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The Missing Quadrants of Anti-discrimination:
Going Beyond the “Prejudice Polygraph”

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Abstract

Behavioral realists urge the law to respond to new scientific discoveries about the reality of contemporary discrimination. But in thinking about how the law might respond, it is easy to frame the question as: When should evidence from scientific instruments, such as the Implicit Association Test, be admissible in a discrimination lawsuit. In other words, should we admit into evidence the results of some “Prejudice Polygraph”? But this framing, which focuses on *specific* facts, found *ex post* is too narrow and obscures a much broader range of potential legal responses. Indeed, by considering both specific and *general* facts, as well as both *ex post* and *ex ante* time orientations, four separate quadrants of analysis emerge. Psychologists, legal scholars, and policymakers should not miss these other quadrants of anti-discrimination.

**The Missing Quadrants of Anti-discrimination:
Going Beyond the “Prejudice Polygraph”**

Embedded within the law are models of how human beings think, make judgments, and behave. These models were not, however, selected through some rigorous scientific competition. Instead, they reflect the intuitive understandings of legislators and judges who made and interpreted the law based on their lay psychological theories of how people work. The law of anti-discrimination is no exception. It too relies on models of how human beings think and behave, especially across social categories such as race and gender. The conventional wisdom was that people made instrumentally rational choices through cognitions that were conscious and self-transparent. In other words, when people discriminated against others, they did so purposefully and with full self-knowledge. But in the past three decades, such traditional “common sense” models have seriously frayed. Modern findings in the cognitive and behavioral sciences have demonstrated that what we thought we knew isn’t quite right, sometimes dramatically so. This burgeoning scientific consensus has triggered calls for the law to become more “behaviorally realistic” (Symposium on Behavioral Realism, 2006).

In the past decade, the branch of science that has arguably most destabilized anti-discrimination law is Implicit Social Cognition (ISC). In rough terms, implicit social cognitions are stereotypes and attitudes that we are unaware of and do not necessarily endorse, but nevertheless exist in our minds, activate automatically, and influence our behavior. These cognitions are measured not through self-reports, but through instruments such as reaction time latencies. The findings in ISC alloyed with findings from audit studies, field experiments, and statistical analyses (see this volume) threaten our self-understandings as self-conscious, rational beings who treat others fairly and on-the-merits. Not surprisingly, such self-critical discoveries have triggered anxiety and even backlash (Borgida, this volume, describing anxiety about Implicit Association Test). For example, critics warn against overreading the evidence. They raise the specter that some instrument that measures, for instance, automatic associations will be treated as a “prejudice polygraph,” failure of which triggers immediate legal liability. Skeptics strongly caution against the “perils of [such] mind reading” (Mitchell & Tetlock, 2006).

Given popular culture’s obsession with gadgets, trial drama, and gotcha moments, it should not be surprising that the prototype of a mind-reading “prejudice polygraph,” introduced as smoking gun evidence in high-stakes litigation, is readily activated. But this framing unduly narrows our understanding of law and the various ways that law might respond to new

scientific discoveries about discrimination. In fact, this framing exemplifies only one out of four possible quadrants worth investigating.

To get a sense of these other quadrants, first consider changing the level of specificity. In other words, instead of trying to determine whether a particular person has a particular implicit bias that on a particular occasion caused a particular behavior that harmed a particular victim, imagine answering a far more general question: Do implicit biases generally exist and influence behavior? Consider, second, changing when we ask the question. Instead of asking after the fact (*ex post*), to blame someone, imagine asking before the fact (*ex ante*), in thinking through preventative strategies and best practices. If we take broader views of both fact specificity (particular to general) and time orientation (*ex post* to *ex ante*), and intersect them, we see that four quadrants of possibility emerge. And a “prejudice polygraph,” which is both particular and *ex-post*, represents just one of those quadrants.

