 (1999).

¹⁶⁷ Pennington & Hastie, *supra* note __ (1990). See also Pennington & Hastie, *supra* note __ (1988).

¹⁶⁸ Pennington & Hastie, *supra* note __ (1990) at __.

¹⁶⁹ *Id.*

¹⁷⁰ See, e.g., Reid Hastie, *Emotions in Jurors Decisions*, 66 BROOKLYN L. REV. 991, 1007 (claiming that juror emotional processes can influence memories and thus stories that jurors construct).

decision-making models.¹⁷¹ Highlighting the importance of a memory-focused inquiry into decision-making, Weber and his colleagues proposed that “memory can be used the way physicists use cloud chambers: to study otherwise unobservable events via the residue they leave behind.”¹⁷² In this vein, this Article examines memories for racial residue in the legal context.

Another decision-making model that highlights the importance of memory is one developed by Michael Dougherty and his colleagues.¹⁷³ This model contains three stages: (1) representational properties, (2) retrieval from memory, and (3) experience and domain knowledge. The first two of these stages illustrate that memory may fundamentally alter decision-making at multiple points in the legal decision-making process.¹⁷⁴ The representation stage focuses on two complementary ways in which memory is stored in the mind, instance-based and abstraction-based representations. In instance-based representations, individual memories are encoded and stored separately as specific memory traces.¹⁷⁵ In abstraction-based representations, summaries of stimuli or events are stored such that only “important” information is encoded (smaller details are lost).¹⁷⁶ According to Dougherty and colleagues, both types of representations are important for understanding and predicting ultimate decisions. Poor encoding quality on instance-based representations

¹⁷¹ Elke U. Weber et al., *And Let Us Not Forget Memory: The Role of Memory Processes and Techniques in the Study of Judgment and Choice*, in *DECISION MAKING, THE PSYCHOLOGY OF LEARNING AND MOTIVATION: ADVANCES IN RESEARCH AND THEORY* 33, 35 (J. Busemeyer et al., eds 1995) (citing concern in the judgment and decision-making field that the focus of the field may be too narrow). Weber and his colleagues point out that Kahneman and Tversky’s prospect theory includes an “editing phase” that was based upon memory and coding operations. *Id.* at 36.

¹⁷² *Id.* at 36-37.

¹⁷³ Michael R. P. Dougherty et al., *Memory as a Fundamental Heuristic for Decision Making*, in *EMERGING PERSPECTIVES ON JUDGMENT AND DECISION RESEARCH* 125 (Sandra L. Schneider & James Shanteau, eds., 2003) (noting that previous models often fail to account for a variety of empirical findings linking memory to various facets of decision-making). For another model of decision-making that highlights the inclusion of memory, see Valerie F. Reyna et al., *Memory, Development, and Rationality: An Integrative Theory of Judgment and Decision-Making*, in *EMERGING PERSPECTIVES ON JUDGMENT AND DECISION RESEARCH* 201 (Sandra L. Schneider & James Shanteau, eds., 2003). *See also* Elke U. Weber et al., *Beyond Strategies: Implications of Memory Representation and Memory Processes for Models of Judgments and Decision-Making*, in *RELATING THEORY TO DATA: ESSAYS ON HUMAN MEMORY IN HONOR OF BENNET B. MURDOCK* 75 (W. E. Hockley & S. Lewandowski, eds. 1991).

¹⁷⁴ Dougherty and his colleagues argue that all three stages connect memory to decision making. For purposes of this Article, I only focus on the first two. One could, however, connect the experiential stage to legal decision-making, particularly when examining the role of memories in judges’ decisions.

¹⁷⁵ *Id.* at 131.

¹⁷⁶ *Id.*

can have major effects on later judgments.¹⁷⁷ For example, it can lead people to underestimate the frequency of stimuli or to miscalculate probability judgments.¹⁷⁸ Abstraction-based representations, as relied upon in Pennington and Hastie's story-based model, similarly can lead to variability in decision-making problems.¹⁷⁹ One example of the impact of abstraction-based representations on ultimate decisions comes from the generation of cognitive errors such as framing effects.¹⁸⁰

The retrieval from memory stage focuses on biases and errors that arise when people recall information. These errors, in turn, can affect decision-making. For example, retrieval can be compromised by ordering effects, such as the primacy effect. An early example of primacy effect was demonstrated by research on people's impressions of others. This research showed that people develop more positive impressions of others when they learn positive information about those people ahead of negative information.¹⁸¹ When they learn negative information first, more negative impressions follow, even when the total mix of information is the same. This phenomenon emerged because of a memory bias—people are most likely to remember whatever information comes first. Memory biases can therefore affect decision-making in the retrieval from memory stage. At each of the first two stages of Dougherty and his colleagues' model, then, memory errors have a systematic effect on decision-making.

In light of the compelling research linking memory to decision-making, the connection between implicit memory biases and legal decision-making processes becomes even more intimate. If implicit memory biases affect judge or juror encoding or retrieval of information, such effects are likely to carry

¹⁷⁷ *Id.* at 133.

¹⁷⁸ *Id.* at 133.

¹⁷⁹ *Id.* at 136, citing Pennington & Hastie, *supra* note __ (1988)

¹⁸⁰ *Id.* at 137, citing V.F. Reyna & C.F. Brainerd, *Fuzzy Trace Theory of Framing Effects in Choice*, Presented at the 30th Annual Meeting of the Psychonomics Society, Atlanta (1989); V.F. Reyna & C.F. Brainerd, *Fuzzy Trace Theory and Framing Effects in Choice: Gist Extraction, Truncation, and Conversion*, 4 J. BEHAV. DEC. MK'G 249 (1991). Various legal scholars have focused on the legal impact of framing effects. *See, e.g.*, Chris Guthrie, *Framing Frivolous Litigation: A Psychological Theory*, 67 U. CHI L. REV. 163 (2000); Edward J. McCaffery et al., *Framing the Jury: Cognitive Perspectives on Pain and Suffering Awards*, 81 VA. L. REV. 1341 (1995); Edward A. Zelinsky, *Do Tax Expenditures Create Framing Effects? Volunteer Firefighters, Property Tax Exemptions, and the Paradox of Tax Expenditure Analysis*, 24 VA. TAX REV. 797 (2005). These scholars, however, generally overlook the role of abstraction-based memory processes in framing effects.

¹⁸¹ *Id.* at 141 (citing N. H. Anderson & S. Hubert, *Effects of Concomitant Verbal Recall on Order Effects in Personality Impression Formation*, 2 J. VERBAL LEARNING & VERBAL BEHAV. 379 (1963)).

through to legal decision-making.

E. Can Deliberations Cure Memory Errors?

The research discussed above indicates that memory plays an integral role in human decision-making processes. Nonetheless, most of the studies described have focused on individual decision-making. While judges (except those who sit on panels) certainly engage in individual decision-making, juries make decisions as groups. Thus, before concluding that individual memory biases affect legal outcomes, one must first look at research on the relationship between individual and group decision-making.¹⁸² Such scholarship indicates that group decision-making processes typically do not alter already completed individual decision-making. As a result, memory errors made by individual jurors are preserved rather than corrected.¹⁸³

Pennington and Hastie's "Story Model" of decision-making helps us evaluate whether jury deliberations are likely to correct memory biases. This model has identified two styles of juries, those that are "evidence driven" and those that are "verdict driven."¹⁸⁴ One style of jury has an opportunity to correct memory errors while another does not. According to Pennington and Hastie, "evidence-driven" juries first come to agreement about the story in order to reconcile different juror stories about what happened.¹⁸⁵ Juries that

¹⁸² A variety of studies have investigated whether racial discrimination occurs in legal verdicts. Most of these studies focus on the outcome of the legal question, whether or not a criminal defendant is guilty or not guilty, but do not focus on bias in the decision-making process. Samuel Sommers and Phoebe Ellsworth quantitatively evaluated the scholarship on race and legal decision-making. Samuel R. Sommers & Phoebe C. Ellsworth, *How Much Do We Really Know about Race and Juries? A Review of Social Science Theory and Research*, 78 CHI-KENT L. REV. 997 (2003). Their study indicated that existing studies on jury decision-making and race reveals "less...than meets the eye." Some studies, however, reveal outcome differences based on race. See Tara L. Mitchell et al., *Racial Bias in Mock Juror Decision-Making: A Meta-Analytic Review of Defendant Treatment*, 39 L. & HUM. BEHAV. 621 (2005) (finding small but significant differences in race effects on verdicts); Nancy J. King, *Postconviction Review of Jury Discrimination: Measuring the Effects of Juror Race on Jury Decisions*, 92 MICH. L. REV. 63 (1993). Studies outside of the legal context reveal a complex relationship between decision-making in racial contexts and the (non-racial) explanations given by decision-makers. See Michael I. Norton et al., *Mixed Motives and Racial Bias: The Impact of Legitimate and Illegitimate Criteria on Decision Making*, 12 PSYCHOL. PUB. POL'Y & L. 36 (2006).

¹⁸³ In some cases, jury deliberations have been argued to aggravate, rather than ameliorate, biases. See Prescott & Starr, *supra* note __. See also Cass R. Sunstein, *Group Judgments: Statistical Means, Deliberation, and Information Markets*, 80 N.Y.U. L. REV. 962 (2005) (discussing a variety of problems that arise in group deliberative processes).

¹⁸⁴ Pennington & Hastie, *supra* note __.

¹⁸⁵ Pennington & Hastie, *supra* note __ at 99 (1990). See also REID HASTIE ET AL., *INSIDE THE JURY* (1983).

engage in this type of decision-making process might have the cognitive opportunity to correct memory errors. “Verdict driven” juries, on the other hand, skip the early story stages and move ahead to the verdict stage. In doing so, they likely preserve individual juror’s stories of the evidence, thus solidifying memory errors that have been incorporated into their stories. Overall then, Pennington and Hastie’s model indicates that some jury types have an opportunity to correct memory errors, but others do not.

