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Understanding Implicit and Explicit Attitudes Toward Prosecutors and Defense Attorneys

THESIS

submitted in partial satisfaction of the requirements
for the degree of

MASTER OF ARTS

in Social Ecology

by

Taylor Kidd

Thesis Committee:
Department Chair and Professor Mona Lynch, Chair
Professor Emeritus William Thompson
Professor Shauhin Talesh

2018

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ABSTRACT OF THE THESIS

Understanding Implicit and Explicit Attitudes Toward Prosecutors and Defense Attorneys

By

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Master of Arts in Social Ecology

University of California, Irvine, 2018

Professor Mona Lynch, Chair

Research consistently finds that jurors bring preexisting attitudes and opinions, which can influence trial outcomes, into the courtroom. However, the process of jury selection (*voir dire*) remains largely unchanged. This research seeks to understand if juror decision-making is influenced by implicit perceptions of legal actor trustworthiness. Participants were recruited from Amazon's Mechanical Turk online platform and were randomly assigned to read a summarized trial scenario. Participants rendered a guilty or not guilty verdict and reported their perceptions of the prosecutors and defense attorneys from the trial scenarios. Two of the three trials differed according to presentation of "compromising" evidence by either the prosecution or defense, with the third serving as a control condition. Additionally, to establish if participants had trustworthy or untrustworthy implicit attitudes toward prosecutors or defense attorneys, participants completed an Implicit Association Test (IAT). Participants then reported explicit attitudes and opinions about the role of prosecutors and defense attorneys in society, in addition to providing their demographic information and criminal legal system attitudes. Results indicate that explicit biases and certain demographic variables are strongly associated with verdicts in trial scenarios, as compared to implicit biases. However, in particularly ambiguous cases, implicit biases of legal actor trustworthiness appear to inform verdicts. These results suggest that reliance on explicit

attitudes and demographic characteristics during voir dire may not be adequate predictors of individual juror outcomes in cases in which the evidence for both the prosecution and defense is particularly ambiguous.

INTRODUCTION

Psycho-legal research has consistently demonstrated that bias exists throughout jury selection, otherwise known as voir dire (Roberts, 2011; Thompson, Cowan, Ellsworth, & Harrington, 1984). The process of selecting a jury has remained largely unchanged, allowing for such biases to result in legal institutional discrimination, particularly against racial minorities, which may perpetuate and reproduce social inequities (Alschuler, 1989; Sommers & Norton, 2008). Prior research has uncovered that peremptory challenges used to dismiss potential jurors without explanation have been exercised by attorneys to exclude individuals on the basis of race—with such dismissals grounded in inaccurate stereotypes related to race and gender (Levinson, Cai, & Young, 2010; Rapping, 2013; Roberts, 2011; Zeisel & Diamond, 1978). Peremptory challenges may further influence trial outcomes because attorneys may systematically select jurors with specific beliefs, thus reducing the diversity and composition of the seated jury (Anwar, Bayer, & Hjalmarsson, 2012; Page, 2005).

Experimental investigations employing Implicit Association Tests (IATs) have established that biases in both jurors and legal actors may influence trial outcomes (Levinson, 2007; Levinson et al., 2010). Given the importance of these findings, which challenge our guaranteed right to a trial by an impartial jury, this research uses experimental methods and attitudinal questionnaires to examine implicit and explicit biases toward prosecutors and defense attorneys to further the discussion surrounding systemic issues that plague jury selection. A variety of factors influence who is eligible to serve on a jury (e.g. registered to vote, no previous felony conviction). Jury summons eligibility criteria therefore constrain the pool of potential jurors. This constraint may be associated with overrepresentation of certain biases that may disproportionately disadvantage specific groups of individuals in contact with the legal system.

For example, formerly convicted felons are often barred from serving on a jury on the basis that felons are inherently biased against the prosecution, yet law students display similar biases and are not barred from service (Binnall, 2014). Reliance on stereotypes to exclude individuals with certain characteristics demonstrates that our legal system accepts that biases both for and against legal actors exist. Excluding specific groups from jury service based on broad generalizations is, conversely, stereotypical. Research has yet to address if individuals harbor preexisting biases towards prosecutors and defense attorneys.

It is important to assess if stereotypical categorizations of prosecutors and defense attorneys exist because voir dire is supposed to ascertain if a potential juror is biased from explicit questions (Snowden, 2005). Although challenges for cause and peremptory challenges allow attorneys to excuse biased individuals from service, voir dire assumes that individuals truthfully and explicitly communicate such biases. Potential jurors may lie about their own biases or may be unaware of their unconscious biases altogether. Utilizing implicit measures to address jurors' non-racial perceptions of trustworthiness of legal actors may aid in understanding if current explicit measures are able to address one specific form of bias or if implicit measures better explain the association between bias and outcome.

Informed by psychological theory and psycho-legal research, this research seeks to uncover if individuals harbor implicit biases toward prosecutors and defense attorneys, using experimental methodology and attitudinal assessments, to understand if potential jurors exhibit biases that undermine the ability of defendants to receive a fair trial, before a trial even begins. This research seeks to overcome previous attempts at using juror demographics, biases, or attitudes to make predictions about juror performance. By incorporating a variety of measures, including those that implicitly and explicitly measure attitudes toward legal actors, this research

seeks to uniquely contribute to the literature by addressing a wider range of potential juror attitudes and biases, while uncovering if implicit biases align with explicitly reported attitudes.

LITERATURE REVIEW

The Psychological Phenomenon of Implicit Bias

From a psychological perspective, categorization is a necessary mental process used to make sense of our social world (Wilder, 1986). Categorization entails the creation of mental categories so that information may be sorted, organized, and retrieved quickly (Fiske, 2000). As a result of categorization, beliefs surrounding members of social groups may be inaccurately applied to all group members (i.e. stereotyping) and such inaccurate beliefs may further lead to discriminatory attitudes and behaviors (Fiske, 2000; Levinson et al., 2014; Sommers & Norton, 2008). Stereotypes may additionally be classified as explicit (known) or implicit (unknown) (Kang et al., 2012). Implicit stereotypes, not consciously detectable to the individual possessing them, are often uncontrollable and can function automatically. Given the difficulty of measuring implicit cognitions, the Implicit Association Test (IAT) was developed to uncover implicit stereotypes/biases in individuals and has since been used to develop aggregate depictions of implicit beliefs across populations.

The IAT is a computerized method designed to measure an individual's reaction time in a sorting task with two categories (Greenwald, Nosek, & Banaji, 2003; Kang et al., 2012). Based on a social psychological understanding of automatic cognitive processes, the IAT presents stereotype-consistent and stereotype-inconsistent combinations of concepts or images. When a participant encounters a pairing that is inconsistent with their mental heuristic of the concepts presented, they are likely to respond slower than in a stereotype-consistent scenario. For example, a commonly-used IAT requires respondents to pair photographs of Black and White

individuals with “good” and “bad” words (Levinson et al., 2010). Consistently, participants have quicker reaction times when pairing “good” words and White faces, indicating negative implicit bias towards Black individuals. The IAT can therefore serve as a measure of individual differences that depicts the strength of implicit biases and/or stereotypes an individual may unknowingly hold (Greenwald et al., 2003; Levinson et al., 2010).

However, the IAT has been critiqued because interpretation of IAT output rests on the assumption that the bias of interest is being conceptually measured from reaction times when sorting stereotype-consistent and inconsistent pairings. Both external and internal factors that cannot be controlled for could influence IAT outcomes. For example, a respondent’s IAT associations may change depending on current events, life circumstances, concept familiarity, etc. that are beyond the scope of experimental control (Ottaway, Hayden, & Oakes, 2001). The IAT may therefore measure strength of associations or comparative attitudes rather than true bias (Brunel, Tietje, & Greenwald, 2004). Additionally, participants may be aware of a socially desirable response when taking an IAT. As a result, the IAT cannot be used as a diagnostic tool for uncovering and correcting bias (Roberts, 2011).

