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## RATE EXPECTATIONS: JURORS AND THE SELF-REINFORCING EFFECT OF CONVICTION RATES

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**ABSTRACT.** We examined whether jurors who know that a prosecutor has a high conviction rate are more inclined to convict a defendant than jurors who know that the prosecutor has a low conviction rate. Using simulated criminal cases, we conducted two experimental studies with jury-eligible participants. Study 1 ( $N = 200$ ) tested whether information about prior conviction rates (high or low) affected jurors' estimations of the probability of guilt in the context of a robbery. Study 2 ( $N = 205$ ) used another criminal trial context (murder) and another dependent variable (dichotomous guilty/not guilty verdicts). Study 2 also incorporated jury instructions on the reasonable doubt standard and included a control condition in which no information regarding the conviction rate was provided. In both studies, jurors in the high conviction rate treatment were significantly more likely to convict the accused than jurors in the low conviction rate treatment. When jurors are aware of a prosecutor's prior conviction rates, a self-reinforcing cycle may arise in which conviction rates determine conviction rates.

### I INTRODUCTION

Decades of research have demonstrated that the decisions of jurors and judges are not immune to disruptive influences such as their

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political beliefs,<sup>1</sup> ethnic identity,<sup>2</sup> emotions<sup>3</sup> and cognitive biases.<sup>4</sup> One of the disruptions that have typically been found to affect judicial outcomes is a decision maker's exposure to salient but legally irrelevant facts. Wistrich and colleagues,<sup>5</sup> for example, examined judges' propensity to use inadmissible evidence in a series of civil and criminal cases and found that judges are not able to disregard this information, regardless of the years of experience they have.<sup>6</sup> Other scholars have found that presenting character evidence of the accused may also lead judges and jurors to make faulty attributions at trial.<sup>7</sup> Logically, all these findings have fuelled the debate about the legitimacy of the criminal justice system. In the past decades, criminologists have become more interested in the concept of legitimacy – the recognition by citizens of the rightness of the authority of criminal justice officials – and the consequences of this (presence or lack of) recognition for behaviour. A substantial amount of empirical research has been conducted. This work has shown that criminal justice agencies perceived to be legitimate can count on “wellsprings

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<sup>1</sup> Shamena Anwar, Patrick Bayer & Randi Hjalmarsson, *Politics in the courtroom: Political ideology and jury decision making*, 17(3) JOURNAL OF THE EUROPEAN ECONOMIC ASSOCIATION 834–875 (2019); Lee Epstein, William M. Landes & Richard A. Posner, *The Behavior of federal judges: A theoretical and empirical study of rational choice* (2013).

<sup>2</sup> Oran Gazal-Ayal & Raanan Sulitzeanu-Kenan, *Let My People Go: Ethnic In-Group Bias in Judicial Decisions—Evidence from a Randomized Natural Experiment*, 7(3) JOURNAL OF EMPIRICAL LEGAL STUDIES 403–428 (2010); Tara L. Mitchell, Ryann M. Haw, Jeffrey E. Pfeifer & Christian A. Meissner, *Racial bias in mock juror decision-making: A meta-analytic review of defendant treatment*, 29(6) LAW AND HUMAN BEHAVIOR 621–637 (2005).

<sup>3</sup> Andrew J. Wistrich, Jeffrey J. Rachlinski & Chris Guthrie, *Heart Versus Head: Do Judges Follow the Law or Follow Their Feelings*, 93 TEXAS LAW REVIEW 855–923 (2014); Neal Feigenson & Jaihyun Park, *Emotions and attributions of legal responsibility and blame: A research review*, 30(2) LAW AND HUMAN BEHAVIOR 143–161 (2006).

<sup>4</sup> Chris Guthrie, Jeffrey J. Rachlinski & Andrew J. Wistrich, *The “hidden judiciary”: an empirical examination of executive branch justice*, 58 DUKE LAW JOURNAL 1477–1530 (2009); Steve Charman, Amy Douglass Bradfield & Alexis Mook, *Cognitive bias in legal decision making*, PSYCHOLOGICAL SCIENCE AND THE LAW 30–53 (2019).

<sup>5</sup> Wistrich, Rachlinski & Guthrie, *supra* note 3.

<sup>6</sup> Guthrie, Rachlinski & Wistrich, *supra* note 4.