Research by Mary Pritchard and Janice Keenan indicates that jury deliberation often fails to correct memory errors, casting doubt upon whether “evidence driven” juries take advantage of the opportunity to improve memories during the story reconciliation stage. Interested in how successful the jury deliberation process is in correcting false memories of individual jurors, Pritchard and Keenan examined whether deliberations worked to reduce or eliminate memory errors.¹⁸⁶ They measured how event memories were initially formed and how they changed during the course of deliberations. Results indicated that deliberation only slightly improved memory errors (even though participants only accurately remembered 60% of the information tested)¹⁸⁷ and that the most vocal and dominant jurors were not always the ones with the most accurate memories.¹⁸⁸ They also found that those jurors who were more likely to change their verdict were jurors with less confidence in their memories, but not those with the least accurate memories.¹⁸⁹ The researchers concluded that courts’ assumptions that deliberation improves memory “is only weakly supported.”¹⁹⁰ Another study by Pritchard and Keenan indicates that we cannot rely on individual jurors themselves to catch or correct their memory errors.¹⁹¹ In that study, Pritchard and Keenan tested mock juror memory accuracy as well as confidence in the accuracy of their memories.¹⁹² Results indicated that jurors who were the most confident in their memories were not the most accurate.¹⁹³ These studies indicate that if individual juror memories are

¹⁸⁶ Pritchard & Keenan, *supra* note __ (2002).

¹⁸⁷ *Id.* at 600. This 60% may be significantly higher than in real trials. As Pritchard and Keenan point out, the trial they used in the study lasted only thirty five minutes long and participants were college students (who “tend to have better memories than the typical jury pool”).

¹⁸⁸ *Id.* at 595, 600.

¹⁸⁹ *Id.* at 600. The authors concluded that the assumption that jury deliberation

¹⁹⁰ *Id.*

¹⁹¹ Pritchard & Keenan, *supra* note __ (1999).

¹⁹² Pritchard & Keenan, *supra* note __ (1999).

¹⁹³ *Id.* at 161. Participants, however, were fairly accurate in their ex-post assessments of their memories. These results mirror one of the major flaws encountered in eyewitness testimony—that jurors erroneously assume that confident eyewitnesses are the most accurate ones. See Gary L. Wells & Amy L. Bradfield, “Good, You Identified the Suspect”: Feedback to Eyewitnesses Distorts Their Reports of the Witnessing Experience, 82 J. APPLIED PSYCHOL. 360, 361 (1998).

tarnished by unconsciously biased recall errors and false memories, then neither self monitoring nor jury deliberation are likely to significantly improve the problem.

Taken as a whole, research on human memory processes indicates that people systematically and unconsciously make stereotype-driven memory errors. It also indicates that these errors are likely to affect decision-making and that the nature of group deliberations is unlikely to help.

IV. FORGOTTEN EQUALITY: AN EMPIRICAL STUDY

In order to test whether unconscious racial bias manifests in the accuracy of juror memories, I employed an empirical study designed to examine whether people's recollections of legal stories are shaped by the race of the actors in the stories. The test revealed a variety of systematic and implicitly biased memory errors. This Section presents the methodology and results of the study.

Before conducting the study, I made the following hypotheses:

- (1) The accuracy of participants' memories in recalling legal stories would be affected by the race of the actors in the stories;
- (2) Participants would make memory errors in a manner harmful to African Americans and Hawaiians but helpful to Caucasians; and
- (3) Participants who exhibit more explicit bias would not necessarily be those who exhibit more implicit bias.

A. Methods

Participants. 153 undergraduate students in a psychology course at the University of Hawai'i participated in the study for course credit. The average age of the participants was 21.74 years. 71.2% of the participants were women.

Materials. Participants read two unrelated stories. One story described the circumstances surrounding a fistfight (a story I called *The Confrontation*¹⁹⁴), and the other detailed circumstances surrounding an employee who was terminated. After reading the stories, participants returned the stories to an experimenter and were given a questionnaire that contained a brief "distraction task." The distraction task was designed to take approximately 5-10 minutes, and was composed primarily of word completion questions and analytical

¹⁹⁴ The story name or even the existence of a story name, of course, was not part of information given to participants.

reasoning questions. The goal of the distraction task, as is common in memory recall studies, was to eliminate immediate memory effects (those that would only linger a few minutes). After completing the distraction task, participants were asked to answer questions about the stories they read. The stories were:

Story 1:

Brenda, a 28 year old Caucasian woman, worked as a “purchasing clerk” in the corporate offices of Big Burger Company, a small chain of hamburger joints. Brenda represented the second generation of her family to work at the offices of Big Burger Company. In fact, her father was once employee of the month at the company. Brenda’s job required that she work five days a week for eight hours a day. She was permitted one hour for lunch and two fifteen minute breaks. Another employee, Jimmy, shared a cubicle with Brenda. Jimmy, who worked for the public relations department as a marketing clerk, was occasionally sloppy with his work. Sometimes, when he was unable to complete the work assigned, Brenda helped him with his projects, which usually involved using the web to generate internet publicity and create new business. Jimmy and Brenda even occasionally dined together in Big Burger’s company cafeteria, where Jimmy always ate burgers and french fries.

While at her desk, in addition to conducting her duties, Brenda frequently surfed the web and wrote an internet “blog,” a journal that chronicled her daily life as a corporate purchasing clerk. Surfing the web for personal business was listed as a prohibited activity by the Big Burger Employee Handbook. Despite her web surfing, Brenda routinely worked longer hours than was required of her, and always finished her assigned work. In addition, her high quality work was documented by her boss, who consistently filed reports praising her hard work, intellect, and dedication. Brenda did, however, occasionally make long-distance phone calls from her work phone. She also occasionally let her friend, who worked in the shipping department, come and surf the web on her computer, so long as he did it during his fifteen minute breaks.

Brenda had an employment agreement with Big Burger Company that stated: “The Company shall not terminate the Employee without good cause, such as the commission of a felony or other morally questionable actions.” One day, Brenda posted a web blog that said: “Big Burgers should be called Blah Burgers. The burgers are so darn boring I wouldn’t eat them if I didn’t get them for free.” Even though her blog was anonymous, Jimmy saw her posting the message. The next day, the company announced that Brenda’s boss had been promoted to another office. Brenda’s new boss came and introduced himself. He told Brenda that his performance expectations were extremely high for her, and that he wouldn’t tolerate substandard work or any other insubordination. Brenda was fired five days later. At first she received no

explanation, but was later sent a letter stating that she failed to meet the “expected standards of employee conduct.”

Story 2:

William, a 23 year old Caucasian man, first encountered James, a 30 year old plumber, when they accidentally bumped elbows in a crowded bar. In the accident, James spilled beer onto William’s shirt and shorts. William was angry but the encounter ended when a bar employee took him by the arm and led him away. As William walked away with the bar employee, James smiled at William and chuckled. An hour after leaving the bar, William and a friend spotted James outside a local diner. They approached James slowly, and William said: “Why did you bump into me back there?” James said nothing and just looked down. William and his friend moved closer to James and William repeated his question. James said: “Hey listen ...it sounds like you had too much to drink...you don’t handle your liquor too well. Let it go.” William and his friend looked at each other and started laughing. William’s friend took a step towards James and said: “What if we won’t let it go?” When he took another step towards James, James moved forward, shoved him with both hands, and said: “Get out of my face.” Without hesitating, William then stepped forward and tried to shove James in the chest, but missed and hit him in the face. James fell back slightly. He then turned around, took a couple steps away from William, and appeared to reach for something in his pocket. William quickly pursued James from behind and punched him in the side of the head. James fell to the ground. William’s friend stepped forward and kicked James. William and his friend then walked away quickly and quietly.

After completing the distraction tasks, participants were asked to read and respond to sixteen recall questions about each of the stories. Participants were instructed to circle “yes” next to facts that were accurately reported from the story. If a fact did not accurately describe a fact from the story, or if the fact was not in the story at all, participants were instructed to circle “no”.¹⁹⁵

The yes/no questions were designed with testable purposes in mind. For the fight scenario, the sixteen questions presented were composed of six actor aggression questions, six mitigating circumstances questions, and four neutral questions. Aggressiveness questions described an aggressive action, such as: “William punched James from behind,” or “After James fell to the ground, William kicked him.” Mitigating behavior questions described facts that would potentially justify the actor’s action or lessen his legal or moral responsibility. Mitigating statements included: “After being punched, James took out an object from his pocket,” or “When William hit James in the face, he was really trying to push him rather than punch him.” Aggressiveness and mitigating

¹⁹⁵ These dependent variable measures are reproduced in their entirety in Appendix A.

behavior question indexes were split into two smaller indexes: one for accurate statements (to test for recall errors) and one for inaccurate statements (to test for false memories).

For the employment termination scenario, six questions were designed as actor favorable questions (facts relating to good job performance), six were designed as actor unfavorable questions (facts relating to bad job performance), and four were designed as actor neutral questions. Half of the questions accurately described facts from the story (thereby testing recall accuracy) and half did not (thereby testing false memories).

Because of the design of the questions, participant responses could be analyzed to determine not simply the accuracy of people's memories, but also whether errors in memory could systematically demonstrate that unconscious racial bias manifests in legal decision-making processes. For example, if participants who read about an African American employee more frequently falsely recalled that she had received mixed reviews from superiors, while participants who read about a Caucasian employee more frequently (correctly) recalled that she had received positive reviews, it would indicate that the race of the employee affected participants' memories in racially biased ways.

The primary independent variable was the race of the protagonist of the story.¹⁹⁶ For the employment story, participants read either about Brenda, a Caucasian woman, Keisha, an African American woman, or Ka'olu, a Hawaiian woman. For the fight story, participants read about either William, a Caucasian man, Tyronne, an African-American man, or Kawika, a Hawaiian man. Participants were randomly assigned to a race category.¹⁹⁷ Other than the names and races of the actors, the stories were identical.

To date, most empirical studies on race and law typically have used a Black-White study paradigm.¹⁹⁸ While this paradigm reflects both historical and present-day discrimination, it is an incomplete attempt to understand the complex nature of culture and discrimination. The increasing diversity within

¹⁹⁶Legal culture/Non-Legal Culture was another independent variable. Results for that variable, however, were not systematic and are not discussed in this Article. Future projects will continue to examine the effects of this variable. For a discussion of legal culture and its effects, see Levinson, *supra* note ____.

¹⁹⁷ Participants read about actors of the same race in both stories. For example, participants who read about Tyronne also read about Keisha. This was done in order to reduce the chances that participants would recognize what was being tested.