Nonetheless, as compared to survey measures, the IAT can better uncover socially undesirable attitudes, such as discriminatory beliefs (Kang et al., 2012). In particular, the IAT has been useful in studying racial biases in a variety of settings, including the courtroom (Roberts, 2011). Research has found that judges, jurors, and attorneys harbor implicit biases that may impair how these individuals perceive evidence, defendants, witnesses, and experts (Hepburn, 1980; Roberts, 2011). In one such study, Levinson, Cai and Young (2010) created a Guilty/Not Guilty IAT, finding that mock jurors had stronger implicit reactions towards the Black/Guilty pairing and these biases influenced how jurors perceived ambiguous evidence.

Importantly, these findings demonstrate how biases infiltrate impartiality and may perpetuate systemic discrimination within our legal system.

Voir Dire

Before selected for a trial, prospective jurors are screened for eligibility through a process known as voir dire (Alschuler, 1989). Judges, defense attorneys, and prosecuting attorneys ask potential jurors questions that purportedly ascertain if a person's experiences, relationships, and/or beliefs impact their ability to serve as an impartial juror. Prospective jurors are additionally asked to report if they have any knowledge of the case being tried or have a relationship to specific parties involved. Through this process, judges may excuse individuals who satisfy requirements of a waiver for extreme hardship (e.g. personal circumstances that prevent service on a jury) or individuals with a conflict of interest.

Attorneys then question prospective jurors and can remove individuals via one of two processes: challenges for cause or peremptory challenges (Hastie, 1991; Snowden, 2005). Challenges for cause are limitless, but attorneys must prove to the judge that the prospective juror displays biases that prevent them from impartially assessing facts of the case. Peremptory challenges are restricted in quantity but allow attorneys to excuse prospective jurors without cause. The process of voir dire therefore relies on explicit reports of biases from potential jurors themselves and/or attorney beliefs that an individual is biased. Peremptory excusals may be grounded in stereotypical beliefs based on perceivable characteristics (e.g. race) that do not require an explicit justification to the judge (Alschuler, 1989).

Juror Biases and the Flawed Nature of Jury Selection

During voir dire, attorneys may rely on surveys provided by jurors themselves, attitudinal surveys of the population from which the jury panel is selected, and/or public surveys that

provide demographic tendencies (e.g. men are more punitive than women) that are extrapolated to the jury (Hastie, 1991). These surveys are used to identify characteristics of potential jurors that likely relate to desired case outcomes (Hepburn, 1980). Legal actors may therefore screen eligible jurors accordingly and remove specific jurors that would—presumably—be predisposed toward certain decisions. Although attitudes cannot necessarily predict verdicts, attorneys frequently challenge jurors with seemingly unfavorable attitudes (Thompson et al., 1984). Further, voir dire may require potential jurors to report on biases they may harbor, such as specific biases (i.e. attitudes and beliefs related to aspects of the case) and general biases (e.g. attitudes and beliefs that are commonly related to criminal cases) (Stowers, 1989). Voir dire thus relies on the assumption that people are aware of their own biases and/or are willing to explicitly report on their socially undesirable opinions, such as those related to race (Snowden, 2005).

Capital cases requiring jurors to be death qualified demonstrate issues related to jury selection, composition, and biases quite well. Because capital cases necessitate that jurors be willing and able to sentence an individual to death, such trials are, by nature, not impartial (Haney, 1984; Levinson et al., 2014). The death qualification process has additionally been found to increase jurors' conviction proneness, belief in defendant guilt, and application of death sentences (Haney, 1984). Excluding specific individuals from service, such as individuals who oppose the death penalty, may create a jury with narrow views or certain propensities. Representativeness is therefore reduced, and evidence may be subject to a specific form of interpretation that has the potential to influence trial outcomes (Anwar et al., 2012). Despite numerous empirical investigations detailing capital voir dire as violating constitutional guarantees, legal reforms have failed to rectify such biases, potentially resulting in racialized applications of death sentences.

Perceptions of Legal Actors and Trial Outcomes

Research has also found jurors' perceptions of attorneys influences trial verdicts. For example, Miller, Wood, Sicafuse, and Chomos (2010) surveyed jurors and discovered that verdicts corresponded to jurors' perceptions of prosecution and defense attorneys in regard to demeanor, sincerity, preparedness, etc. Trahan and Stewart (2011) similarly addressed jurors' perceptions of attorney characteristics in capital cases. Interviews of jurors uncovered that capital jurors held various biases and had more negative perceptions of defense attorneys as compared to prosecutors. In turn, these negative impressions were associated with defendants being sentenced to death. Although these findings are important, they are unable to assess whether preexisting implicit biases informed perceptions of prosecutors and defense attorneys.

Psychological attitudinal theories support the idea that attitudes and beliefs can influence how an individual perceives specific concepts (e.g. beliefs about crime are related toward attitudes about capital punishment) and how an individual interprets the behavior of others (Haney, 1984; Thompson et al., 1984). Implicit biases can therefore influence interpretations of an individual's behavior. In the context of death qualified jurors, those who favor the death penalty are more likely to harbor positive views of prosecutors and police while they tend to be suspicious of defense attorneys (Thompson et al., 1984). Additionally, death qualified jurors have been found to interpret evidence presented by the prosecution more favorably and view prosecutors' witnesses as more credible as compared to jurors excluded from service on capital cases. With these findings in mind, it is important to investigate whether potential jurors hold biased attitudes towards prosecution or defense attorneys prior to trial proceedings. The present study is interested in broadly assessing implicit beliefs potential jurors may hold regarding prosecutors and defense attorneys.

Although prior research has uncovered a relationship between laypersons' (or mock jurors') perceptions of legal actors and trial outcomes, these studies rely on jurors' perceptions of attorneys in-action in the courtroom. The present study seeks to fill a current gap in the literature using hypothetical legal actors to broadly determine if jurors harbor biases that are not influenced by actual attorney performance. Previous studies predominantly address how jurors' perceptions of prosecutors and defense attorneys (e.g. personality, presentation style, preparedness) in the courtroom influence sentencing outcomes (see, e.g. Miller et al., 2010). By controlling for characteristics attorneys both can (e.g. lawyering skills) and cannot (e.g. gender, race) control using a summarized case description, this study seeks to understand if and how inherent biases or beliefs about legal actor trustworthiness impact verdicts. Further, by explicitly asking for opinions about legal actors, this study has the potential to address whether implicit biases *or* explicit biases are more accurate predictors of outcomes.

AIMS AND HYPOTHESES

Due to the likelihood that potential jurors hold stereotypes of prosecutors and defense attorneys, this research is interested in utilizing IAT measures to determine prospective jurors' perceptions of trustworthiness and untrustworthiness of these legal actors, and how such biases may influence verdicts. To determine how biases are related to verdicts, participants will 1) be randomly assigned to read one of three ambiguous case descriptions, in which defendant guilt is ambiguous, and arrive at a verdict, 2) complete a Trust/Distrust IAT, and 3) report on their explicit attitudes toward legal actors, personal opinions about the role of prosecutors and defense attorneys in society, and hypothetical role-related questions (e.g. Could you defend a client that you knew was guilty?). Demographic information and attitudes related to the criminal legal system will be collected to understand if attitudinal/demographic divisions—as established by

prior research and public opinion polls—are reflected in perceptions of legal actor trustworthiness.

Based on previous research findings (Trahan & Stewart, 2011), it is hypothesized that participants will be more likely to see prosecutors as trustworthy and defense attorneys as untrustworthy. These implicit biases are also hypothesized to predict verdicts better than explicitly reported biases. Additionally, demographic divisions are anticipated in implicit and explicit results. More specifically, it is anticipated that younger, female, and non-white individuals will hold more favorable views of defense attorneys while older, male, and white individuals will hold more favorable views of prosecutors. However, based on prior research (Binnall, 2014; Devine, Clayton, Dunford, Seying, & Pryce, 2001; Lynch & Haney, 2009), it is expected that juror demographics and attitudes alone are insufficient in addressing or predicting performance on a jury.