The details are worked out below, but the central payoff is this: By systematically analyzing all four quadrants of possible legal intervention, we can embrace a more comprehensive and robust understanding of how law can take into account new understandings of contemporary discrimination.

Lay Psychology & Behavioral Realism

Before working through the four quadrants, it will be useful first to summarize how the cognitive and behavioral sciences are destabilizing the law of equality and prompting reformist calls for behavioral realism.

Law relies on “common sense” understandings of how human beings make judgments, including those about people who belong to various social categories. This “common sense” is, in turn, based on lay psychology. Accordingly, as Linda Hamilton Krieger has repeated, law cannot opt out of psychology (Krieger & Fiske, 2006). It is already everywhere in the law. Thus the question is not *whether* to accept psychology; rather, the question is what *kind* of psychology the law should accept. On the one hand, we have lay psychology rampant in the status quo. On the other hand, we have more scientifically vetted understandings that often support lay views but sometimes reveal their striking errors. Many scholars writing at the interface of law and psychology have advocated for importing more of the latter, and have called for increased “behavioral realism.”

As explained by Krieger and Susan Fiske:

“[B]ehavioral realism, understood as a prescriptive theory of judging, stands for the proposition that as judges develop and elaborate substantive legal doctrines, they should guard against

basing their analyses on inaccurate conceptions or irrelevant real-world phenomena.” (Krieger & Fiske, 2006, p. 389).

Kristin Lane, Jerry Kang, and Mahzarin Banaji break down behavioral realism into more algorithmic terms:

First, identify advances in the mind and behavioral sciences that provide a more accurate model of human cognition and behavior.

Second, compare that new model with the latent theories of human behavior and decision-making embedded within the law. These latent theories typically reflect “common sense” based on naïve psychological theories.

Third, when the new model and the latent theories are discrepant, ask lawmakers and legal institutions to account for this disparity. An accounting requires either altering the law to comport with more accurate models of thinking and behavior or providing a transparent explanation of “the prudential, economic, political, or religious reasons for retaining a less accurate and outdated view.” (Lane, Kang, & Banaji, 2007).

What happens, for instance, if and when scientists provide convincing evidence that thoughts and feelings that we are not aware of and may not endorse both exist and influence our evaluation of and behavior toward members of various social categories? (Greenwald, Poehlman, Uhlmann, & Banaji, 2009, for meta-analysis). That would mean that the disparate results long evinced by summary statistics across racial and gender groups could not be entirely attributed to merit differences or historical maldistributions of resources. Instead, we would now have reason to believe that these disparate results are also caused—at least in part—by implicit social cognitions operating right now.

How should we respond to such evidence, as is documented in this volume—that we are not as color (or gender, etc.) blind as we supposed? More specifically, how should legal actors respond? Whatever is done, behavioral realists argue that simply ignoring the gap between “what we thought” and “what turns out to be the case” is not an option. Instead, those who make, interpret, and change law must either incorporate these new findings into the law or explain transparently why they cannot.

Four Quadrants of Legal Interventions

But even if lawmakers agree in the abstract that they should incorporate new scientific consensus, what concretely are they supposed to

do? For example, should judges embrace “mind reading” and issue orders based on mere fMRIs? Intentionally crude and tendentious, this sentence was meant to demonstrate that focusing too narrowly on such cases can impoverish our understanding of how science can interact with law. To avoid this fate, we should systematically investigate four separate quadrants, produced by intersecting two conceptual axes based on “specificity” and “time.”

Axis of Specificity. Making new law or applying existing law both require some understanding of the “facts”—either the factual contours of a problem to be solved or the factual particularities necessary to apply general legal principles to a specific case. But as legal scholars have noted, facts can be specific or general (e.g., Faigman, 2008). For instance, we might have a *general* scientific understanding that cigarette smoking causes lung cancer. However, in a tort lawsuit, the more relevant question is whether the particular victim’s lung cancer was specifically caused by smoking a particular brand, which is a different (and much harder) question. Because lung cancer can have other causes, the *specific* finding must at least rule out confounding causes. In other words, even when there is universal scientific consensus about some general fact—e.g., smoking causes cancer—there can still be doubt about a specific factual allegation—e.g., smoking a particular brand caused this particular cancer in this particular person (Faigman, 2008).