¹⁹⁸ See Sommers & Ellsworth, *supra* note ____ (reviewing a variety of mock jury studies). *But see, e.g.*, Harmon M. Hosch et al., *A Comparison of Anglo-American and Mexican-American Jurors' Judgments of Mothers Who Fail to Protect Their Children From Abuse*, 21 J. APPL. SOC. PSYCHOL. 1681 (1991).

the United States¹⁹⁹ requires attention to a broader scope of racial and cultural diversity in empirical legal studies.²⁰⁰ In addition to testing the traditional Black-White paradigm, the current study investigated how unconscious discrimination may manifest in memory processes relating to Hawaiians. Although the population of Hawaiians is not large outside of the state of Hawai'i, the recent history of the Hawaiian people is complex, meaningful, and can demonstrate the power of stereotypes in the legal context.²⁰¹ By conducting the empirical study in Hawai'i, the study could achieve three goals that would be difficult elsewhere: (1) the linkages between Hawaiians and implicit memory bias could be investigated in a culturally and legally relevant context; (2) African American bias and stereotypes could be examined in a community with a historically small African American population²⁰² (finding implicit biases against African Americans in Hawai'i would tend to illustrate the power of unconscious racism and its propagation through external sources such as media); and (3) biases and stereotypes could be tested among a diverse population, which would indicate that implicit biases are manifested in the legal setting by a broader (not just Caucasian) juror population.²⁰³

¹⁹⁹ See U.S. Census Bureau, US Interim Projections by Age Sex Race, and Hispanic Origin, <http://www.census.gov/ipc/www/usinterimproj/> (last visited Aug. 2006) (displaying population projections until 2050, based on numbers in 2000 census).

²⁰⁰ Studies outside of the law, particularly using the IAT, have incorporated a wide range of studies testing implicit biases that spans well beyond the Black-White paradigm. <https://implicit.harvard.edu> (last visited Aug. 2006) (offering IATs testing implicit attitudes regarding Arabs and Muslims, Native Americans, and Asian Americans, among others).

²⁰¹ For more on the challenges faced by the Hawaiian community in the legal system, see, e.g. NATIVE HAWAIIAN RIGHTS HANDBOOK (Melody Kapilialoha MacKenzie ed., 1991); Jon M. Van Dyke, *The Political Status of the Native Hawaiian People*, 17 YALE L. & POL'Y REV. 95, 102 & n. 41 (1998); Chris K. Iijima, *Race over Rice: Binary Analytical Boxes and a Twenty-First Century Endorsement of Nineteenth Century Imperialism in Rice v. Cayetano*, 53 RUTGERS L. REV. 91 (2000). Eric K. Yamamoto, *Rethinking Alliances: Agency, Responsibility and Interracial Justice*, 3 UCLA ASIAN PAC. AM. L.J. 33 (1995); Le'a Malia Kanehe, *Recent Development, The Akaka Bill: The Native Hawaiians' Race for Federal Recognition*, 23 U. HAW. L. REV. 857 (2001); Jennifer M.L. Chock, *One Hundred Years of Illegitimacy: International Legal Analysis of the Illegal Overthrow of the Hawaiian Monarchy, Hawai'i's Annexation, and Possible Reparations*, 17 U. HAW. L. REV. 463 (1995); Noelle M. Kahanu & Jon M. Van Dyke, *Native Hawaiian Entitlement to Sovereignty: An Overview*, 17 U. HAW. L. REV. 427 (1995).

²⁰² There is, however, a meaningful history of African Americans in Hawaii. See THEY FOLLOWED THE TRADE WINDS: AFRICAN AMERICANS IN HAWAII (Miles Jackson ed., 2004).

²⁰³ Many studies on race and juries have tested biases only among groups of Caucasian participants. Based on the implicit theories I have described, a diverse group of participants might be just as susceptible to memory biases. Due to its diverse population and university community, Hawai'i provides a natural place for such investigations. In the study I conducted, only 28 participants were Caucasian. This statistic would tend to indicate that results favoring Caucasians would not simply be driven by an in-group bias.²⁰³

After completing the recognition task, participants responded to the SDO scale.²⁰⁴ By testing participants on both the memory study and the SDO, I could examine the relationship, if any, between implicit memory bias and explicit racial preferences. The SDO scale used in this study was the 14-item SDO introduced by Pratto and her colleagues. It included the following measures, among others:²⁰⁵

- 1) *Some groups of people are simply not the equals of others.*
- 2) *This country would be better off if we cared less about how equal all people were.*
- 3) *It is important that we treat other countries as equals.*
- 4) *If people were treated more equally we would have fewer problems in this country.*

Participants were instructed to respond whether they had a positive or negative feeling about the items. For each item, they assigned a score. A score of “1” indicated very negative and a score of “7” indicated very positive.²⁰⁶

B. Results: Failed Memories and Racial Minorities

Participants misremembered certain legally relevant facts in a racially biased manner. The most telling results emerged from participant memories of *The Confrontation*. Systematic errors in recall affected participants’ memories of *The Confrontation* in a manner harmful to African Americans, and to a lesser extent, Hawaiians.

See Sommers & Ellsworth, *supra* note __ (pointing out that many studies of the influence of race on jury decision-making has only used Caucasian participants); Mitchell et al., *supra*, note __ (making a similar observation in the context of mock jury studies on racial bias). Instead, it indicates that (pro-Caucasian or anti African-American) unconscious racial biases can be harbored across a variety of races.

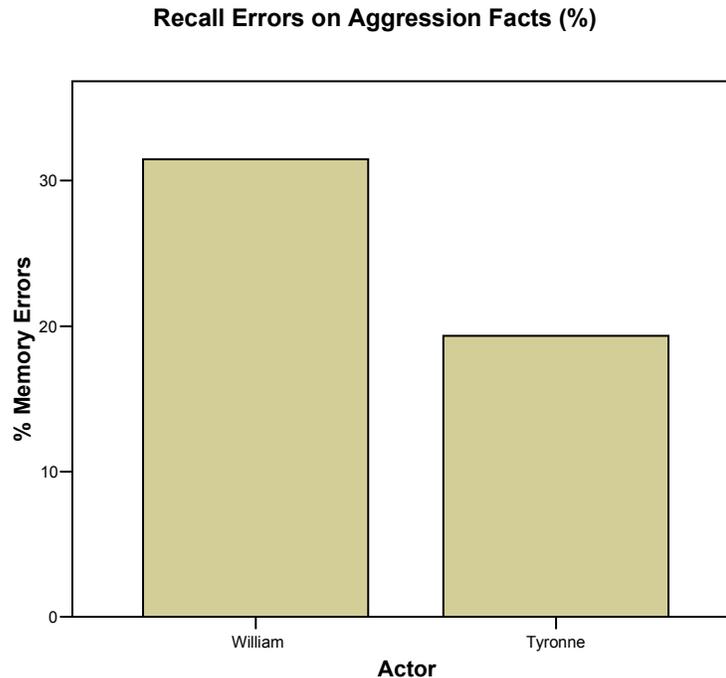
²⁰⁴ See *supra* note __ and accompanying text.

²⁰⁵ Here are the rest of the measures: 1) All humans should be treated equally. 2) Increased social equality. 3) Some people are just more worthy than others. 4) To get ahead in life, it is sometimes necessary to step on others. 5) In an ideal world, all nations would be equal. 6) Some people are just more deserving than others. 7) Equality. 8) It is not a problem if some people have more of a chance in life than others. 9) Some people are just inferior to others. 10) Increased economic equality.

²⁰⁶ Each number has its own label. A score of “2” means “negative.” A score of 3 means “slightly negative.” A score of 4 means “neither positive or negative.” A score of 5 means “slightly positive.” A score of 6 means “positive.” In order to convert the responses into a total score, half of the measures were reverse coded (e.g. scores of 7 are converted to scores of 1) and the responses were totaled.

1. Remembering and Misremembering Aggression in *The Confrontation*.

Participants had an easier time successfully recalling aggressive facts when the actor was African American compared to when the actor was Caucasian.²⁰⁷ For example, participants who read about Tyronne had a recall accuracy rate of 80.7%. That is, they failed to recall just 19.3% of facts relating to aggressive actions. Participants who read about Kawika failed to recall 29.0% of these facts, and participants who read about William failed to recall 31.5% of these facts. Thus, participants were more likely to remember Tyronne's aggressive behavior than William's aggressive behavior, even when the facts were quite simple and only 15 minutes or so had elapsed since reading the facts. See the Graph below. Two instances detailing results of aggressive fact recall also help illustrate this finding²⁰⁸:



Example 1 (Aggression- Failed Recall): "When they saw him outside a

²⁰⁷ This result, indicated by a MANOVA, was significant, $F(1, 145) = 4.16, p < .05$.

²⁰⁸ Chi-square analyses were performed on individual instances of fact recall. These tests compared two measures: (1) a race measure- comparing the three racial conditions against each other in one test, and (2) a major-minority measure- comparing the Caucasian condition to a combined group of the Hawaiian and African American conditions.

diner, William and his friend approached James.”²⁰⁹

This fact, which would tend to indicate that the fight was initiated by William, accurately reflected information from the story. Participants who read about Tyronne or Kawika were significantly more likely to correctly recall this information than participants who read about William.²¹⁰ While a resounding 92% of participants who read about Tyronne or Kawika correctly recalled this aggressive action (just an 8% error rate), only 77% who read about William recalled it (a 23% error rate).²¹¹

*Example 2 (Aggression- Failed Recall): “Tyronne punched James from behind.”*²¹²

This fact also accurately reflected information from the story. Participants who read about Tyronne were more likely to correctly recall this fact compared to participants who read about William or Kawika. Error rates near 50% indicate that participants in all groups had a difficult time remembering this fact. Yet the error rates nonetheless point towards a race memory bias. 65% and 57% of the participants who read about Kawika and William, respectively failed to recall this aggressive fact, while just 41% who read about Tyronne failed to recall it.²¹³

Responses on the index of combined false memory questions did not generate a main effect. However, a significant false memory effect did emerge on one of the three false memory measures. This example indicates that false memories can manifest in the legal setting in biased ways:

*Example 3 (Aggression- False Memory): “After James said ‘Let it go,’ Tyronne replied by saying ‘What if we won’t let it go?’”*²¹⁴

This statement inaccurately depicts information from the story and demonstrates the potential connection between false memories, source attribution errors, and implicit memory bias.²¹⁵ Participants reading about Tyronne or Kawika were more likely to exhibit false memories for this fact

²⁰⁹ Fight DV #14

²¹⁰ This finding was statistically significant, $p < .05$

²¹¹ Appendix A presents a chart of the results for all of the individual Examples presented in the Section.

²¹² Fight DV #10.