Results from this research can help address if implicit biases align with explicit biases, and if explicit and/or implicit bias informs verdicts. Because voir dire relies on explicit reports of bias from potential jurors, this research may provide insight into the efficacy of the current system’s reliance on explicitly stated attitudes, or if implicit attitudes should additionally be considered during prospective juror screening. This is an important consideration because determinations of guilt should be informed solely by evidence presented and facts of the case, as opposed to perceptions of legal actor trustworthiness.

METHODS

Sample

Jury-eligible participants were recruited from Amazon’s Mechanical Turk (MTurk) website, which allows “workers” to complete a Human Intelligence Task (HIT) (Berinsky,

Huber, & Lenz, 2012). Because this study involved an IAT that required access to a computer and participant computer literacy, MTurk provided a simple check on this requirement because all individuals accessing MTurk are assumed to be computer-literate. While not a truly representative sample, participants from MTurk are typically more diverse compared to participant pools of college students or participants recruited from other online platforms (Casler, Bickel, & Hackett, 2013; Irvine, Hoffman, & Wilkinson-Ryan, 2018). MTurk participants from the United States are, on average, in their mid-thirties, female, highly educated (earned a bachelor's degree) and employed (Ross et al., 2010). Through MTurk, it is possible to screen out ineligible participants (e.g. non-U.S. citizens) and compensate participants for their time spent on HITs. MTurk workers who elected and consented to complete the HIT were provided a link that redirected them to the study through Qualtrics. After completing the study, participants were provided a random number-generated code to enter into MTurk to receive compensation for completing the HIT.

A total of 233 participants completed the study. Participants ranged in age from 21 to 78 years old, with the average age of participants being 38 years old. 133 participants identified as male (57%) and 100 identified as female (43%).¹ The majority of participants identified as White (71%), as compared to Black (9%), Alaskan Native or American Indian (0.43%), Asian (5%), Multi-racial (8%) or Latino/Hispanic (7%). Participants who indicated “other race” and ethnically identified themselves as Hispanic/Latino are reflected in the Latino/Hispanic category. Given the limited number of observations, Alaskan Native or American Indian ($n = 1$), Asian ($n = 12$), and Multi-racial ($n = 18$) were combined into one category.

¹ Participants were provided alternative options to “male” and “female” identifications, but none of these options were selected. Therefore, only “male” and “female” are discussed in relation to gender.

Procedure

This study received Institutional Review Board approval through the University of California, Irvine. Participants were not informed of the true purpose of the study, and instead were told that the research was broadly interested in addressing attitudes toward various aspects of the legal system. At the end of the study, participants were debriefed and the justification behind the use of deception was explained. All participants elected to have their data included in the study. On average, participants completed the study in 35 minutes.

MEASURES

Manipulated Case Vignettes

Participants were randomly assigned to read one of three case descriptions. The case descriptions were designed to take participants approximately 15 minutes to read. Across all conditions, instructions and background information were identical (see Appendix). The instructions informed participants that they would be reading a description of a felony murder trial in which the evidence of interest was a recovered partial latent fingerprint on a weapon. Additionally, participants were informed of the prosecution and defense's arguments and were told that both the prosecution and defense had expert witnesses (fingerprint analysts) that testified in favor of the guilt or innocence of the defendant, respectively.

The case descriptions were designed to be intentionally ambiguous as to defendant guilt. As Kassin, Reddy, and Tulloch (1990) noted, "in courtrooms...people are often confronted with evidence that is ambiguous enough to accommodate contradictory interpretations" (p.44). Additionally, juror predispositions are most likely to influence decisions when "situational cues are weak or ambiguous" (Kassin & Wrightsman, 1983, p. 437). Without compelling evidence, jurors may therefore rely on inherent predispositions, allowing beliefs and values to color their

decisions, rather than impartially analyzing the facts of the case. Further, there was no mention of legal actor, victim, or defendant demographic characteristics in order to gain a clearer understanding of legal actor bias that is not influenced by extraneous variables (e.g. victim gender, race of legal actors).

Participants were randomly assigned to read case descriptions that varied according to how much information the expert witnesses were told about the criminal investigation prior to conducting their forensic examinations to determine the likelihood that the recovered latent fingerprint on the weapon belonged to the defendant (see Appendix). These manipulations resulted in three conditions: control (no discussion of how the forensic examinations were conducted), presence of a blind expert for the defense, and presence of a blind expert for the prosecution. For example, in the presence of a blind expert for the defense condition, the defense argued that the prosecution's expert witness was informed of the defendant's identity as a person of interest, resulting in a biased examination. In this condition, the defense's expert used a case manager model of examination (i.e. a case manager received information about the ongoing criminal investigation and determined what types of examinations were to be conducted by the analyst, who was blind to the identity of suspect).

Each case description followed the same sequence: instructions and background information were presented and were identical across conditions. In the presence of a blind expert for the defense and the control conditions, a summary of the prosecution's evidence was presented, followed by a summary of the defense's evidence. In the presence of a blind expert for the prosecution, a summary of the defense's evidence was presented, followed by a summary of the prosecution's evidence. Presentation of evidence was rotated for each manipulated condition

to allow for a logical challenge about the lack of a blinded expert from the opposing party. Participants were then asked to arrive at a guilty or not guilty verdict.

Previous research has uncovered that expert witnesses who receive contextual information prior to arriving at a decision, conducting an exam, etc. may be (unconsciously) biased to arrive at the desired outcome (Dror & Charlton, 2006). One proposed solution, particularly in the case of forensic examinations, is to use a “blind expert” that is not provided contextual case information (Thompson, Black, Jain, & Kadane, 2017). Because additional empirical support is needed before instituting a policy that mandates expert witnesses be blinded, such procedures are not yet universally established. Therefore, the use of blinded v. unblinded expert testimony in the above ambiguous case description could be understood as prosecution or defense presenting “compromising” information (using expert witnesses as a proxy for this compromising evidence). Because fingerprint analysis is widely perceived to be a hard science (Dror, 2012), the case description remains ambiguous and the presence of a blind expert is unlikely to be the deciding factor of juror verdicts, given the higher burden of proof standard in criminal trials and the findings that expert witness testimony has a weak overall impact on jury decisions (Devine et al., 2001).

Criminal Legal System Attitudes

Following the case scenario, all participants completed the Attitudes Toward the Criminal Legal System (ATCLS) and Belief in a Just World (BJW) questionnaires (Lucas, Zhdanova, & Alexander, 2011; Martin & Cohn, 2004). These scales were specifically placed after the case vignette and before the IAT to distract participants from the true purpose of the study and to gather general attitudes toward the legal system. Martin and Cohn’s (2004) ATCLS scale measures how delinquent behaviors and criminal legal system interactions are related to attitudes

toward the criminal legal system, in addition to concepts such as belief in a just world and authoritarianism. The ATCLS scale consists of 24 questions (e.g. Prosecuting attorneys are dishonest if it means they can win a case) and each is rated on a five-point Likert scale. Higher overall scores depict positive attitudes toward the criminal legal system and trust in the legal system. Although ATCLS addresses belief in a just world, the traditional BJW scale was incorporated because 1) belief in a just world is related to jurors' decisions in both criminal and civil trials, and 2) beliefs about justice for others are related to social attitudes (Lucas et al., 2011). The shortened version of the BJW questionnaire used here contains eight questions (e.g. People usually receive the outcomes that they deserve), using a seven-point Likert scale, that measure perceptions of distributive and procedural justice regarding other people. Higher overall scores depict stronger beliefs in justice.