Axis of Time. Compared to the axis of specificity, the axis of time has received less scholarly attention. On the one hand, some legal response may have an *ex-ante* time orientation. In other words, it takes place before some future incident of interest, typically some harm to be avoided. The legal act is designed to change behavior to decrease the probability of the incident and/or the magnitude of its harm. On the other hand, the time orientation may be *ex-post*. In other words, the incident of interest has already taken place, and the only question is how to apply existing law to the facts of that incident, to apportion moral responsibility and legal liability.

This axis of time may have received less attention because it often aligns with the axis of specificity. For instance, when we think of general facts, we are often in an *ex-ante* orientation, involving law-making and prevention. By contrast, when we think of particular facts, we are often in an *ex-post* orientation, involving law-applying, accountability, and redress. But as demonstrated below, these pairings are not always so. In order to explore less obvious combinations, we can intersect the two axes, which produces four quadrants (see Figure 1). For easier reference, I give each quadrant a

name. Quadrant I is the “Prejudice Polygraph”; Quadrant II is “Changing the Frame”; Quadrant III is “Self-analysis”; Quadrant IV is “Prevention”.

Quadrant I: “Prejudice Polygraph”

Quadrant I involves *specific* facts in an *ex-post* time orientation. The prototypical example is using the scores from some new implicit bias measure, such as the Implicit Association Test (IAT), as evidence to show that a specific employer violated antidiscrimination law. Notice that this is a question about specific facts—did this particular employer have a particular bias that caused a particular employment action. It is also *ex-post*, in the context of a lawsuit alleging past wrongdoing. It is in this Quadrant that the bogeyman of a mindreading “prejudice polygraph” arises.

Mindreading by fortune tellers is not, however, admissible as evidence. Indeed, the results of an actual polygraph is also inadmissible, more often than not. Whether the results of an IAT or any other instrument, such as neuroimaging, should be admissible turns on the accuracy, reliability, and validity of that instrument. In federal courts, trial court judges act as the gatekeepers for such scientific evidence, in accordance with Federal Rule of Evidence 702,¹ which essentially codifies the Supreme Court’s *Daubert-G.E.-Kumho* trilogy of cases (*Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 1993; *General Electric Co. v. Joiner*, 1997; *Kumho Tire Co., Ltd. v. Carmichael*, 1999). In rough terms, judges must decide whether the proffered evidence was produced by reliable science. This is a flexible determination that considers various factors, including whether the scientific theory or technique has been reliably tested, has been subjected to peer review, has acceptable error rates, and enjoys general acceptance within the relevant scientific community (*Daubert v. Merrell Dow Pharmaceuticals, Inc.*, pp. 593-94).

Three points are worth noting about this Quadrant, which reframes the question of “How should the law respond to the reality of contemporary discrimination?” into “Should courts admit the result of prejudice polygraphs into evidence?” First, no serious scientist has called for using instruments such as the IAT in this specific, *ex-post* context. In fact, leading implicit bias scientists, such as Mahzarin Banaji, have publicly counseled against it (Vedantam, 2005). Second, although nothing like a prejudice polygraph has ever been admitted, other types of “scientific” evidence are regularly introduced in Quadrant I settings. Consider, for instance, fingerprint, bite mark, and hair specimen analyses regularly admitted by trial courts into evidence to prove that the defendant was at the scene of the crime. What’s striking is that according to the recent report from the National Academies of Science, “there is a notable dearth of peer-reviewed, published studies

establishing the scientific bases and validity of many forensic methods.” (National Research Council, 2009, p. 8). The final point flows from the first two. Those who passionately object to using something like the IAT in a Quadrant I context (which no serious academic has called for) should consider mobilizing instead against the use of forensic evidence (which is admitted throughout the country every day). The science validating certain types of forensic evidence is worse—sometimes because it does not even exist—than the science validating implicit bias instruments. Moreover, the stakes in criminal law are much higher, including life imprisonment or death.