²¹³ This finding was marginally significant, $p = .055$.

²¹⁴ Fight DV #5.

²¹⁵ Recall from *The Confrontation* that it was the actor’s friend, not the actor himself, who made that aggressive statement.

than participants reading about William.²¹⁶ In fact, 70% of participants who read about Tyronne or Kawika mistakenly believed that the statement was accurate. For participants reading about William, 56% believed it was accurate. Thus, although the majority of participants mis-remembered this fact, participants reading about an African American or Hawaiian were significantly more likely to misremember it in a manner that harmed the defendant.

2. Remembering and Misremembering Mitigating Factors in *The Confrontation*

With respect to recall accuracy of mitigation questions, no significant index differences emerged based on race. However, for false memories of mitigating circumstances, an unexpected result emerged. Participants who read about Kawika were more likely to exhibit false memories of mitigating facts compared to participants reading about William or Tyronne.²¹⁷ Participants who read about Kawika exhibited false memories for 50% of the inaccurate mitigating facts. These facts, if true, would have tended to lessen Kawika's legal or moral responsibility for the incident. Participants who read about William and Tyronne exhibited false memories for fewer facts, 38% and 37% of these questions, respectively. These results indicate that the nature of unconscious biases in memory recall are complex and can be multidirectional (they can simultaneously penalize and mitigate). In recalling aggressive actions, participants' memories sometimes worked to penalize Kawika. But in recalling mitigating facts, participants' memories sometimes worked to help Kawika. An instance of a mitigating false memory question helps demonstrate:

*Example 4 (Mitigating- False Memory): James shoved Kawika.*²¹⁸

This mitigating statement inaccurately reflected the story and thus, if allegedly recalled by participants, would constitute a false memory. In the story, James shoved Kawika's friend, not Kawika.²¹⁹ If James had in fact shoved Kawika, it would tend to mitigate later aggressive actions taken by Kawika. Significant results emerged for this statement when comparing responses of participants reading about Kawika to those reading about William and Tyronne. A compelling 75% of participants who read about Kawika

²¹⁶ A chi-square indicated that this result was significant, $p < .05$ in comparing a combined measure of African American and Hawaiian condition participants with Caucasian condition participants. It was also marginally significant when comparing African Americans condition participants directly to Caucasian condition participants, $p = .062$.

²¹⁷ An ANOVA on the false memory mitigation index revealed significant effects, $F(2, 149) = 3.05, p = .05$.

²¹⁸ Fight DV #16.

²¹⁹ A false memory in this case would thus involve a source attribution error.

exhibited this false memory while those who read about Caucasians and African Americans exhibited 57% and 53% false memories, respectively.²²⁰

It is too early to confidently interpret this result. However, a possibility worth exploring relates to the complex and unique relationship between localism in the community²²¹ (among Hawaiian and non-Hawaiian people alike) and positive and negative stereotypes. Such a unique dynamic could simultaneously implicate negative stereotypes of aggression and more positive stereotypes regarding mitigation (understanding the historical and societal role and prevalence of the provocation of Hawaiians, for example).²²² As a result, the false memory result above could be explained if the provocation of Hawaiians was a societal stereotype—since stereotypes are linked to false memory generation. Future studies should investigate this unique source of false memory and the possibility of multidirectional stereotype activation in memory biases.

3. Instances of Failed Recall in Employment Story

Participants misremembered many more facts from the fight scenario than the employment scenario.²²³ Overall, participants exhibited a 71.2% recall accuracy rate for the fight scenario (with participants exhibiting a 34% false alarm rate) and a 94.0% recall accuracy rate for the employment scenario (with a 15.2% false alarm rate). While the stories read by participants were not exceedingly simple, they were significantly simpler than the stories typically heard by jurors, and somewhat simpler than other memory studies on juries or mock-juries.²²⁴ The results indicate that the employment scenario was perhaps too easy for participants to recall. Yet, it is unclear why *The Confrontation*, also a simple story, generated significant errors while the employment story did not. Despite the few significant results that were obtained in this study, the employment discrimination arena should not be discounted when discussing memory errors. Future tests should examine the employment domain in more realistic (and also perhaps more stereotype-consistent) situations. Researchers might also consider varying gender in addition to race, as gender has been shown to trigger stereotype consistent false memories in the employment

²²⁰ A chi-square indicated that results were significant for Hawaiians compared to Caucasians, $p < .05$, and Hawaiians compared to African Americans, $p < .05$.

²²¹ Eric K. Yamamoto, *The Significance of Local*, in SOCIAL PROCESSES IN HAWAII (Peter Manicus, ed. 1974).

²²² The existence of positive and negative stereotypes about a race should not be surprising and has been documented.

²²³ These results are not due to order effects. To eliminate order effects, participants were presented the scenarios in both orders.

²²⁴ Compare the case fact data presented in the memory study conducted by Pritchard & Keenan, *supra* note __. In that study, participants viewed a thirty-five minute video of court testimony and were quizzed for recall. The test in this study was substantially easier.

context.²²⁵

Within the employment story, though the indexes did not reveal significant effects, there was one interesting and significant false memory that emerged:

*Example 5 (Competence- False Memory): "Brenda was named Employee of the Month."*²²⁶

This statement was inaccurate. Participants who had false memories of this statement erroneously believed that Brenda achieved this honor. In the story, it was Brenda's father, not Brenda who earned this award. Once again, errors of this type can be attributed to source misattribution. The results indicated that participants who read about Brenda, compared to those who read about Keisha and Ka'olu, were more likely to falsely remember this fact.²²⁷ Participants who read about Brenda falsely remembered it 17% of the time while participants who read about Keisha and Ka'olu remembered it 10% and 2%, respectively.

4. Implicit Memory Bias and Explicit Racism

I next measured whether there was a relationship between explicit racial preferences (as measured by the SDO scale) and implicit memory recall. For memory recall indexes (such as the aggression recall index for *The Confrontation*) and for most individual memory recall measures, there was no significant relationship between memory recall and explicit racial preferences. This finding indicates that participants who manifested more implicit memory bias were not more likely to be explicitly biased. A few individual instances of memory recall in the African American and Hawaiian race conditions, however, did indicate a relationship (both correlative and predictive) in the opposite direction. That is, in a few instances people with lower SDO scores (indicating less explicit racism) were surprisingly more likely to demonstrate more racially biased recall than people with higher SDO scores.

I tested the correlation between the memory measures (both indexes and individual questions) and total SDO scores for participants in each race condition, and followed these correlations up with linear regression analyses. For the memory index responses and most memory questions, no significant results emerged. For a few individual memory measures, however, significant correlations and predictive relationships emerged. The following examples illustrate this unexpected effect.

²²⁵ See Lenton, *supra* note __; Macrae, *supra* note __.

²²⁶ Employment DV #2.

²²⁷ A chi-square revealed that this effect was significant, measuring all three race conditions against each other, $p < .05$.

Significant correlations emerged in the African American race condition for SDO scores and the following memory measures: (1) *After James fell to the ground, Tyronne kicked him;* and (2) *When Tyronne hit James in the face, he was really trying to push him rather than punch him.* The first memory measure above was negatively correlated to SDO score and the second was positively correlated to SDO score.²²⁸ These correlations indicated that participants who explicitly favored racial equality were (1) more likely to have false memories that Tyronne kicked James and (2) less likely to accurately recall that Tyronne was trying to push James rather than punch him. Linear regression analyses were also significant for these measures, indicating that SDO scores served as predictors for these two memory measures in the same surprising direction. These two examples provide counterintuitive results, indicating that people who explicitly favor more social equality sometimes were more likely to recall facts in biased ways than those who explicitly favored less social equality.²²⁹

In the Hawaiian condition, a significant correlation emerged between memory recall and SDO score for the memory measure *Ka'olu used her phone to make long distance calls.* This memory measure was significantly correlated with overall SDO score in the negative direction.²³⁰ This correlation means that the more likely participants were to favor equality (generating a lower SDO score), the more likely they were to accurately remember this fact about Ka'olu. A linear regression analysis was also significant for this memory measure, indicating that SDO score served as a negative predictor of this accurate memory recall response.²³¹

Taken together, the correlation and regression results indicate that explicit racial preferences and implicit recall bias usually were not significantly related. However, in the African American and Hawaiian conditions, there were individual instances where lower explicit bias actually predicted greater memory bias. In the Caucasian condition, there was one instance where higher explicit bias predicted greater memory bias.²³²

²²⁸ Two-tailed Pearson correlations were significant for both of these memory measures, $p < .05$.

²²⁹ It should be noted that the relationship between SDO scores and implicit measures are relative. That is, people who favor "less social equality" did not necessarily disapprove of social equality and were not necessarily explicitly racist. Instead, relative to other participants in the study, those who favored less equality were more likely to respond to certain questions in the manner reported.

²³⁰ A two-tailed Pearson correlation was significant for this measure, $p < .05$.

²³¹ The linear regression analysis was significant, $p < .05$. A regression also indicated that a neutral memory question ("Ka'olu worked as a marketing clerk") was also predicted by SDO by regression in the negative direction, $t = -2.39$, $p < .05$.

²³² In the Caucasian condition, a two-tiered Pearson correlation coefficient was significant (in the positive direction) between memory recall and SDO score for the

5. Limitations of the Study

The results of the study complement existing discourse on implicit biases and memory errors and provide support for the theory that implicit racial bias affects case fact memories within the legal process. Nonetheless, this study should only begin the empirical examination of implicit racial biases in case fact memories. The methodology used in the study imperfectly and only loosely matched true legal processes. For example, the study used stories that resembled some aspects of real life cases, but did not use real cases. The study also tested university study participants, not real jurors (or judges). Rather than participating in a trial, participants simply filled out a multi-part survey. For these reasons and others,²³³ this empirical study alone should not be considered conclusive proof that the results generalize to the legal setting.²³⁴ However, taken in the context of existing research on implicit biases and memory errors, the study offers significant support for the claim and should generate real life concerns about racial justice in legal processes.

V. IMPLICIT BIASES, CULTURAL RESPONSIBILITY AND DEBIASING

measure *William and his friend hit James one time each*. This measure indicates opposite results than those in the African American and Hawaiian conditions. The more likely participants were to explicitly favor racial and social hierarchy (generating a higher SDO score) the more likely they were to have false memories of this (mitigating) fact favoring William (recall from the story that William actually hit James twice). A linear regression analysis was also significant for this memory measure, indicating that SDO score served as a predictor of this false memory response. The linear regression analysis was significant, $t=3.11$, $p<.05$. Thus, unlike the instances in the African American and Hawaiian conditions indicating lower explicit racial preferences sometimes served as a predictor of implicit memory bias, this instance indicated that higher explicit racial preference predicted implicit memory bias.