Implicit Association Test

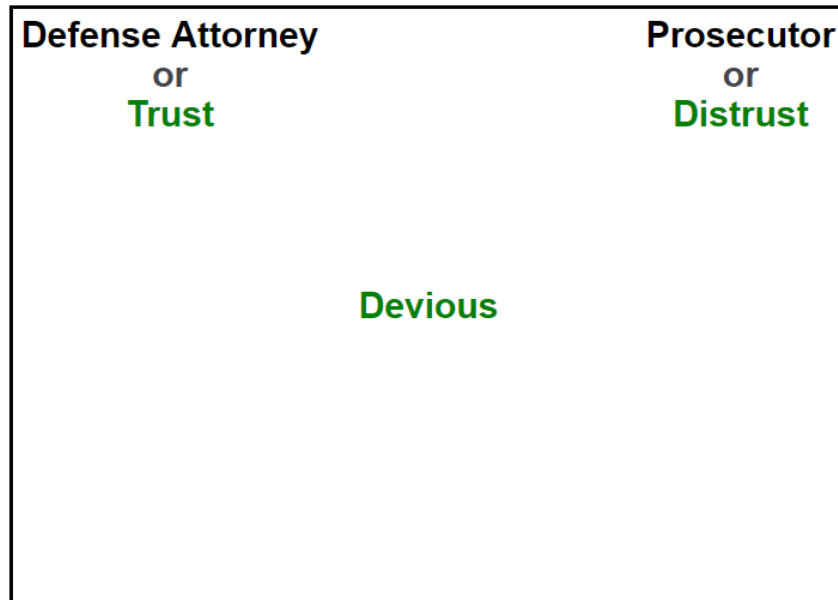
Participants were then randomly assigned to complete one of four randomized blocks of the Trust/Distrust IAT, in which the target pairing of Prosecutor/Trust was assumed to be evaluated more positively than the pairing of Defense Attorney/Trust (see aims and hypotheses section for the reasoning behind this assumption). The Trust/Distrust IAT was created using iatgen software, a free resource that is able to run within Qualtrics, does not require participants to download software, and “automatically processes the IAT data following established guidelines and exports clean IAT scores for use in any statistical package” (Carpenter et al., 2017, p. 5). Further, iatgen allows for participant assignment, using Qualtrics' randomizer feature, to different permutations of the IAT while ensuring that equivalent numbers of participants complete each trial.

Participants were shown groups of words (Figure 1) and were asked to categorize items as quickly as possible. Participants were instructed to place their fingers on computer keys “E” and “I,” as pre-programmed by iatgen, and sort words into categories that appeared on the top left and right corners of their screen (if participants incorrectly sorted an item, a red “X” appeared and participants could only continue the trial by sorting the word into the appropriate category). Categories were then presented together (e.g. Prosecutor OR Trust and Defense Attorney OR Distrust) and were swapped in the remaining conditions (e.g. Prosecutor OR Distrust and Defense Attorney OR Trust). Order pairings of words were automatically randomized to reduce first-order presentation effects across the sample. Participants completed seven sorting trials, including practice trials that allowed participants to adapt to the IAT layout (Figure 2).

Figure 1

Category	Items
Prosecutor	Prosecutor, Prosecution
Defense Attorney	Defense Attorney, Defense
Trust	Truthful, Dependable, Upright, Lawful, Credible, Honest
Distrust	Lying, Deceitful, Dishonest, Unreliable, Devious, Unfair

Figure 2



Assessment of Pretrial Attitudes

After the IAT, participants were asked to complete the Pretrial Juror Attitude Questionnaire (PJAQ), designed to measure conviction proneness, system confidence, cynicism toward the defense, racial bias, social justice, and innate criminality (Lecci & Meyers, 2008). The PJAQ consists of 29 questions (e.g. Once a criminal, always a criminal; A defendant should be found guilty if 11 out of 12 jurors vote guilty) using a five-point Likert scale. Lecci and Meyers (2008) expand upon Kassin and Wrightsman's (1983) foundational Juror Bias Scale (JBS), which measures general pretrial juror biases. The PJAQ incorporates identical questions from the JBS, has greater predictive validity compared to the JBS, and addresses individual differences in legal attitudes related to how specific biases/beliefs influence how evidence is processed and how legal decisions are reached (Korva, Porter, O'Connor, Shaw, & Brinkle, 2013; Lecci & Meyers, 2008).

Explicit Attitudes and Demographics

Lastly, participants answered questions that were created to specifically assess explicit attitudes toward prosecutors and defense attorneys using a five-point Likert scale (e.g. I think prosecutors are trustworthy; Lawyers are ethical), personal opinions about the role of prosecutors and defense attorneys in society (e.g. Do you believe that the jobs of prosecutor and defense attorney are equally altruistic?), and hypothetical role-related questions (e.g. Do you believe you could be impartial if you were a juror in a criminal case?). Demographic information and attitudes related to the criminal legal system (e.g. Which of the following most accurately states your general belief regarding the death penalty?) were additionally collected. Higher scores for capital punishment beliefs indicate opposition to the death penalty, while higher scores for explicit attitudes toward prosecutors and defense attorneys indicate positive perceptions of said legal actors.

ANALYSES

Analyses were conducted using Stata software, and IAT results were generated from the analytical tool provided by iatgen's Shiny application, which utilizes IAT data cleaning methodology in line with the recommended literature (Carpenter et al., 2017). Certain information was provided directly from the Shiny application, including reliability and overall standardized difference score (d-score), which indicates direction of implicit preference (i.e. zero indicates no implicit preference, positive scores indicate faster responses when compatible pairings are present, and negative scores indicate faster responses when incompatible pairings are present). IAT results were uploaded, processed, and exported for further analysis in Stata.

The positive mean difference score from the overall Trust/Distrust IAT indicated that participants have stronger automatic associations for the "Prosecutor/Trust" pairing, as compared

to the “Defense Attorney/Trust” pairing ($M = 0.243$, $SD = 0.413$, $t(108) = 8.50$, $p = 0.000$).

Additionally, a standardized difference score was calculated for every participant, allowing for comparisons between groups (Carpenter et al., 2017). The estimated internal consistency of the IAT was obtained using split-half Spearman-Brown correction analyses and was found to be reliable ($r = 0.74$), with IAT reliabilities ranging from 0.70 to 0.90 on average. Although there were 233 observations in the dataset, IAT scores were only obtained for 208 participants. The missing data from these 25 participants occurred because of iatgen’s automated data cleaning procedures. Although these participants completed the IAT, their responses were omitted in line with established procedures by Greenwald et al. (2003). These procedures indicate that individual trials above 10,000ms or individual trials in which more than 10% of responses take the respondent less than 300ms should be omitted because these outliers will influence overall results and IAT statistical significance. No cases were dropped from the remaining analyses².

Given the binary nature of my dependent variable (guilty/not guilty), logistic analyses were conducted to test my hypotheses. Multicollinearity, assessed through correlation between independent variables, was not present. Therefore, the logit model equation is:

$$\begin{aligned} \text{Pr}(\text{Guilt}) = & \beta_0 + \beta_1(\text{iat dscore})_i + \beta_2(\text{atcls})_i + \beta_3(\text{bjw})_i \\ & + \beta_4(\text{explicit defense trust})_i + \beta_5(\text{explicit prosecutor trust})_i \\ & + \beta_6(\text{age})_i + \beta_7(\text{democrat})_i + \beta_8(\text{republican})_i + \beta_9(\text{female})_i \\ & + \beta_{10}(\text{death penalty})_i + \beta_{11}(\text{black})_i + \beta_{12}(\text{multiracial})_i + \beta_{13}(\text{latino})_i \\ & + \varepsilon_i \end{aligned}$$

where $\text{Pr}(\text{Guilt})$ reflects the predicted probability of rendering a guilty verdict in relation to the independent variables in the model. Variables in the model are interpreted in terms of their odds ratios (i.e. exponentiated coefficients). Odds ratios larger than one indicate a greater probability

² Because MTurk allows for direct approval or denial of a worker’s HIT, data were not dropped after collection. Only a small number of worker’s responses were rejected due to study completion in under 10 minutes, failure to pass attention check questions and/or pattern responses to questions, including when question order was rotated.

of rendering a guilty verdict, while odds ratios less than one indicate a greater probability of rendering a not guilty verdict. In addition to presenting the odds ratios of variables, coefficients and robust standard errors were obtained and are depicted in Table 1. Correlational analyses were utilized to determine the relationships between demographic variables and implicit and explicit attitudes. One-way analysis of variance (ANOVA) tests and t-tests were further run to understand the statistical significance of the relationship between implicit or explicit biases and each hypothesized demographic variable.