In short, although Quadrant I captures much of our attention, it is a red-herring. To repeat, no serious scientist or legal academic is calling for admitting into evidence the results of a prejudice polygraph or “mind reading.” Those who are genuinely anxious that innocent defendants will be wrongly held liable in a court of law on the basis of shoddy scientific evidence should worry less about those accused of prejudice (implicit social cognition) and more about those accused of murder (forensic evidence). Finally, we should not let the salience of Quadrant I’s “Prejudice Polygraph” lead us to ignore the remaining three.

Quadrant II: Changing the Frame

The next quadrant, Quadrant II, keeps the *ex-post* time orientation, but is concerned with *general* facts. If “prejudice polygraph” captured the sense of Quadrant I, what represents Quadrant II, which I suggest “changes the frame”? I offer two examples.

Social framework evidence. Social framework evidence “uses general conclusions from tested, reliable, and peer-reviewed social science research and applies them to the case” (Borgida & Fiske, 2008, p. xxxiii). The idea is that social scientists have gained a superior understanding of general facts, especially when science has revealed discrepancies from lay understandings. These general facts can be shared in the form of expert testimony with the jury to inform and guide their deliberations regarding specific facts. Susan Fiske’s testimony in the *Price Waterhouse v. Hopkins* (1989) Title VII gender discrimination trial is the best known example (Fiske, Bersoff, Borgida, Deaux, & Heilman, 1991). Her expert testimony about sex-stereotyping was discussed by the district court, court of appeals, and the Supreme Court. Countering Price Waterhouse’s dismissal of Fiske’s testimony as a “chain of intuitive hunches about ‘unconscious’ sexism,” the American Psychological Association’s amicus brief supported the credibility of the methodology and literature used by Fiske.

Writing for the D.C. Court of Appeals, Judge Joyce Green pointed out that “unwitting or ingrained bias is no less injurious or worthy of eradication than blatant or calculated discrimination,” and “the fact that some or all of the partners at Price Waterhouse may have been unaware of that motivation, even within themselves, neither alters the fact of its existence nor excuses it.” (*Hopkins v. Price Waterhouse*, 1987, p. 469). At the Supreme Court, writing for a plurality, Justice Brennan was “tempted to say that Dr. Fiske’s expert testimony was merely icing on Hopkins’ cake” and that “no special training” was necessary to discern the sex discrimination (*Price Waterhouse v. Hopkins*, 1989, p. 256). That said, his opinion displayed a thoroughgoing psychological sophistication.

Structural reform litigation. Here is another example that is both ex-post, yet involves general factual findings. In *Farrakhan v. Gregoire* (2006), plaintiffs filed a § 2 Voting Rights Act (VRA) challenge to Washington state’s felon disenfranchisement statute. In order to prevail, a necessary (but not sufficient) requirement was to persuade the federal district court to make a factual finding that the Washington criminal system had engaged in racial discrimination. Notice that this is a general fact-finding, not a specific one focused on specific police officers, prosecutors, juries, and judges.

Surprisingly, the court found “compelling evidence of racial discrimination and bias in Washington’s criminal justice system.” Its finding was not based “solely on [racial disparity] statistics” (*Farrakhan v. Gregoire*, p. 17); it was also based on expert testimony that discussed structural, institutional, and implicit social cognitive factors. One of the sources described as helping to “bolster the Court’s conclusion” (*Farrakhan v. Gregoire*, p. 18) included the expert testimony of Anthony Greenwald, inventor of the IAT, who attached a draft of his work published in a legal symposium calling for Behavioral Realism.