²³³ Another example of the disconnect between the study and real legal processes is the ease and simplicity of the stories that were tested. A real case would involve vastly greater amounts of information. The judicial process thus requires a much more significant cognitive effort by jurors to encode and recall information. Recall, however, that studies on cognitive depletion indicate that the greater the attention depletion, the greater the likelihood of stereotype consistent false memories. This memory limitation raises the issue of whether memory biases in real cases might be worse than the empirical study illustrates. See *supra* note __ and accompanying text.

²³⁴ Most studies fail in one way or another to replicate the legal setting. One particularly impressive effort to replicate is that of Samuel Sommers. Samuel R. Sommers, *On Racial Diversity and Group Decision-Making: Informational and Motivational Effects of Racial Composition on Jury Deliberations*, 90 J. PERSONALITY & SOC. PSYCHOL. 597 (2006). Sommers gained access to Washtenaw county (Michigan) courts, where jurors were given an option to participate in his study or a real case. See *infra* note __ and accompanying text for a discussion of this study and its implications.

The results of the empirical study, combined with existing research on implicit biases and memory, lead to the conclusion that implicit memory biases almost certainly operate in legal decision-making. In light of previous legal discourse on cognitive errors, one might expect the discussion now to turn towards a science-driven “debiasing” proposal. A debiasing methodology approaches implicit memory bias as an undesirable cognitive error that can perhaps be reversed through scientific experimentation. Before proceeding with such an analysis, however, pause is necessitated by the fact that the cause of implicit memory bias is not a scientific error or quirk but instead is a manifestation of social and cultural factors that generate ingrained and automatic racial preferences.

The challenge of addressing unconscious memory bias in legal decision-making is twofold. First, it requires gaining a deeper understanding of implicit racial bias by examining the relationship between cultural forces and cognitive processes.²³⁵ This examination shows that permanent elimination of implicit memory bias can only occur through a sustained process of cultural acceptance and change. Second, it requires embracing scientific methods to search for ways to temporarily moderate or eliminate the detrimental effects of implicit racism.²³⁶ Though science will not be able to solve the problem of implicit racial bias without cultural change, it has already helped identify the causal factors behind implicit biases as well as provided substantial clues about temporary reduction strategies.²³⁷ The need for continued scientific exploration is similarly heightened by a paradoxical legal context: the legal system simultaneously embraces a mission of social justice while employing an implicitly biased decision-making process that hinders justice from being done. A multi-faceted response combining cultural change and scientific achievement is thus needed.

A. Cognitive Biases, Cultural Responsibility, and Social Justice

Who or what is responsible for implicit racial biases? Surprisingly few of the legal projects on implicit racial bias examine the causes of the biases or discuss the probable link between historical and cultural discrimination and

²³⁵ The connection between culture and cognitive biases similarly has been overlooked in behavioral law and economics scholarship. *See* Levinson & Peng, *supra* note __.

²³⁶ Kang and Banaji, for example, demonstrated why cultural change and science are not mutually exclusive. They suggested that using “debiasing agents” might over time help reduce stereotypes by changing the way people think about social categories. *See supra* note __ and accompanying text. This link between cultural change and science exemplifies the potential power of embracing the “fair measures” model Kang and Banaji suggest.

²³⁷ Because cultural change will happen slowly (and may not happen at all without a sustained effort), the scientific endeavor will continue to be at the forefront of implicit bias discourse.

implicit racial biases. Instead, many simply address the compelling evidence of implicit bias by employing a “debiasing” framework. This style of problem reduction approach is a critical component of implicit bias discussions, but should not be both the beginning and end of discourse. Furthermore, the difficulty that has been encountered in eliminating implicit racial biases should serve as a reminder that these automatic and unconscious biases are not random and meaningless “noise,” but powerful and meaningful connections between our life experiences, society and cognitive processes.

Although legal scholars have frequently overlooked the social and cultural links to implicit biases, psychologists often discuss the causes of implicit biases and stereotypes. According to Laurie Rudman, implicit biases are caused by a variety of factors, including culture.²³⁸ “System Justification Theory,” for example, posits that people sometimes act implicitly and automatically to maintain a structure of social order.²³⁹ This implicit need for social order, which often conflicts with a person’s explicit preferences, could be one direct link between a culture of racial subordination and implicit racial bias. In a study investigating System Justification Theory, Rudman and her colleagues tested the link between cultural preferences and implicit (versus explicit) group favoritism.²⁴⁰ They found that members of less favored minority groups (such as overweight people and elderly people) implicitly preferred more favored minority groups (such as Asians and Jews) to their own groups, but that these preferences did not operate explicitly.²⁴¹ The results indicated that the lower the cultural status of the group, the more likely that members of that group would demonstrate “automatic ingroup devaluation.”²⁴² This research suggests that although people may act or speak out to (explicitly) reject social ordering of preferred groups, they are implicitly motivated to maintain social and cultural hierarchies. In the legal setting, System Justification Theory explains how an implicit memory bias might act to similarly and unconsciously subordinate minorities. As the empirical study in Section IV demonstrated, a diverse participant population implicitly disfavored African Americans even

²³⁸ Rudman, *supra* note __ at 136 (identifying experiences, affect, cognitive balance, and the self as other potential causal links).

²³⁹ See John T. Jost et al., *A Decade of System Justification Theory: Accumulated Evidence of Conscious and Unconscious Bolstering of the Status Quo*, 6 POL. PSYCHOL. 881 (2004). System Justification Theory evidence shows, for example, that many members of minority groups harbor negative stereotypes about their own groups. For a new discussion of system justification theory in law and social justice, see Gary Blasi & John T. Jost, *System Justification Theory and Research: Implications for Legal Advocacy and Social Justice* (forthcoming CAL. L. REV. 2006).

²⁴⁰ Laurie A. Rudman et al., *Minority Members' Implicit Attitudes: Automatic Ingroup Bias As A Function Of Group Status*, 20 SOC. COGNITION 294 (2002).

²⁴¹ *Id.*

²⁴² *Id.* at __.

though they frequently explicitly favored equality.²⁴³

The connection between implicit biases and culture is not surprising. After all, it is quite intuitive that our biases reflect societal stereotypes. Research on stereotype formation and maintenance confirms that stereotypes, a key ingredient in implicit memory bias, are instilled at an early age and come from cultural and societal beliefs.²⁴⁴ According to Antony Page, psychologists have found that stereotypes arise when a person is as young as three years old and are usually learned from parents, peers, and the media.²⁴⁵ As people grow older, their stereotypes become unconscious and remain mostly unchanged even as they develop non-prejudiced explicit views.²⁴⁶ Howard Ehrlich stated, “stereotypes about ethnic groups appear as a part of social heritage of society...[n]o person can grow up in a society without having learned the stereotypes assigned to the major ethnic groups.”²⁴⁷ This research illustrates the cultural grip that negative stereotypes have on our society and underscores the importance both of a process of cultural change and early interventional approaches to change harmful stereotypes.

Recognizing the need to act against implicit bias on a societal as well as scientific level, Rudman presented several suggestions for change that are grounded both in theory and in practice.²⁴⁸ These suggestions include elements of education, policy advocacy, intergroup contact, and social inclusiveness. Legal scholars should take note that these solutions are neither entirely empirical nor are they primarily debiasing-focused. Instead, they are diverse in methodologies and reflect a broader understanding of implicit biases as a societal problem. Specifically, Rudman called for: informing people about implicit biases, followed by “efforts to retain and expand policies that serve to override them, including affirmation action;”²⁴⁹ providing people the

²⁴³ See *supra* Section IV.

²⁴⁴ Recall that stereotype-consistency is a major theme in false memory generation. See *supra* note __ and accompanying text.

²⁴⁵ *Id.* at 203, citing Frances E. Aboud & Maria Amato, *Developmental and Socialization Influences on Intergroup Bias*, in BLACKWELL HANDBOOK OF SOCIAL PSYCHOLOGY: INTERGROUP PROCESSES 65, 73-76 (Rupert Brown & Samuel L. Gaertner eds., 2001).

²⁴⁶ *Id.* at 204, (citing Timothy D. Wilson et al., *A Model of Dual Attitudes*, 107 PSYCHOL. REV. 101, 103-04 (2000)).

²⁴⁷ Page, *supra* note __ at 203, quoting HOWARD J. EHRLICH, THE SOCIAL PSYCHOLOGY OF PREJUDICE 35 (1973).

²⁴⁸ Rudman, *supra* note __ at 138.

²⁴⁹ *Id.* at 138 (pointing out the overly optimistic nature of Affirmative Action’s 25 year “shelf life” under *Grutter v. Bollinger*, 539 U.S. 306 (2003)). These suggestions are supported in part by Kang and Banaji’s “fair measures” proposal, which uses a variety of evidence on implicit bias to propose a multi-faceted framework for progress. See Kang & Banaji, *supra* note __.

opportunity to be more emotionally comfortable with out group members²⁵⁰; and recognizing the cultural influences on the self while striving for a more inclusive society. These proposed solutions provide legally relevant pathways that can be implemented to eventually reduce the harmful effects of implicit memory bias. In fact, scholars have already begun embracing each of these suggestions. Kang and Banaji have argued that “fair measures” must be taken specifically to combat the societal harms of implicit biases.²⁵¹ Scholars of intergroup contact have confirmed that sharing experiences with outgroup members truly works to reduce biases.²⁵² And legal commentators beginning with Charles Lawrence have recognized the importance of recognizing culture’s influences on the self within a broader legal and societal context.²⁵³ We must now coordinate these efforts for change.