RESULTS

Demographic and attitudinal descriptive data are presented in Table 1. Results of the binomial logistic model are shown in Table 2.

Table 1

<i>Variable</i>	<i>n</i>	<i>%</i>
<i>Gender</i>		
Male	133	57
Female	100	43
 <i>Race</i>		
White	166	71
Black	21	9
American Indian or Alaskan Native	1	0.4
Asian	12	5
Native Hawaiian or Pacific Islander	0	0
Multi-racial	18	8
Hispanic/Latino	16	7
 <i>Political Party Affiliation</i>		
Strong Democrat	58	25
Not Strong Democrat	44	19
Independent Near Democrat	26	11
Independent	57	24
Independent Near Republican	17	7

Not Strong Republican	18	8
Strong Republican	13	6

Death Penalty Beliefs

Strongly in Favor	39	17
Moderately in Favor	62	27
Neither Favor or Oppose	43	18
Moderately Oppose	40	17
Strongly Oppose	49	21

Note: Percentages rounded

Age

<i>Mean</i>	<i>SD</i>	<i>Low</i>	<i>High</i>
38	11.42	21	78

Note: Above output was rounded. Age is listed separately from other demographic variables because it is measured continuously.

Table 2: Logistic Regression Results

Independent Variables	Estimated Coefficients (unstandardized errors in parentheses)	Odds Ratios (robust standard errors in parentheses)
<i>IAT d-score</i>	0.466 (0.478)	1.594 (0.772)
<i>ATCLS</i>	2.380** (0.604)	10.801** (7.092)
<i>BJW Others</i>	-0.079 (0.059)	0.924 (0.055)
<i>Explicit Defense Trustworthy</i>	-1.634** (0.523)	0.195** (0.125)

<i>Explicit Prosecution Trustworthy</i>	2.857** (0.608)	17.409** (11.104)
<i>Age</i>	-0.038* (0.018)	0.962* (0.018)
<i>Political Party Democrat</i>	0.457 (0.424)	1.579 (0.683)
<i>Political Party Republican</i>	-0.931 (0.639)	0.394 (0.266)
<i>Sex Female</i>	-1.019* (0.435)	0.361* (0.155)
<i>Death Penalty Beliefs</i>	-0.215 (0.158)	0.807 (0.122)
<i>Race Black</i>	1.543* (0.656)	4.680** (2.573)
<i>Race Multi-racial</i>	-0.591 (0.629)	0.554 (0.296)
<i>Race Hispanic/Latino</i>	2.942** (0.868)	18.946** (15.330)
Constant	-8.180** (1.940)	0.0003** (0.0005)
Observations	198	198
Pseudo R-squared	0.3257	0.3257

⁺ = significant at .10 level; * = significant at 0.05 level; ** = significant at .01 level

Results of the robust logistic regression indicate the overall model was statistically reliable in distinguishing between the three groups (Log pseudolikelihood = -87.51; Wald $X^2(13) = 46.51, p < 0.01$). Results show that numerous variables predict “guilty” verdicts, including ATCLS score³ ($p < 0.01$), explicit perceptions of prosecutors as trustworthy ($p < 0.01$), and self-identifying as Black ($p < 0.01$) or Hispanic/Latino⁴ ($p < 0.01$), as compared to self-identifying as White. Additionally, results indicate that explicit perceptions of defense attorneys as trustworthy ($p < 0.01$), increased age ($p < 0.05$), and being female ($p < 0.05$) predict “not guilty” verdicts. Results from the IAT and BJW, in addition to death penalty opinions, political party affiliation⁵, and self-identifying as multi-racial, do not appear to significantly predict verdicts.

A more in-depth analysis of these results yields interesting findings. In line with established ATCLS findings, higher average ATCLS scores predict guilty verdicts (i.e. for every one-unit increase in average ATCLS score, the odds ratio of a guilty verdict increases by 10.801)⁶. Higher overall ATCLS scores depict increased rates of confidence in the legal system, therefore logically translating into greater trust that the system is operating appropriately. This may be perceived as a “propensity to convict” or “bias in favor of the prosecution” (Martin & Cohn, 2004). As hypothesized, explicit reports of trust in prosecuting attorneys (e.g. “I think prosecutors are trustworthy”) are associated with guilty verdicts. Deviating from anticipated outcomes, participants who identified as Black or Hispanic/Latino were significantly more likely to render guilty verdicts as compared to White respondents. Although it is difficult to draw

³ ATCLS and BJW Others, as listed in the logistic regression output, refer to the average of these scales. The ATCLS variable represents 24 questions, answered using a 5pt Likert scale, that were averaged together. The BJW Others variable represents eight questions answered using a 7pt Likert scale that were averaged together.

⁴ White serves as the reference group to the variables Black, Multi-racial, and Hispanic/Latino.

⁵ Independent serves as the reference category for Democrat and Republican.

⁶ Interpretations for a singular independent variable from the model rely on the assumption that all other independent variables in the model are held constant.

conclusions from non-random samples—particularly with a low number of non-white respondents in each condition in this sample—it is nonetheless an interesting finding that should be explored further, particularly in light of the current political climate.

Two of the independent variables that predict not guilty verdicts are in line with hypothesized relationships. Participants explicitly reporting that they perceive defense attorneys as trustworthy are more likely to render not guilty verdicts. Additionally, compared to males, females are more likely to arrive at a not guilty verdict. Differing from hypothesized relationships, for every one-year increase in a person’s age, the odds of rendering a not guilty verdict increase by a factor of 0.962. Because the variable for age is somewhat skewed to the right, the distribution is not spread symmetrically, potentially influencing the significance of this variable.

IAT scores from the logistic regression model did not significantly predict verdicts. The IAT d-score variable ranged from values of -0.716 to 1.18, with positive scores indicating a Prosecutor/Trust pairing, negative scores indicating a Defense/Trust pairing, and scores of zero indicating “no preference.” The absolute value of the d-score was therefore obtained to understand if the negative directional relationship associated with implicit bias was influencing regression output. Identical logistic regression analyses were performed, substituting the IAT d-score variable with an absolute IAT d-score variable in the second logistic model. Although the robust p-value for the d-score variable slightly improved, and the significance of the other predictor variables remained unchanged, results were still statistically insignificant.

A comparison of results across conditions demonstrated an interesting finding: implicit bias is a statistically significant predictor of verdicts in the control condition but remained insignificant in the manipulated conditions. Results of these ordinary least squares regressions

are depicted in Table 3 (Dependent variable: verdict of guilty or not guilty) and verdicts across conditions are shown in Table 4. Given the small samples for each regression analyses, OLS multivariate regression is preferred over logistic regression analyses, given that logistic analyses are sensitive to sample size and should be used with larger samples. Logistic analyses were run, and, although the p-values varied across models, statistical significance of the variables did not change.