<sup>7</sup> Goran Dominioni, Pieter T.M. Desmet & Louis T. Visscher, *Judges Versus Jurors: Biased Attributions in the Courtroom*, 52 CORNELL INTERNATIONAL LAW JOURNAL 235–265 (2019).

of voluntarism” (Reus-Smit: 169), which stimulate compliance and support for legal officials. On the other hand, authorities that persistently fail to take into account citizens’ interests and concerns face the possibility of demise, disempowerment or decline into irrelevance (Reus-Smit, 166).

The research described above shows that judges and jurors are often influenced by legally irrelevant information and make different decisions based on that information. In this article, we hypothesize that a similar influence can be observed for jurors who are aware of the prior conviction rate of a prosecutor. Conviction rates are an important part of prosecutors’ reputation. In the United States, for example, conviction rates are often published in the media and touted by prosecutors or denounced by their adversaries during election time.<sup>8</sup> We hypothesize when jurors know that the prosecutor has a high conviction rate, they will be more inclined to convict a defendant than when this prosecutor has a low conviction rate. In other words, we hypothesize that high or low conviction rates can lead to a self-reinforcing cycle: when jurors believe that a prosecutor has a high (or low) prior conviction rate they will behave in such a way that this belief will be fulfilled and the conviction rate maintained. This can be undesirable: in principle every case should be judged on its merits, and a prosecutor’s conviction rate should never have an effect on a juror’s decision process. According to that creed the same case should have the same likelihood of conviction regardless of whether the prior conviction rate of the prosecutor is high or low.

In order to test our hypothesis, we conducted two experiments to analyze whether a juror’s knowledge of the prosecutor’s conviction rate influences the outcome of a criminal case. Our findings show that

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<sup>8</sup> See e.g. Matt Fountain, SLO County criminal trial defendants walk free almost 40 percent of the time. *The Tribune* (2018, March 10). Retrieved from <https://www.sanluisobispo.com/news/local/article204436099.html>; Ben Kochman, Here’s where you want to go to win a trial in NYC, *New York Post* (2017, July 22). Retrieved from <https://nypost.com/2017/07/22/the-bronx-has-the-lowest-conviction-rate-in-the-city/>; Andrew Novak, It’s Too Dangerous to Elect Prosecutors, *The Daily Beast* (2015, August 24). Retrieved from <https://www.thedailybeast.com/its-too-dangerous-to-elect-prosecutors>; Wendy Liberatore, Saratoga County DA Heggen announces campaign, *Times Union* (2018, February 22). Retrieved from <https://www.timesunion.com/news/article/Saratoga-County-DA-Heggen-announces-campaign-12633913.php>.

the same case with the same evidence is judged differently depending on the prosecutor's prior conviction rate. We observe this across two different trial contexts, and even when explicit juror instructions on the reasonable doubt standard are provided.

Our results raise some important questions. For example, if the conviction rate in one period artificially affects the conviction rate in a subsequent period, one may wonder whether this can influence the type of cases a strategic prosecutor decides to pursue, as well as his or her choices in the plea-bargaining process. Also, the question arises of whether it could be possible that the variability in jurors' priors<sup>9</sup> that previous studies have found, may be partially explained by different conviction rates in the respondents' jurisdictions.

We proceed as follows. In section II, we provide a brief overview of the existing literature on conviction rates, discuss the several ways in which jurors can become aware of conviction rates and look into the cognitive processes which may influence jurors. Section III contains the two experiments which both use a vignette approach in which a hypothetical criminal case is provided which only differs in terms of the conviction rate that was conveyed. Section IV discusses some important implications and limitations of our study, and offers some potential avenues for future research. Section V concludes.

## II CONVICTION RATES

### 2.1 Existing literature

Conviction rates<sup>10</sup> vary significantly in time, as well as between countries, states and state prosecutorial districts. They vary from extremely low (e.g. 10 to 20 percent in some Indian states<sup>11</sup> to extremely high (e.g. in Japan the conviction rate is close to 100 percent).<sup>12</sup> In the United States, the jury trial conviction rate and the bench trial conviction rate have followed different patterns. In the period 1946–1955, federal judges convicted at an 86% rate, but in the period 1993–2002, they convicted only 54 percent of the time, and

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<sup>9</sup> I.e. their judgments before any evidence is given.