The significance of this case should not be overstated because in the end, the general finding of racial discrimination was insufficient for the trial court to find a VRA violation under a “totality of circumstances” test. And although a three judge panel of the Ninth Circuit Court of Appeals initially reversed that decision, the entire Circuit sitting en banc ultimately affirmed the district court’s judgment (*Farrakhan v. Gregoire*, 2010/2010). The legal details on appeal are largely beyond the point. What’s important here is that *Farrakhan* demonstrates how the reality of contemporaneous discrimination, described through science, can assist courts in finding general facts that can be legally consequential.

This case can be seen as an example of “structural reform litigation,” which is a legal term that can mean many different things. Here, I mean to emphasize litigation requesting a court to provide injunctive relief (not monetary damages) that alters some structural feature of a system, such as prison overcrowding, voting procedures, or education segregation. Often, although not always, structural reform litigation requires finding of general facts.

On one admittedly earnest reading, *Brown v. Board of Education* (1954) involved just this. The Court explained that: “Whatever may have been the extent of psychological knowledge at the time of *Plessy v. Ferguson*, this finding [of harm to Black children] is amply supported by modern authority” (*Brown v. Board of Education*, p.494). That “modern authority” was a footnote listing various psychological studies that found general facts. (*Brown v. Board of Education*, n. 11, citing, e.g., the “doll studies” of K. B. Clark). These were not specific facts found of specific plaintiff children by a clinical psychologist. Yet these general facts (regarding stigma), in an ex-post setting (constitutional litigation), played some part in crafting a unanimous opinion that signaled the beginning of the end of de jure school segregation.

Social framework and structural reform litigation examples show that even in an ex-post orientation of accountability (e.g., adjudicating that some law was broken), *general* facts can still be relevant. More important, even if one believes that science should *not* be used in a Quadrant I setting (e.g., as a “prejudice polygraph”), one can believe it appropriate in a Quadrant II setting, to help change the frame. One judgment does not determine the other.

Quadrant III: Self-Analysis

Quadrant III delves into less familiar territory: specific facts but ex-ante. Can the recent findings from scientific research examining contemporary forms of discrimination be relevant to this quadrant as well? Consider the practice of self-criticism, in an employment and a policing context. First, suppose a specific person, a manager of some organization, wants to learn more about her implicit biases. The time orientation is ex-ante, to prevent implicit biases from infecting important decisions in future hiring and contracting. Suppose that that manager takes various tests, including reaction time measures of implicit bias. Given surprising findings, she takes countermeasures such as anonymizing job applications at initial screening, (Bertrand & Mullainathan, 2004; Rooth, 2007), pre-committing to merit criteria (Uhlmann & Cohen, 2005), using more structured interviews, and being less willing to go on gut feelings of likability (Rudman & Glick, 2001).

Now suppose later that that specific individual is sued for discrimination. This could be by a White male plaintiff who argues that these attempts to avoid discrimination were in fact illegal affirmative action programs. (This hypothetical is inspired by the facts of the recent Supreme Court decision in *Ricci v. DeStefano* [2009]). Or, the suit could be by a racial minority plaintiff who was hired, but later was denied a promotion.

Here is a second example, in the field of policing. Various studies have revealed the existence of “shooter bias”—the propensity to shoot African Americans faster (and with greater errors) than Whites in a simulation (Correll, Park, Judd, & Wittenbrink, 2002; Sadler, Correll, Park, & Judd, this volume). There is also some evidence that particular training regimens can decrease shooter bias (Plant, Peruche, & Butz, 2005). So, suppose that a socially responsible police chief investigates whether his officers have shooter bias. Finding that they do, he adopts new training that decreases that bias. After a shooting in the field of an African American youth, the victim’s family sues and requests the “shooter bias” measures of the accused police officer.