Table 3: OLS Regression Output by Condition

Independent Variables	<u>Control</u> Estimated Coefficients (robust standard errors)	<u>Prosecution Blinded</u> Estimated Coefficients (robust standard error)	<u>Defense Blinded</u> Estimated Coefficients (robust standard errors)
<i>IAT dscore</i>	0.304** (0.116)	0.078 (0.175)	-0.028 (0.125)
<i>ATCLS</i>	0.430** (0.134)	0.115 (0.166)	0.253+ (0.150)
<i>BJW Others</i>	-0.015 (0.012)	-0.019 (0.016)	-0.003 (0.024)
<i>Explicit Defense Trustworthy</i>	-0.243* (0.112)	-0.158 (0.147)	-0.137 (0.148)
<i>Explicit Prosecution Trustworthy</i>	0.363** (0.125)	0.520** (0.133)	0.372** (0.120)
<i>Age</i>	-0.004 (0.005)	-0.004 (0.005)	-0.004 (0.005)
<i>Political Party Democrat</i>	0.316** (0.107)	0.063 (0.155)	-0.046 (0.112)

<i>Political Party</i> <i>Republican</i>	-0.144 (0.169)	0.009 (0.210)	-0.254 (0.193)
<i>Sex</i> <i>Female</i>	-0.062 (0.103)	-0.291* (0.132)	-0.046 (0.113)
<i>Death Penalty</i> <i>Beliefs</i>	-0.058 ⁺ (0.034)	0.008 (0.057)	-0.028 (0.046)
<i>Race</i> <i>Black</i>	0.080 (0.149)	0.887** (0.190)	0.175 (0.158)
<i>Race</i> <i>Multi-racial</i>	-0.151 (0.144)	0.127 (0.210)	-0.202 ⁺ (0.120)
<i>Race</i> <i>Hispanic/Latino</i>	0.704** (0.205)	0.120 (0.181)	0.437 ⁺ (0.232)
Constant	-0.935* (0.420)	-0.499 (0.520)	-0.774 (0.483)
Observations	68	65	65
R-squared	0.4797	0.3619	0.4225

⁺ = significant at .10 level; * = significant at 0.05 level; ** = significant at .01 level

Table 4: Verdicts by Condition

Verdict	Control (n = 78)	Blinded Prosecution (n = 77)	Blinded Defense (n = 78)
<i>Not Guilty</i>	46 (59%)	47 (61%)	49 (63%)
<i>Guilty</i>	32 (41%)	30 (39%)	29 (37%)

Note: Percentages are rounded. Verdicts from the 25 cases iatgen automatically dropped are not included in this table.

The significance of the IAT d-scores in the control condition aligns with Kassin and Wrightsman's (1983) assertion⁷ that implicit bias informs jurors' interpretations and verdicts in ambiguous situations. Because the control condition contained the most ambiguity, it is logical that IAT scores predicted verdicts, and why a greater number of variables are statistically significant predictors of verdicts, as compared to the other conditions. IAT results do not appear to predict verdicts in either of the manipulated conditions. While the small sample sizes may be partially responsible, further investigation into mediating variables between implicit bias and verdicts need to be addressed (e.g. perceptions of expert credibility, interpretation of evidence). Interestingly, explicit attitudes regarding prosecutor's trustworthiness was a significant predictor across all three conditions, while the explicit defense attorney variable was only significant in the control condition. Future approaches should incorporate additional explicit questions to better explain this relationship.

Correlational analyses were conducted to determine if hypothesized relationships existed between demographic variables and implicit and explicit biases⁸. Table 5 depicts the correlation between demographics and implicit biases, while Tables 6 and 7 depict the correlation between these same variables and explicit biases. Results from one-way ANOVA tests⁹ found that death penalty beliefs and race were not significantly associated with IAT scores (i.e. implicit bias)¹⁰.

⁷ This assertion is based on the liberation hypothesis in which jurors are "liberated" from decision-making based on evidence in ambiguous cases (Kalven & Zeisel, 1966). Therefore, extra-legal factors, attitudes, and biases may influence decision-making and determinations of defendant guilt.

⁸ Sample sizes vary for each correlation analysis due to iatgen's automatic exclusion of 25 cases and/or unreported participant data.

⁹ Because "age" is a continuous variable, it is inappropriate to include in an ANOVA. Results from the correlational analyses are therefore relied upon to see the relationship between age and the dependent variable of interest (Tables 4-6). Additionally, t-tests were used to understand the association between "sex" and the dependent variables. Results from all t-tests with the variable "sex" were not statistically significant.

¹⁰ Identical statistical analyses were performed using the absolute value of the IAT d-score, but results were not statistically significant and are therefore not discussed.

Table 5**Correlation Analysis between Demographics and IAT d-scores**

	1.	2.	3.	4.	5.	6.
1. IAT d-score	1	-0.11	0.00	-0.11	-0.09	-0.05
2. Age		1	0.12 ⁺	0.24 ^{**}	-0.03	-0.11 ⁺
3. Political Party			1	0.15 [*]	-0.15 [*]	-0.02
4. Sex				1	0.11 ⁺	0.01
5. Death Penalty Belief					1	0.02
6. Race						1

N = 208; ⁺ = significant at .10 level; * = significant at 0.05 level; ** = significant at .01 level

Table 6**Correlation Analysis between Demographics and Explicit Defense Attitudes**

	1.	2.	3.	4.	5.	6.
1. Explicit Defense	1	-0.04	0.21 ^{**}	-0.05	-0.21 ^{**}	0.15 [*]
2. Age		1	0.12 ⁺	0.24 ^{**}	-0.03	-0.11 ⁺
3. Political Party			1	0.15 [*]	-0.15 [*]	-0.02
4. Sex				1	0.11 ⁺	0.01
5. Death Penalty Belief					1	0.02
6. Race						1

N = 230; ⁺ = significant at .10 level; * = significant at 0.05 level; ** = significant at .01 level

Table 7**Correlation Analysis between Demographics and Explicit Prosecution Attitudes**

	1.	2.	3.	4.	5.	6.
1. <i>Explicit Prosecution</i>	1	-0.09	0.19**	-0.08	-0.40**	0.13*
2. <i>Age</i>		1	0.12 ⁺	0.24**	-0.03	-0.11 ⁺
3. <i>Political Party</i>			1	0.15*	-0.15*	-0.02
4. <i>Sex</i>				1	0.11 ⁺	0.01
5. <i>Death Penalty Belief</i>					1	0.02
6. <i>Race</i>						1

N = 227; ⁺ = significant at .10 level; * = significant at 0.05 level; ** = significant at .01 level

One-way ANOVA tests were run separately for explicit biases toward the prosecution and explicit biases toward the defense. From the defense-only ANOVAs, results indicated that race was not significantly associated with explicit attitudes about defense attorneys. Political party affiliation ($F(227,2) = 5.66, p < 0.01$) and death penalty beliefs ($F(225,4) = 3.44, p < 0.01$) were found to have statistically significant associations with explicit attitudes. A post-hoc pairwise comparison of means with equal variances (i.e. Tukey test) determined that Republicans were more likely than Independents to see defense attorneys as trustworthy ($p < 0.01$), and Republicans were more likely than Democrats to see defense attorneys as trustworthy ($p < 0.05$).

Two statistically significant relationships were discovered between death penalty opinions and explicitly reported attitudes about defense attorneys: those who strongly oppose the death penalty and those who moderately favor the existence of capital punishment ($p < 0.10$), and those who strongly oppose the death penalty and those who strongly favor capital punishment ($p < 0.10$). Participants who moderately favor the death penalty were less likely to

see the defense as trustworthy, as compared to those who strongly oppose the death penalty. Similarly, those who strongly favor the death penalty were less likely to view defense attorneys as trustworthy.