<sup>10</sup> More specifically, we look at trial conviction rates. The trial conviction rate is the ratio of cases tried with a conviction as a result to all cases tried.

<sup>11</sup> Divya Shukla, *An Analytical Study of Decreasing Rate of Conviction in India*, INTERNATIONAL JOURNAL OF LAW 91–94 (2018).

<sup>12</sup> J. Mark Ramseyer & Eric B. Rasmusen, *Why Is the Japanese Conviction Rate So High?*, 30(1) JOURNAL OF LEGAL STUDIES 53–87 (2001).

during some of the years in this period the conviction rate was slightly below 50 percent. If one takes into account dismissals, conviction rates may even drop well below 50 percent. For example, in 1995, U.S. federal defendants pleaded not guilty in 11,877 cases. Courts acquitted them or dismissed the charges in 8,207 cases, which implies a contested conviction rate of just over 30 percent.<sup>13</sup> Juries on the other hand have followed the opposite trend from judges, with relatively low conviction rates in the former period and larger ones in the latter period.<sup>14</sup> The variability in conviction rates across districts is also large. For example, for the state of New Mexico in the period 2013–2014, jury trial conviction rates varied from 42 percent (District 4: Mora, San Miguel and Guadeloupe) to 100 percent (District 10: Harding, Quay and De Baca).<sup>15</sup> Even within cities, the variability in conviction rates is high. For example, in New York City, Bronx prosecutors obtained convictions in 49 percent of felony trials between January 2015 and May 2017, which is 18 percent behind the overall city rate.<sup>16</sup>

Many elements can influence a prosecutor's conviction rate. The quality of the prosecutor, his or her choice of which cases to prosecute, the effort that is put into these cases, and the pro-conviction biases of judges and juries could all play a vital role. The literature has examined several institutional characteristics that may also affect conviction rates. Ramseyer and Rasmusen<sup>17</sup> for example examined whether the extremely high conviction rate of 99% in Japan is more likely to be explained by biased incentives of judges to convict, or by case selection due to low prosecutorial budgets.<sup>18</sup> Conviction rates might be high because judges dutifully convict everyone prosecuted, guilty or not. Or they might be high because prosecutors prosecute only the guilty, and judges then duly convict. Given that independent evidence of the guilt of the accused is generally not available, Ram-

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<sup>13</sup> ADMINISTRATIVE OFFICE OF THE U.S. COURTS, JUDICIAL BUSINESS OF THE U.S. COURTS, Table D-4 (1995). See also Ramseyer & Rasmusen, *supra* note 12.

<sup>14</sup> Andrew D. Leipold, *Why Are Federal Judges So Acquittal Prone?*, 83 WASHINGTON UNIVERSITY LAW REVIEW 151–227 (2005).

<sup>15</sup> See Maggie Shepard, *Dueling over conviction rates*, *Albuquerque Journal* (2015, September 13). Retrieved from <https://www.abqjournal.com/643453/conviction-rate-numbers-depend-on-the-agency.html>.

<sup>16</sup> Kochman, *supra* note 8.

<sup>17</sup> Ramseyer & Rasmusen, *supra* note 12.

<sup>18</sup> *Ibidem*.

seyer and Rasmusen<sup>19</sup> observed indirect evidence in the fact that (a) Japanese prosecutors are chronically understaffed compared to, for example, their U.S. counterparts,<sup>20</sup> and that (b) Japanese judges do not seem to face significantly skewed incentives to convict.<sup>21</sup> This indirect evidence led the authors to conclude that the high Japanese conviction rates reflect case selection due to low prosecutorial budgets.

Rasmusen, Raghav and Ramseyer<sup>22</sup> empirically examined the relationship between prosecution rates, conviction rates and budgets, using U.S. data drawn from county-level crime statistics and a survey of all state prosecutors by district. They constructed two models of prosecutorial behaviour: one in which the prosecutor aims to maximize criminal sentences (the “social planner model”), and one in which the prosecutor balances that goal against personal objectives and against the goal of high conviction rates (the “political model”). The social planner model predicts that an increase in the budget increases effort on existing cases as well as the prosecution rate, and could either increase or decrease the conviction rate. In the political model however, both the conviction rate and the prosecution rate might either rise or fall with the budget.