Ignoring cultural responsibility for implicit racial biases is not simply a failure to connect the root of the bias to the bias itself or a failure to develop an accurate model of legal decision-making. Instead, ignoring the cultural foundations of implicit bias risks minimizing the responsibility of the legal system to deal with a society that continues to exhibit systematically racial preferences. A debiasing framework, acting alone and without cultural context, thus risks ignoring the social justice mission of the law.²⁵⁴ When Charles Lawrence first wrote about unconscious racism, he was not simply telling us that people act in biased ways but they do not always realize it. He was telling us that people are racist and that our culture is responsible.²⁵⁵ Thus, as we digest yet again the newest piece of evidence that implicit bias manifests in the legal system, we must understand that the deviation from rational decision-making is not simply a cognitive glitch, but a meaningful cultural statement that reflects the way we unknowingly carry our society’s weaknesses with us at all times, even when encoding and recalling the simplest of facts. Dealing with implicit racial biases, then, requires more than a scientific effort at debiasing through cues, primes, or deception. It requires a recognition that their very existence represents a reflection of the past and current state of American

²⁵⁰ See the discussion of intergroup contact theory, *infra* note ___ and accompanying text.

²⁵¹ See Kang & Banaji, *supra* note ___.

²⁵² See Thomas F. Pettigrew & Linda L. Tropp, *A Meta-Analytic Test of Intergroup Contact Theory*, 90 J. PERSONALITY & SOC. PSYCHOL. 751, 766 (2006).

²⁵³ See Lawrence, *supra* note ___.

²⁵⁴ More detailed discussions of racial history, the American culture of discrimination, and its links to equal protection admittedly occur outside the mostly scientific scope of this paper. Nonetheless, each of these components must be discussed in the context of unconscious racism. See generally, Lawrence, *supra* note ___. See also Yamamoto, *supra* note ___ (focusing on cultural responsibility in race relations). “Debiasing,” by its nature is not always culturally ignorant. Kang and Banaji’s model, for example, uses debiasing concepts in order to effectuate slow cultural change. See Kang and Banaji, *supra* note ___.

²⁵⁵ *Id.* at ___.

culture. And this recognition, in turn, calls for steps that will facilitate cultural change.

B. Temporary Debiasing of Stereotypes and Memory Errors

Although they do not always embrace the connection between cultural responsibility, social justice and implicit cognitions, debiasing efforts have significant practical potential for their ability to reduce or temporarily eliminate implicit memory biases.²⁵⁶ A debiasing approach to the problem of implicit memory bias can involve two interrelated tactics— reducing the power, frequency or pervasiveness of implicit racial biases and improving overall memory accuracy. Both types of temporary measures give us clues as to how taking specific procedural actions within the legal system can reduce the harmful effects of implicit memory bias.

1. Temporarily Reducing Implicit Biases.

A significant amount of recent research has focused on whether implicit stereotypes can be temporarily eliminated or moderated.²⁵⁷ These efforts have achieved mixed levels of success, and indicate that exposure to diversity or viewing minority exemplars, for example, can sometimes temporarily reduce people’s implicit biases.²⁵⁸ None of this research has directly tested how implicit memory bias might be reduced, nor has it been applied to jury decision-making.²⁵⁹ Nevertheless, studies indicate that confronting jurors with their implicit biases, striving for more diverse juries, and facilitating a more counter-stereotypic academy of lawyers and judges could help reduce the occurrence of implicit memory bias. It must be noted, however, that before any concrete suggestions should be implemented, more research must be conducted to confirm their benefits in legal decision-making.

More Counter-Stereotypic Attorneys and Judges. Some studies indicate that exposing jurors to minority exemplars such as attorneys and judges might help reduce implicit memory bias. A study by Dasgupta and Greenwald found that exposure to admired minority exemplars can decrease implicit preferences.²⁶⁰ In that study, after taking a Black-White IAT, participants were exposed to pictures of “famous and admired” African Americans, such as Colin Powell, Will Smith, and Eddie Murphy, and “infamous and disliked”

²⁵⁶ There are also theoretical implications. Debiasing studies may offer clues as to why the pervasive effects of implicit biases continue to prosper in our automatic and unconscious cognitive processes.

²⁵⁷ Some of these studies have been reviewed in other contexts. *See, e.g.*, Kang, *supra* note __, Page, *supra* note __; Kang & Banaji, *supra* note __.

²⁵⁸ Page, *supra* note __ at 237, citing Dasgupta & Greenwald, *supra* note __.

²⁵⁹ *But see* Sommers, *infra* note __ and accompanying text.

²⁶⁰ Dasgupta & Greenwald, *supra* note __.

Caucasian Americans, such as Jeffrey Dahmer, Howard Stern, and John Gotti.²⁶¹ After exposure to these pictures (which were presented under the guise of being a test of famous person recognition), participants immediately retook an IAT, and took yet another IAT after twenty-four hours. Results indicated that the exposure to the African American exemplars and disliked Caucasians reduced (but did not eliminate) automatic pro-White implicit bias, and that bias reduction continued for at least twenty-four hours.²⁶²

A more recent study by Nilanjana Dasgupta and Shaki Asgari harnessed this knowledge to test how exemplary leaders can affect women's automatic biases about their own in-group.²⁶³ The study indicated that exposure to women in leadership positions can lead to a reduction of in-group implicit biases among women.²⁶⁴ One important contribution of Dasgupta and Asgari's study was that it examined the role of exemplars in naturally occurring leadership roles (such as college students' exposure to female professors). Their results indicate that women who "inhabit local environments in which women frequently occupy counter-stereotypic leadership roles" can undermine automatic stereotypes.²⁶⁵ Results such as these, which illustrate the debiasing potential of exemplars, prompted Kang and Banaji to argue for "fair measures" in hiring more counter-stereotypical employees.²⁶⁶ Implementing a fair measures paradigm in the legal profession (which would include a systematic effort to increase counter-stereotypic law students, lawyers and judges) could

²⁶¹ *Id.* at 811.

²⁶² *Id.* at __. These results were reported in contrast to participants in a control condition (who saw no images) and in a pro-White exemplar condition. The researchers also found similar effects in reducing implicit bias related to elderly. Interestingly, though a reduction in implicit attitudes was found, explicit racial preferences were not significantly altered.

²⁶³ Nilanjana Dasgupta & Shaki Asgari, *Seeing is Believing: Exposure To Counterstereotypic Women Leaders And Its Effect On The Malleability of Automatic Gender Stereotyping*, 40 J. EXPERIMENTAL SOC. PSYCHOL. 642 (2004).

²⁶⁴ *Id.* at 654. Other studies have investigated gender stereotype reduction using mental imagery. Unlike real-life exposure to counter-stereotypic (human) exemplars as investigated by Dasgupta and Asgari, Irene Blair and her colleagues tested how simply imagining and then describing a "strong woman" (for example) might reduce implicit bias as measured on the IAT. Irene V. Blair et al., *Imagining Stereotypes Away: The Moderation of Implicit Stereotypes Through Mental Imagery*, 81 J. PERSONALITY & SOC. PSYCHOL. 828 (2001). Their results were significant, indicating that mentally accessing a counter-stereotype can help reduce implicit bias. Recent research also indicates that appealing to a person's egalitarian beliefs can help moderate discriminatory behavior. Nalanjana Dasgupta & Luis M. Rivera, *From Automatic Antigay Prejudice to Behavior: The Moderating Role of Conscious Beliefs About Gender and Behavioral Control*, 91 J. PERSONALITY & SOC. PSYCHOL. 268 (2006)(testing the relationship between egalitarian beliefs and anti-gay behaviors).

²⁶⁵ Dasgupta & Asgari, *supra* note __.

²⁶⁶ Kang & Banaji, *supra* note __ at __.

similarly and eventually generate debiasing benefits in jury decision-making.²⁶⁷

Confronting Jurors with Biases. New research indicates that explicitly confronting people with their biases may be an effective tool in decreasing stereotyped responses. A study by Alexander Czopp and his colleagues found that even though confrontations can create hostility towards a confronter, they can (at least temporarily) also reduce stereotypes.²⁶⁸ In the study, participants were asked to participate in an on-line chat.²⁶⁹ During this chat, participants were asked to give their impressions about pictures and statements. These pictures and statements were designed deliberately so that they would invoke at least some racial stereotypes, thus assuring that participant responses would be racially stereotype-consistent enough to allow for confrontation.²⁷⁰ After the participants gave such stereotype-consistent responses, a collaborator (who was posing as another participant in the on-line chat) confronted them about their potentially racist responses.²⁷¹ Post-confrontation, participants were given a confidential stereotype test (in which participants were alone-- no collaborator was present to confront them). The researchers found that post-confrontation participant responses displayed significantly fewer stereotypes (compared to before being confronted). One potential practical implication of this line of research involves using racial stereotype measures on pre-trial jury questionnaires, and non-threateningly confronting jurors with their biases during *voir dire* or jury instructions.²⁷²

More Diverse Juries. Culture and diversity have been linked to the reduction of implicit biases. These studies indicate that racially diverse juries, for example, may make fewer cognitive errors than homogeneous jurors, and that learning about or experiencing diversity and multicultural ideologies in general can reduce implicit bias. In a study of legal decision-making

²⁶⁷ It is hard to predict, however, how positive effects of an African-American attorney or judge, for example, would interact with the negative effects of a stereotype-consistent African American criminal defendant.

²⁶⁸ Alexander M. Czopp et al., *Standing Up for a Change: Reducing Bias Through Interpersonal Confrontation*, 90 J. PERSONALITY & SOC. PSYCHOL. 784 (2006).

²⁶⁹ *Id.*

²⁷⁰ *Id.*

²⁷¹ *Id.* at ___. For example, one resembled the following: “but maybe it would be good to think about Blacks in other ways that are a little more fair? it just seems that a lot of times Blacks don't get equal treatment in our society. you know what i mean?” The confrontations were successful using low level threats (such as the one quoted) and high level threats (which involved mentioning that the participant's responses sounded racist).

²⁷² Debiasing judges through confrontations would require other measures. It is important to note that there are no indicators yet that such a juror confrontation would reduce implicit bias in the legal setting. Before implementing any juror confrontation scheme, the specific design should be tested empirically.

processes, Samuel Sommers recorded and evaluated mock jury deliberations.²⁷³ Some mock-juries included only Caucasians and others included both Caucasians and African-Americans.²⁷⁴ Sommers found that racially heterogeneous mock juries cited more facts from the case, made fewer errors when discussing facts (and when they did make errors, were more likely to correct them²⁷⁵), and were more open to discussing racism than homogenous Caucasian juries.²⁷⁶ Although Sommers did not test implicit bias reduction, the results hold promise that diverse juries might better overcome implicit memory biases than homogenous juries. In practice, however, calling for more diverse juries is controversial. Courts are hesitant to apply diversity rationales to petit juries, and will generally look only at juror representation across a larger community.²⁷⁷ However, if other measures are less effective in overcoming implicit memory bias, then striving for (or even requiring) heterogeneous juries might be warranted, particularly when legal participants come from stereotyped groups.