In federal court, under the Federal Rule of Civil Procedure 26(b)(1), discovery is quite broad. As long as the requested information is “nonprivileged matter that is relevant to any party’s claim or defense,” that information should be turned over. The material requested need not be itself admissible as long as it is “reasonably calculated to lead to the discovery of admissible evidence.” Under this standard, the manager’s implicit bias score and the police officer’s shooter bias score may well be discoverable. But permitting discovery would create perverse incentives to avoid finding out one’s biases in the first place—in which case the countermeasures would have never been adopted. If we do not want to penalize self-discovery of biases, what might we do in this setting? We could adopt some sort of self-criticism evidentiary privilege to encourage self-discovery, without threat of that information becoming discoverable in a civil law suit.

Analogous privileges have been recognized in various state jurisdictions. For example, some states have recognized a privilege for medical committee reports and self-evaluations after a medical accident (Flanagan, 1983). The Federal Rules of Evidence 407 also recognize a privilege that covers “subsequent remedial measures”: after a product has hurt someone, a manufacturer might want to improve that product’s design. But if such remedy will be exploited by a trial lawyer as tacit admission of the product’s defect, a manufacturer might think twice. To decrease any such

disincentive, the law prevents the evidence of subsequent remedial measures from reaching the jury (to prove negligence or defect).

At least one legal commentator has called for a similar evidentiary privilege covering self-discovery of implicit biases (Pollard, 1999). Given that the leading scientists have not called for Quadrant I application, there seems to be little loss to the goal of truth-seeking in keeping specific implicit bias scores out of the civil litigation process.⁵ That said, the argument to create an evidentiary privilege is always complex. My goal here is not to weigh authoritatively the costs and benefits of creating some such privilege. Instead, my modest point is to show how science could help us find specific facts (e.g., our individual biases) that, in turn, prompt ex-ante preventative actions (e.g., countermeasures). Again, one's views about Quadrant I's prejudice polygraph says little about the proper analysis of Quadrant III questions.

VII. Quadrant IV: Prevention

Finally, we have reached Quadrant IV--general and ex-ante--conceptually most distant from Quadrant I. Within this "Prevention" quadrant lies the possibilities of revising the procedure and substance of law in light of better scientific understanding of our general cognitive tendencies.

The paradigmatic context for this quadrant is not jury trial but legislation. When a legislature enacts legislation to counter some problem, how does it know that the problem exists and that its proposed legislation might help? These questions necessarily turn on some understanding of "facts," but they are not the specific facts of any particular isolated case or adjudication. Instead, they are general facts, similar to the ones that scientists try to discern. For example, if a city wants to ban smoking in bars, specific causation in a particular historical victim of second-hand smoking need not be proven. Instead, the city just needs to be persuaded of the general fact that cigarette smoke is a carcinogen. If such a ban is enacted, it is in an ex-ante context. The point here is not to hold someone liable for violating some such ban; instead, it is to create a law that changes prospectively some behavior of interest. Here are two Quadrant IV examples to consider in the context of discrimination.

Eyewitness identification. Scientists have determined general facts that eyewitness identification - especially across races - is quite poor, and that certain methods of identification produce greater reliability. For example,

instead of providing a single suspect, and asking the witness whether he was the perpetrator, greater reliability can be produced by using photo spreads, sequential lineups, or particular identification instructions (Berger, 2008). On the basis of these general facts produced by scientific inquiry, many police departments have reformed their identification practices. (Diamond, 2008).

Debiasing agents. Jerry Kang and Mahzarin Banaji have reframed parts of the affirmative action controversy into one about "fair measures" (Kang & Banaji, 2006; see also in behavioral economics literatures Jolls & Sunstein, 2006). In that analysis, they raise the possibility of hiring certain individuals because they function as "debiasing agents," whose counter-stereotypical and counter-attitudinal behavior decreases implicit biases of those around them. In the next decade, suppose that scientists accumulate substantial evidence of the following: (i) implicit bias exists against a racial group, (ii) such bias predicts real world behaviors, and (iii) exposure to debiasing agents decreases implicit bias (Dasgupta & Asgari, 2004; Dasgupta & Greenwald, 2001; for literature review, see Blair, 2002). Such science could lead an institution, such as a public law school, to hire a racial minority applicant (over a comparably qualified White applicant) not as a "role model" but as a debiasing agent. Such a decision would draw an Equal Protection challenge.