Similarly, from the prosecution-only ANOVAs, race was not associated with explicit attitudes—only political party affiliation ($F(224,2) = 5.99, p < 0.01$) and death penalty beliefs ($F(222,4) = 11.18, p < 0.01$) were statistically significantly related to explicit attitudes about prosecutors. Results from a post-hoc Tukey test found that Republicans were more likely than Independents to see prosecutors as trustworthy ($p < 0.01$), and Republicans were more likely to see prosecutors as trustworthy compared to Democrats ($p < 0.01$). Post-hoc analysis of death penalty beliefs indicated that participants who reported specific beliefs about the death penalty significantly differed on their explicit perceptions of prosecutor trustworthiness. Specifically, those who neither favor or oppose capital punishment were less likely to see prosecutors as trustworthy as compared to those strongly in favor of capital punishment ($p < 0.05$). This relationship similarly existed between those who: moderately oppose vs. strongly favor ($p < 0.01$), strongly oppose vs. strongly favor ($p < 0.01$), neither favor or oppose vs. moderately favor ($p < 0.05$), moderately oppose vs. moderately favor ($p < 0.01$), and strongly oppose vs. moderately favor ($p < 0.01$).

DISCUSSION

Results from this study indicate that explicit biases and certain demographic variables appear to be strongly associated with verdicts in trial scenarios, as compared to implicit biases. However, in particularly ambiguous cases, implicit biases of legal actor trustworthiness appear to inform verdicts. This indicates that reliance on explicit attitudes and demographic variables may not be adequate predictors of individual juror outcomes in cases in which the evidence for both

prosecution and defense is particularly ambiguous. While these findings may be informative for legal actors during voir dire in terms of what questions to ask potential jurors, these results more broadly contribute to the literature critiquing the current state of jury selection and the false notion of impartial jurors.

As hypothesized, participants were more likely to implicitly view prosecutors as trustworthy and defense attorneys as untrustworthy. However, explicit attitudes appear to be better predictors of verdicts as compared to implicit biases. The small sample size of this study, particularly given that implicitly biased individuals were randomly assigned to one of three trial scenarios, may be constraining the significance of results.

Demographics and implicit attitudes toward prosecutors and defense attorneys did not align as hypothesized. No significant relationships existed between IAT results and demographic variables. Explicit attitudes toward legal actors and demographics aligned somewhat better with hypothesized relationships. As predicted, those who favor capital punishment were less likely to report that defense attorneys were trustworthy, as compared to those who oppose the death penalty. Although Republicans were more likely than both Independents and Democrats to see prosecutors as trustworthy, interestingly, Republicans were also more likely than Independents and Democrats to see defense attorneys as trustworthy. Given the current U.S. political climate, it may also be reasonable to consider that perceptions of traditional party affiliations are inadequate and/or individuals are identifying themselves as Independents at a greater rate.

CONCLUSION

Although studies have found that jurors harbor a range of biases, little has been done to amend aspects of jury selection and trials by jury. This study sought to address another avenue of concern for defendants seeking an impartial trial by one's peers: how individual perceptions of

the relative trustworthiness of prosecutors and defense attorneys are related to verdicts. Uniquely employing an IAT to measure implicit legal actor trust and comparing implicit attitudes with explicitly reported perceptions yielded interesting findings. When confronted with an ambiguous case, jurors may rely on both implicit and explicit attitudes toward legal actors. Therefore, those jurors who harbor positive perceptions of prosecutors and untrustworthy perceptions of defense attorneys are more likely to rely on inherent legal actor biases in ambiguous situations. Rather than recognizing that there is insufficient evidence to determine that the defendant is guilty beyond a reasonable doubt, these jurors may unconsciously arrive at a conclusion based on inherent biases.

Despite the critique that psychological research lacks ecological validity (i.e. experimental research does not translate into real world settings), it remains important to empirically address the unknown. The present study explores unanswered questions concerning if jurors harbor preexisting biases about legal actor trustworthiness and if such biases influence verdicts and impartiality. While courtroom studies involving actual jurors overcome some concerns about empirical studies, for the purposes of this research, it would be difficult to discern if and how characteristics of attorneys influenced jurors' perceptions. By controlling for various characteristics of attorneys, this research specifically uncovers the impact of implicit and explicit perceptions of prosecutor and defense attorney trustworthiness on juror decision-making.

Though these findings are noteworthy, it is important to comment on the limitations of this study. Despite an adequate overall sample size, by creating three separate conditions, the number of participants across conditions is small. Further, because the IAT guidelines dictate that certain outlier responses be excluded from analyses, oversampling should be considered to preemptively address this inevitable loss of data. Additionally, all participants were recruited

using the online platform MTurk. These participants may share a commonality that is unobservable, but nonetheless influential. A larger, more representative sample of jury-eligible participants may better serve the purpose of this study.

Regarding the limitations of the case vignettes, it is not possible to determine if jurors would exhibit stronger biases when presented with demographic characteristics of legal actors. Because this research is interested in specifically addressing how biases about prosecutors and defense attorneys influence verdicts, excluding racial and gender characteristics of all individuals within the trial scenario may have resulted in a conservative estimate of bias toward legal actors. Using a race IAT in conjunction with the previously discussed Trust/Distrust IAT and adding further manipulations to the case vignettes may demonstrate increased variability of perceptions of legal actors and verdicts.

Psycho-legal research has additionally established that jurors often fail to comprehend instructions and inappropriately factor evidence into their decisions (Lynch & Haney, 2009). This study was unable to determine if participants accurately understood the evidence presented. In particular, the ambiguous nature of the case and the presentation of compromising evidence presents increased opportunities for participant misunderstanding which may confound the predictive capacity of the IAT results. Further, by incorporating perceptions of expert credibility and perceived strength of evidence, future analyses may be able to address if participants' perceptions of evidence, legal actors, and expert credibility throughout trial proceedings impacts verdicts and/or are related to implicit and explicit biases. While findings from this study are not comprehensive, this research uncovers how the role of both unconscious and conscious bias influences verdicts.

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APPENDIX

Instructions and Background Information for All Three Conditions

Instructions:

You will read abbreviated information from a felony murder trial in which the evidence of interest is a recovered partial latent fingerprint on a knife left near the scene of the crime. The prosecution's expert witness, a fingerprint analyst, believes the print belongs to Alex Davis, the defendant. The defense's expert witness, a fingerprint analyst, believes the print belongs to another person. Both analysts used Automatic Fingerprint Identification System (AFIS) databases to generate lists of candidates whose fingerprints were similar to the partial fingerprint recovered from the knife found near the scene of the crime. Throughout the following description of the case, you will be asked to provide your perceptions and opinions of the case.

Background Information:

- At 11 p.m. on the night of August 6th, 2017, police responded to a call requesting assistance at a gas station where an employee was found unresponsive. The employee had been stabbed and bled to death at the scene.
- There were no witnesses to the crime or security footage. A knife was recovered near the crime scene and was determined to be the murder weapon.
- Police questioned locals who reported seeing an individual wearing all black hanging around the gas station at night for the last few weeks. Based upon this information, police questioned an individual, Alex Davis, because Alex was wearing all black and was walking near the gas station where the murder occurred.
- Alex was brought in for questioning and became the primary suspect because Alex's alibi was questionable.
- A forensic examination linked Alex's fingerprint to the partial print on the knife recovered near the crime scene. Based upon this evidence, police arrested and charged Alex with felony murder.
- Two theories exist in the case against the defendant, Alex Davis:
 - o The prosecution argues that Alex intended to rob the gas station and stabbed the employee when they did not comply. The evidence linking Alex to the crime includes: a recovered partial latent fingerprint, a questionable alibi, and reported sightings of an individual loitering outside the gas station whose clothing description matched Alex's clothing.
 - o The defense argues that the recovered partial latent fingerprint does not belong to Alex. A privately-hired forensic expert disputes the state analyst's finding that links Alex's fingerprint to the recovered partial latent print on the knife. An unknown suspect is argued to have committed the crime. The defense argues that the state is prosecuting Alex for felony murder because police were committed to pursuing Alex early on during the investigation.