Juror Diversity Training. Implementing diversity or multiculturalism training for jurors might similarly help reduce implicating memory biases. A study by Jennifer Richeson and Richard Nussbaum found that exposing participants to a multicultural viewpoint, compared to a “color-blind” viewpoint, resulted in lesser implicit bias on the Black-White IAT.²⁷⁸ In that study, participants learned about either the virtues of multiculturalism (celebrating differences across groups) or color-blindness (ignoring differences across groups).²⁷⁹ This simple introduction to the two ideologies was enough to affect IAT outcome.²⁸⁰ Those who learned about multiculturalism reduced their implicit biases and displayed significantly less implicit bias than those who learned about color-blindness.²⁸¹

²⁷³ Samuel R. Sommers, *supra* note ____.

²⁷⁴ *Id.*

²⁷⁵ Recall that in Prichard and Keenan’s study, jury deliberation barely helped correct individual memory errors. While Sommers did not employ a methodology designed to test the statistical significance of memory error correction generally, his study raises the possibility that diverse juries (which were not reported and presumably not tested by Prichard and Keenan) might have a unique ability to correct more memory errors than homogeneous juries. Such a theory should be tested empirically. See Prichard & Keenan, *supra* note ____; Sommers, *supra* note ____.

²⁷⁶ *Id.* at 22-30.

²⁷⁷ Nancy S. Marder, *Juries, Justice & Multiculturalism*, 75 S. CAL. L. REV. 659, 668 (2002) (citing Taylor v. Louisiana, 419 U.S. 522, 538 (1975)).

²⁷⁸ Jennifer A. Richeson & Richard A. Nussbaum, *The Impact of Multiculturalism Versus Color-Blindness on Racial Bias*, 40 J. EXPERIMENTAL SOC. PSYCHOL. 417 (2004).

²⁷⁹ *Id.* at _____. The learning process included reading about multiculturalism or color-blindness as well as writing about it.

²⁸⁰ *Id.* at 420.

²⁸¹ *Id.*

A study by Rudman and her colleagues tested the effects of a diversity education program and found similar results to Richeson and Nussbaum, indicating that learning the values of diversity can at least temporarily reduce implicit stereotypes.²⁸² In that study, participants voluntarily attended a diversity and conflict seminar, during which they learned about inter-group conflict, engaged in discussions, and kept a journal.²⁸³ Participants were given IAT tests both prior to and after the semester. Results indicated that students in the diversity and conflict seminar reduced both their implicit (as measured by the IAT) and explicit racial biases, while those in the control group (who received no diversity training) did not.²⁸⁴ These studies indicate that diversity or multiculturalism training could potentially help juries reduce implicit racial biases. Yet implementing a mandatory diversity course, for example, could risk backfiring if jurors became angry about being required to participate (an emotion that could be common considering that people are often unaware of their implicit biases). Thus, before implementing training, further research should be conducted to test what types of training programs would be tolerated by jurors without backlash.²⁸⁵ One possibility is that diversity training would perhaps generate less resistance by jurors if it were a component of a larger juror education or training program.

²⁸² Laurie A. Rudman et al., *Unlearning Automatic Biases: The Malleability of Implicit Prejudice and Stereotypes*, 81 J. PERSONALITY & SOC. PSYCHOL. 856 (2001). The researchers did point to evidence, however, that forced compliance with “pro-Black” requests can result in anger and backlash. *Id.* at 857, (citing E. A. Plant & Patricia G. Devine, *Responses to Other Imposed Pro-Black Pressure: Acceptance or Backlash?* 37 J. EXPERIMENTAL SOC. PSYCHOL. 486 (2001)).

²⁸³ *Id.* at 858. Other participants, who were in the control group, were enrolled in a research methods course. It is interesting to note that (in the first experiment conducted) participants in the training group were taught by an African American professor while participants in the control group were taught by a Caucasian professor. Thus, effects generated between the two groups might have emerged from effects similar to those demonstrated by Dasgupta & Asgari, *supra* note __. The experimenters corrected this potential confound in experiment 2 by having the same African-American professor teach the control group’s course. Results in experiment 2 indicated the same bias-reduction results as in experiment 1—for the experimental group but not for the control group. *Id.* at 863-864.

²⁸⁴ *Id.* at 860-861.

²⁸⁵ Jury training has been suggested in other contexts. *See, e.g.* James J. Gobert, *In Search of the Impartial Jury*, 79 J. CRIM. L. & CRIMINOLOGY 269, 326 (1988) (suggesting implement juror “impartiality training”); Stephen E. Fienberg & Mark J. Schervish, *The Relevance of Bayesian Inference for the Presentation of Statistical Evidence and Legal Decisionmaking*, 66 B.U.L. REV. 771 (1986); Gregory Mitchell, *Why Law and Economics’ Perfect Rationality Should Not Be Traded for Behavioral Law and Economics’ Equal Incompetence*, 91 GEO. L.J. 67, 133 (2002) (discussing training effectiveness generally and applying it to judges).

One theory behind diversity training and multiculturalism, that increasing an understanding of out-group members will lead to reduction in prejudice (in the language of intergroup contact theory-- “familiarity breeds liking”²⁸⁶), is supported by a large volume of work.²⁸⁷ This work reaffirms that exposure to people across groups acts to reduce biases, particularly under optimal conditions. A meta-analysis by Thomas Pettigrew and Linda Tropp demonstrated that across hundreds of studies, intergroup contact does in fact lead to prejudice reduction.²⁸⁸ The researchers found that intergroup contact that comported with Allport’s 1954 formulation of “optimal contact” displayed the most prejudice reduction. These optimal contact conditions include: equal status; common goals; intergroup cooperation; and the support of authority, such as the law.²⁸⁹ Interestingly, Allport’s optimal conditions appear to describe the mandate, function, and process of juries. Thus, the possibility is raised not only that diverse juries may display less prejudice (as investigated by Sommers²⁹⁰), but also that the experience of being on a diverse jury itself could lead to less future prejudice.²⁹¹

2. Improving Memory Accuracy and Reducing False Memories.

Two different styles of memory improvement efforts might help mitigate the effects of implicit memory bias. First, research on reducing memory errors offers clues about how jury instructions or other debiasing measures might help mitigate memory inaccuracies. These projects often suggest that implementing “late stage correction” strategies can reduce some memory errors, although the reduction of stereotype related memory errors has proved particularly challenging. Second, practical solutions such as juror note-taking and question-asking can help improve memory retention in the legal process. Though these strategies have not been investigated with regard to racial memory biases, they offer hope that general memory improvement will help reduce racially biased errors.

In light of the compelling evidence linking false memory generation to stereotypes, researchers have begun exploring ways to try to moderate the potentially harmful effects of stereotype-consistent false memories. These efforts have yielded mixed success and serve as a reminder that trying to

²⁸⁶ Pettigrew & Tropp, *supra* note __ at 766.

²⁸⁷ *Id.*

²⁸⁸ *Id.*

²⁸⁹ *Id.* at 752, citing GORDON ALLPORT, THE NATURE OF PREJUDICE (1954). The meta-analysis indicated that these conditions are best viewed as a “bundle” (meaning that they are most effective if all conditions are met). The researchers do note, however, that the institutional support criterion might be especially important. *Id.* at 766.

²⁹⁰ Sommers, *supra* note __.

²⁹¹ *See Id.* at 768 (noting that although there are some indicators that future prejudice is reduced by intergroup contact, more longitudinal studies are needed).

reduce the harmful effects of stereotypes is a difficult process. Keith Payne and his colleagues examined whether instructing participants to respond to memory tasks based on their confidence levels might help reduce stereotype-consistent false memories.²⁹² If stereotype-consistent false memories emerge only when people make guesses, they hypothesized, then instructing people to only answer when they are subjectively confident in their memory should eliminate stereotype-consistent false memories.²⁹³ The results of the study indicated that giving such instructions helped improve general memory accuracy, but did not reduce the amount of stereotype consistent false memories. In fact, participants were just as likely to display stereotype-consistent false memories when they expressed 100% certainty in their memory judgments as when they expressed zero certainty.²⁹⁴ Encouraging jurors to rely on their memory confidence levels, then, appears to be a less than promising way of reducing memory errors. The study also raises the concern that taking steps to improve general memory accuracy, as I propose elsewhere, will not necessarily lead to reduction in stereotype-consistent memory errors.

Late-Correction Memory Strategies. A study by Marsh and his colleagues provides a little more optimism for generating a legal process response to implicit memory bias. Such a response might involve de-stereotyping tasks in connection with jury instructions to reduce stereotype-consistent false memories. Marsh and his colleagues found that using conscious memory control processes may reduce people's reliance on stereotypes in making source attributions. Participants viewed a series of gender-stereotype consistent statements (such as "I made a centerpiece for the dining table") along with the gender neutral name of the person who made the statement.²⁹⁵ After a distraction task, the gender and sexual orientation of the people who made the statements was revealed. Participants were then asked to recall who made the statements. Results indicated that source attribution errors were consistently influenced by gender and sexual orientation stereotype. For example, participants over-attributed stereotypically male statements to heterosexual males and homosexual females.

The experimenters next tested whether "late correction" memory strategies might reduce or eliminate the source attribution bias. Before responding to the

²⁹² B. Keith Payne et al., *Memory Monitoring and the Control of Stereotype Distortion*, 40 J. EXPERIMENTAL SOC. PSYCHOL. 52 (2004).

²⁹³ *Id.* at 54. In part I of experiment, participants performed a memory test in which participants studied a list of "Black" and "White" names (those typically associated with Black or White individuals), which were randomly grouped together with one of two occupations (basketball player or politician). As in other studies described, results for this test indicated the expected stereotype-consistent false memories.

²⁹⁴ *Id.* at 58.

²⁹⁵ *Id.* at 151. This was the methodology for the first portion of the study.

recall task, participants were told to list reasons why they believed stereotypes were harmful in today's society.²⁹⁶ Implementing this simple task reduced some but not all source attribution errors. For example, participants became more accurate in attributing masculine stereotyped statements to homosexual males.²⁹⁷ The moderate success in correcting stereotype-consistent source attribution errors indicates that late correction memory strategies hold promise for reducing legal errors based on stereotypes. In keeping with "late stage" delivery, these correction strategies could be implemented simultaneously with jury instructions.²⁹⁸ However, practical problems might arise in the jury context with a de-stereotyping task that requires jurors to make a list about the harms of stereotypes in order to effectively debias. Yet it is too early to rule out any solutions, even potentially impractical ones.