Because race was explicitly considered, under current constitutional doctrine, this decision would be reviewed under strict scrutiny, which entails a particular type of means-ends analysis. First, the end sought by the state actor has to be "compelling". Second, the means deployed - in this case exposure to a counter-stereotypical exemplar - must be "narrowly tailored" to achieving that compelling interest. As for the ends, the point of this intervention is not to increase minority student self-esteem (connected to the "role model" justification), redistribute wealth between groups, or correct hard-to-measure general "societal discrimination." All three such goals have been rejected by the courts as not compelling. Rather, the point of debiasing is to directly counter (implicit) racial bias that has been found to predict discrimination. And preventing race from influencing behavior—has always been recognized as a compelling interest.

As for narrow tailoring, courts usually look to whether the technique deployed is underinclusive, overinclusive, and whether some other technique that is not facially race-conscious could have solved the problem just as well. Here, the particulars of the debiasing intervention will matter greatly, but the debate will turn substantially on the findings of general facts about the magnitude of implicit bias, its behavioral manifestations, and its malleability

via the chosen debiasing technique. On the one hand, this seems difficult to demonstrate. On the other hand, in the past, the courts have accepted science with arguably no greater evidence of narrow tailoring. Consider specifically the doll studies in *Brown* (striking down “separate but equal”) and the educational diversity studies in *Grutter v. Bollinger* (2003) (upholding admissions policy at Michigan Law School). Of course, these opinions could be interpreted as more political compromises than earnest applications of new science.

Again, the goal here is not to discuss in detail the complex merits and legal analysis of any particular policy, such as particular eyewitness identification procedures or debiasing agent strategies. Instead, it is to show important examples and opportunities that sit in Quadrant IV.

Conclusion

This volume examines the reality of contemporaneous forms of discrimination. Various chapters in this volume provide better pictures of that reality, produced by the traditional application of scientific methods. When a new consensus emerges, behavioral realism asks the law to take account of this (new picture of) reality—or to explain transparently why it cannot. This does not mean, however, that judges should allow in IAT scores or PET scans as prejudice polygraph scores. And to focus the debate in that way is to miss inadvertently (or to obscure intentionally) the larger picture. An intersection of the axes of specificity and time produces a total of four conceptual quadrants worthy of consideration. A “prejudice polygraph” is only Quadrant I; the other three quadrants—Changing the Frame, Self-Analysis, and Prevention—should not be excluded from our field of attention. The simple message for scientists and legal scholars alike is to appreciate the capaciousness of the questions presented. Such an understanding will, in turn, license the creativity necessary to solve modern problems of discrimination with modern tools.

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		Time Orientation	
Specificity		<i>ex post</i>	<i>ex ante</i>
	<i>specific</i>	Quadrant I: “Prejudice Polygraph”	Quadrant III: “Self-Analysis”
	<i>general</i>	Quadrant II: “Changing the Frame”	Quadrant IV: “Prevention”

Figure 1: Four Quadrants of Legal Intervention

Footnotes

1. Under Rule 702, an expert may testify in the form of an opinion or otherwise “if (1) the testimony is based upon sufficient facts or data; (2) the testimony is the product of reliable principles and methods; and (3) the witness has applied the principles and methods reliably to the facts of the case.”
2. To be fair, this recommendation against Quadrant I usage, given the current state of science, should cut in both directions. It should exclude not only the inculpatory evidence that a specific person *has* implicit bias but also the exculpatory evidence that she *lacks* it.