Control Vignette

Summary of prosecution's evidence:

- Alex Davis does not have an alibi for the night of the murder that can be verified as being true. A friend of Alex claims that Alex was at their house during the time of the murder. However, the friend's report of the timeline of Alex's visit changed upon further questioning.
- The evidence connecting Alex to the crime is a partial latent fingerprint on a knife recovered near the scene of the crime, a questionable alibi, and reported sightings of an individual loitering outside the gas station whose clothing description matched Alex's clothing.
- Using AFIS to search the recovered partial fingerprint on the knife, the expert fingerprint analyst generated a list of candidates whose fingerprints were similar to the recovered partial print. After careful analysis, the analyst concluded that, in their expert opinion, the partial latent print on the knife and the fingerprint in AFIS have corresponding details.
- The degree of similarity between prints is far-greater compared to the other candidates whose fingerprints were generated through AFIS. Further, the candidates AFIS generated were all excluded as suspects because they had alibis which were substantiated.
- Without being able to validate Alex's true whereabouts and the state analyst's opinion that the partial print on the knife is highly similar to Alex's fingerprint, the prosecution argues that Alex is responsible for the death of the employee.
- Taking this evidence into account, the prosecution argues that Alex Davis should be charged with felony murder.

Summary of defense's evidence:

- Using a different AFIS database than the prosecution used to search the recovered partial latent fingerprint on the knife, the expert analyst compared the partial print to a list of candidates who were determined to have similar fingerprint features. Although Alex was a candidate due to fingerprint similarity, the expert does not believe that Alex's fingerprints are highly similar to the partial print recovered on the knife.
- The expert analyst believes that the recovered partial print belongs to an individual whose fingerprints are not in the AFIS database. The remainder of the candidates generated through AFIS were cleared as persons of interest following investigations into their whereabouts at the time of the crime.
- Alex was unnecessarily targeted from the beginning of the criminal investigation. The commitment to pursuing Alex as the primary suspect prevented law enforcement and the prosecution from considering other possible suspects. The defense argues that Alex cannot be found guilty beyond a reasonable doubt and cannot be charged with felony murder.

After considering the prosecution and defense's arguments, do you find the defendant, Alex Davis, guilty or not guilty of the charge of felony murder?

- Guilty
- Not guilty

Presence of a Blind Expert for the Defense Condition

Summary of prosecution's evidence:

- Alex Davis does not have an alibi for the night of the murder that can be verified as being true. A friend of Alex claims that Alex was at their house during the time of the murder. However, the friend's report of the timeline of Alex's visit changed upon further questioning.
- The evidence connecting Alex to the crime is a partial latent fingerprint on a knife recovered near the scene of the crime, a questionable alibi, and reported sightings of an individual loitering outside the gas station whose clothing description matched Alex's clothing.
- Using AFIS to search the recovered partial fingerprint on the knife, the expert fingerprint analyst generated a list of candidates whose fingerprints were similar to the recovered partial print. After careful analysis, the analyst concluded that, in their expert opinion, the partial latent print on the knife and the fingerprint in AFIS have corresponding details.
- The degree of similarity between prints is far-greater compared to the other candidates whose fingerprints were generated through AFIS. Further, the candidates AFIS generated were all excluded as suspects because they had alibis which were substantiated.
- Without being able to validate Alex's true whereabouts and the state analyst's opinion that the partial print on the knife is highly similar to Alex's fingerprint, the prosecution argues that Alex is responsible for the death of the employee.
- Taking this evidence into account, the prosecution argues that Alex Davis should be charged with felony murder.

Summary of defense's evidence:

- The state's expert witness was told by the prosecution that Alex was a person of interest in the investigation into the murder of the gas station employee. The defense argues that, by knowing in advance that Alex was a main suspect, the state's analyst conducted an inaccurate examination because the analyst was influenced by information about the criminal investigation.
- The expert analyst hired by the defense took careful steps to avoid making an examination influenced by information about the criminal investigation. A case manager model of forensic investigation was used, where the case manager determined what types of examinations needed to be conducted by the analyst. The analyst was tasked with conducting the examination and did not know that Alex was the main suspect in the investigation.
- Using a different AFIS database than the prosecution used to search the recovered partial latent fingerprint on the knife, the expert analyst compared the partial print to a list of candidates who were determined to have similar fingerprint features. Although Alex was a candidate due to fingerprint similarity, the expert does not believe that Alex's fingerprints are highly similar to the partial print recovered on the knife.
- The expert analyst believes that the recovered partial print belongs to an individual whose fingerprints are not in the AFIS database. The remainder of the candidates generated through AFIS were cleared as persons of interest following investigations into their whereabouts at the time of the crime.

- Alex was unnecessarily targeted from the beginning of the criminal investigation. The commitment to pursuing Alex as the primary suspect prevented law enforcement and the prosecution from considering other possible suspects. The defense argues that Alex cannot be found guilty beyond a reasonable doubt and cannot be charged with felony murder.

After considering the prosecution and defense's arguments, do you find the defendant, Alex Davis, guilty or not guilty of the charge of felony murder?

- Guilty
- Not guilty

Presence of a Blind Expert for the Prosecution Condition

Summary of defense's evidence:

- Using a different AFIS database than the prosecution used to search the recovered partial latent fingerprint on the knife, the expert analyst compared the partial print to a list of candidates who were determined to have similar fingerprint features. Although Alex was a candidate due to fingerprint similarity, the expert does not believe that Alex's fingerprints are highly similar to the partial print recovered on the knife.
- The expert analyst believes that the recovered partial print belongs to an individual whose fingerprints are not in the AFIS database. The remainder of the candidates generated through AFIS were cleared as persons of interest following investigations into their whereabouts at the time of the crime.
- Alex was unnecessarily targeted from the beginning of the criminal investigation. The commitment to pursuing Alex as the primary suspect prevented law enforcement and the prosecution from considering other possible suspects. The defense argues that Alex cannot be found guilty beyond a reasonable doubt and cannot be charged with felony murder.

Summary of prosecution's evidence:

- Alex Davis does not have an alibi for the night of the murder that can be verified as being true. A friend of Alex claims that Alex was at their house during the time of the murder. However, the friend's report of the timeline of Alex's visit changed upon further questioning.
- The evidence connecting Alex to the crime is a partial latent fingerprint on a knife recovered near the scene of the crime, a questionable alibi, and reported sightings of an individual loitering outside the gas station whose clothing description matched Alex's clothing.
- The defense's expert witness was told by the defense that Alex was a person of interest in the investigation into the murder of the gas station employee. The prosecution argues that, by knowing in advance that Alex was a main suspect, the defense's privately-hired analyst conducted an inaccurate examination because the analyst was influenced by information about the criminal investigation.
- The expert analyst hired by the state took careful steps to avoid making an examination influenced by information about the criminal investigation. A case manager model of forensic investigation was used, where the case manager determined what types of examinations needed to be conducted by the analyst. The analyst was tasked with conducting the examination and did not know that Alex was the main suspect in the investigation.
- Using AFIS to search the recovered partial fingerprint on the knife, the expert fingerprint analyst generated a list of candidates whose fingerprints were similar to the recovered partial print. After careful analysis, the analyst concluded that, in their expert opinion, the partial latent print on the knife and the fingerprint in AFIS have corresponding details.
- The degree of similarity between prints is far-greater compared to the other candidates whose fingerprints were generated through AFIS. Further, the candidates AFIS generated were all excluded as suspects because they had alibis which were substantiated.

- Without being able to validate Alex's true whereabouts and the state analyst's opinion that the partial print on the knife is highly similar to Alex's fingerprint, the prosecution argues that Alex is responsible for the death of the employee.
- Taking this evidence into account, the prosecution argues that Alex Davis should be charged with felony murder.

After considering the prosecution and defense's arguments, do you find the defendant, Alex Davis, guilty or not guilty of the charge of felony murder?

- Guilty
- Not guilty