Juror Note-taking and Question Asking. Another type of memory debiasing takes advantage of procedural tasks such as note-taking to combat memory errors. One of the more popular arguments in support of juror note-taking is the common-sense expectation that note-taking allows jurors to refresh their memories.²⁹⁹ Benefits of note-taking have been verified empirically. In one such study, Horwitz and ForsterLee found that mock jurors who were allowed to take notes during a mock trial did a better job of assessing relevant factual information, including distinguishing between the deservingness of recovery of various plaintiffs.³⁰⁰ This increased accuracy level exceeded much smaller improvements shown by mock-jurors who did not take notes but had transcript access.³⁰¹

Because decisions regarding note-taking are made by the trial judge,³⁰² keeping track of statistics on the prevalence of juror note-taking is difficult. If the vast majority of courts already allow or even encourage note-taking, then suggesting note-taking reforms becomes superfluous. Studies, however, reveal

²⁹⁶ In keeping with the late stage correction theory, participants made this list between viewing the statements and recalling who made the statements. *Id.*

²⁹⁷ *Id.* at 157. However, the instruction did not significantly reduce source attributions relying upon the "masculine" stereotype of homosexual females and only slightly reduced the number of total attribution errors made.

²⁹⁸ Other commentators concerned with juror information processing inefficiencies have argued for debiasing instructions. Prescott & Starr, *supra* note __ at 342 (stating that such debiasing instructions can "hardly hurt"). The efforts I propose could be combined with such efforts.

²⁹⁹ Douglas Smith, *Structural and Functional Aspects of the Jury: Comparative Analysis and Proposals for Reform*, 48 ALA. L. REV. 441 (1997)

³⁰⁰ Irwin A. Horowitz & Lynne ForsterLee, *The Effects of Note-Taking and Trial Transcript Access on Mock Jury Decisions in a Complex Civil Trial*, 25 L. & HUM. BEHAV. 373 (2001).

³⁰¹ *Id.* at 387.

³⁰² Smith, *supra* note __ at 568.

mixed results. A 1988 survey by Heuer and Penrod indicated that approximately one-third of trial judges allow note-taking at trial.³⁰³ More recent projects have pointed to a trend in allowing note-taking, even calling the practice “widespread.”³⁰⁴ Whatever the true estimate, judge-encouraged juror note-taking appears to be needed still.

In addition to their calls for juror note-taking reform, scholars concerned about juror memory errors and cognitive load outside of the implicit bias context have called for additional reforms such as question asking (where jurors may submit questions to the judge during trial) and transcript access.³⁰⁵ These scholars have pointed out that “active juror” reforms improve juror information processing and self-monitoring.³⁰⁶ Encouraging wider-scale note-taking, question asking and transcript access might reduce implicit memory bias by bolstering overall memory accuracy. However, to date there is no evidence that these steps reduce particular memory errors, generation of false memories, or stereotype-consistent memory bias. Further research should be conducted to determine whether these procedural steps, perhaps in combination with late stage memory control techniques (as implemented by Marsh and his colleagues) can help reduce implicit memory biases. Researchers must also continue to investigate strategies to reduce or temporarily eliminate stereotype-consistent memory errors. Studies in this area have not been as successful as hoped, leading some researchers to conclude that the best way to change stereotype-consistent false memories is to change the stereotypes themselves.³⁰⁷

3. *Future Directions.*

The ways in which implicit biases can be moderated and memory errors reduced provide hope for bias reduction and demonstrate the continued importance of future research. The research I have described indicates that although much progress has been made, greater efforts are needed. Implicit

³⁰³ *Id.* at 569 (citing Larry Heuer & Steven Penrod, *Increasing Jurors' Participation in Trials: A Field Experienced in Jury Notetaking and Question Asking*, 12 LAW & HUM. BEHAV. 231 (1988)).

³⁰⁴ MARDER, *supra* note __ at 108, citing JURY TRIAL INNOVATIONS 141 (G. Thomas Munsterman et al., eds. 1997). Some of this trend may be due to strong support for juror note-taking by well respected organizations such as the American Bar Association and Brookings Institution. See NANCY S. MARDER, *THE JURY PROCESS* 109 (2005), citing ABA/BROOKINGS SYMPOSIUM, *CHARTING A FUTURE FOR THE CIVIL JURY SYSTEM* 18 (1992)(calling juror note-taking the “most widely suggested reform for enhancing juror comprehension”).

³⁰⁵ See Prescott & Starr, *supra* note __ (citing Larry Heuer & Steven Penrod, *Increasing Juror Participating in Trials Through Note Taking and Question Asking*, 79 JUDICATURE 256 (1995)).

³⁰⁶ *Id.* at 342-343.

³⁰⁷ See Sherman et al., *supra* note __.

racial biases are elicited quickly and easily, and can only be temporarily reduced through interventional approaches. Biased memory errors, too, have resisted correction. While general memory has been shown to improve with procedural measures, researchers are only beginning to understand how stereotype-consistent memory errors might be reduced. The effort in both of these areas must continue so that a comprehensive legal model of implicit memory bias-reducing interventions can be developed.

VI. CONCLUSION

How can the American legal system stand for justice and fairness when it embraces a decision-making process that propagates racial bias? The automatic and pervasive nature of implicit memory biases highlights the difficulty of finding a solution for this moral and practical conundrum. As I have argued, the only surefire solution for implicit memory bias is cultural change. When racial stereotypes no longer disproportionately link minorities to negative traits, implicit memory biases will disappear. In the meantime, however, some important temporary measures may help lessen the harmful racial effects of implicit memory biases. Nonetheless, more research is needed. This research will continue to inform us as to the nature of memory biases themselves and to ameliorating efforts that will aid the battle against biases in legal decision-making. Research should also be conducted across legal disciplines to determine the pervasiveness of implicit memory biases. These projects might include examinations of decision-making processes in areas such as employment discrimination, property ownership, death penalty, intellectual property, and more.

Although the legal decision-making implications are challenging enough, implicit memory biases have implications beyond the legal system. If they are as pervasive as the research tends to indicate, they may effect decisions big and small—from committees deciding which applicant to admit or job seeker to hire (perhaps misremembering qualifications) to a donor deciding how much money to donate to a charity (perhaps misremembering reputation or past performance). Future research should thus be conducted not only within the legal setting. Only through these projects can we begin to fashion a sophisticated legal response to the harms caused. In the meantime, however, so long as implicit biases go unchecked in legal decision-making, we cannot be confident that social justice is at hand.

Appendix A- Dependent Variable Measures

Below is a list of facts. Some of the facts below accurately describe the case you read. Other facts below do not accurately describe the case you read. Please circle “Y” (for “yes”) next to the facts that are accurately reported from the case. If a fact does not accurately describe the information you read, or if the fact was not in the case at all, circle “N” (for “no”).

- 1) James smiled at William after spilling beer on him. Y/N
- 2) William and his friend hit James one time each. Y/N
- 3) William and James first encountered each other in a bar. Y/N
- 4) William wore a tee shirt and jeans. Y/N
- 5) After James said “Let it go,” William replied by saying “What if we won’t let it go?” Y/N
- 6) William hit James in the face immediately after James shoved William’s friend. Y/N
- 7) After being punched, James took out an object from his pocket. Y/N
- 8) Before going to the bar, William and his friend ate at a local diner. Y/N
- 9) James worked as a plumber. Y/N
- 10) William punched James from behind. Y/N
- 11) William and his friend followed James as he left the bar. Y/N
- 12) After James fell to the ground, William kicked him. Y/N
- 13) When William hit James in the face, he was really trying to push him rather than punch him. Y/N
- 14) When they saw him outside a diner, William and his friend approached James. Y/N
- 15) William was angry that James had spilled beer on him in the bar. Y/N
- 16) James shoved William. Y/N

Appendix A (continued)

Below is a list of facts. Some of the facts below accurately describe the case you read. Other facts below do not accurately describe the case you read. Please circle “Y” (for “yes”) next to the facts that are accurately reported from the case. If a fact does not accurately describe the information you read, or if the fact was not in the case at all, circle “N” (for “no”).

- 1) Brenda worked as a marketing clerk. Y/N
- 2) Brenda was named employee of the month. Y/N
- 3) Brenda’s employment contract stated that she should not be terminated without good cause. Y/N
- 4) Brenda had permission to use her computer for personal use, so long as it occurred during her fifteen minute breaks. Y/N
- 5) Brenda frequently surfed the web. Y/N
- 6) Brenda always completed her assigned work. Y/N
- 7) Brenda’s internet blog generated publicity and created new business. Y/N
- 8) Brenda worked for “Big Burger Company.” Y/N
- 9) Brenda’s employment contract stated that she could be terminated if she failed to comply with the employee handbook. Y/N
- 10) Brenda liked hamburgers but not french fries. Y/N
- 11) Brenda used her phone to make personal long-distance calls. Y/N
- 12) Brenda was allowed a one hour lunch break. Y/N
- 13) Brenda was occasionally sloppy in her work. Y/N
- 14) Brenda worked longer hours than was required. Y/N
- 15) Brenda posted a blog complaining about the company’s burgers. Y/N
- 16) Brenda received mixed reviews from superiors. Y/N

Appendix B- Individual Recall Results:

Aggression Example 1: “When they saw him outside a diner, William and his friend approached James.”

Accurate Fact?	African American/ Hawaiian	Caucasian
No	7	10
Yes	91	44

Aggression Example 2: “Tyronne punched James from behind.”

Accurate Fact?	African American	Caucasian	Hawaiian
No	21	31	31
Yes	30	23	17

Aggression Example 3 (False Memory): “After James said ‘Let it go,’ Tyronne replied by saying ‘What if we won’t let it go?’”

Accurate Fact?	African American/ Hawaiian	Caucasian
No	29	24
Yes	69	30

Mitigation Example 4 (False Memory): “James shoved Kawika.”

Accurate Fact?	Hawaiian	Caucasian	African American
No	12	23	24
Yes	36	31	27

Employment Example 5 (False Memory): “Brenda was named Employee of the Month.”

Accurate Fact?	Hawaiian	Caucasian	African American
No	47	45	45
Yes	1	9	5