The difference in the predicted effect for the prosecution rate allowed the authors to test both models. Moreover, although the conviction rate may either rise or fall with increasing budgets in both models, one may expect the conviction rate to rise more (or fall less) in districts where the political model is more likely to apply because prosecutors are elected rather than appointed or where they are elected for shorter terms. The authors’ empirical analysis failed to support the social planner model, but did support the political model.

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<sup>19</sup> Ibidem.

<sup>20</sup> Consequently, Japanese prosecutors lack the time to prosecute any but a small fraction of the suspects forwarded to them by the police. Rational prosecutors may then prefer to prosecute only the most obviously guilty rather than waste their time with dubious cases.

<sup>21</sup> Although judges who acquit seem more likely to suffer a career penalty than those who convict, the acquittals that generate punishment are cases where judges sided with opposition parties in politically charged cases or cases where the judge may have interpreted the law wrongly, but not cases where the judge decided that the prosecutors brought charges against the wrong person (see Ramseyer, & Rasmusen, 2001).

<sup>22</sup> Eric Rasmusen, Manu Raghav & Mark Ramseyer, *Convictions versus conviction rates: the prosecutor’s choice*, 11(1) AMERICAN LAW AND ECONOMICS REVIEW, 47–78 (2009).

While prosecution rates did not have any clear correlation with budgets, conviction rates did rise with budgets and were higher where prosecutors are elected rather than appointed. The latter finding suggests that high conviction rates may be believed to have an electoral reward and that prosecutors, especially elected ones, may have incentives to prosecute only the strongest cases, in order to obtain high conviction rates.

Although conviction rates are widely acknowledged to be poor tools for self-assessment,<sup>23</sup> Gordon and Huber<sup>24</sup> argued that it can be rational for voters to use a prosecutor's conviction rate as a performance measure where information is asymmetric.<sup>25</sup> There is unfortunately not a lot of discussion in the literature on the responses of jurors to conviction rates (which is the central focus of this article), but there are some studies dealing with the question of how judges react to conviction rates. For example, Howard, Lazarus and Glas<sup>26</sup> argued that the reduction in federal judges' conviction rates since the 1980s is partly attributable to the Sentencing Reform Act of 1984 and the resulting binding sentencing guidelines. When faced with such guidelines, judges sometimes try cases in which they believe the defendant to be guilty, but at the same time feel the legally mandated sentence is too harsh given the circumstances. If judges (sometimes) choose to acquit these defendants, aggregate conviction rates could drop.<sup>27</sup> They find evidence for this using data on federal bench trials from 1970 to 2005.

## 2.2 *Conviction rates and Jurors' knowledge*

There are many ways in which jurors can become aware of the prosecutor's prior conviction rates. First of all, prosecutors themselves have various motivations for publicizing their conviction

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<sup>23</sup> David A. Sklansky, *The Problem with Prosecutors*, 1 ANNUAL REVIEW OF CRIMINOLOGY 451–469 (2018).

<sup>24</sup> Sanford C. Gordon & Gregory A. Huber, *Citizen Oversight and the Electoral Incentives of Criminal Prosecutors*, 46 AMERICAN JOURNAL OF POLITICAL SCIENCE 334–351 (2002).

<sup>25</sup> Their model shows that always re-electing prosecutors, who obtain convictions, is an optimal voter strategy, and that even voters who most fear wrongful convictions should reward success at trial.

<sup>26</sup> Robert M. Howard, Jeffrey Lazarus & Jeffrey M. Glas, *The Unintended Consequences of Congressional Action: Judicial Conviction Rates after Congressional Sentencing Reform*, 36(4) JUSTICE SYSTEM JOURNAL 304–322 (2015).

<sup>27</sup> *Ibidem*.

rates.<sup>28</sup> They reveal their tallies of wins in their resumés, to journalists, in political campaigns and in other opportunities for self-promotion.<sup>29</sup> Prosecutors generally get wrapped up in score-keeping and use these records in the public arena. Especially in a context where prosecutors are elected, prosecutors remind voters of their notorious cases<sup>30</sup> and campaigning on conviction rates has been deemed as essential to be (re-)elected as a prosecutor.<sup>31</sup> A few recent examples can illustrate this whereby a district attorney in New York mentioned during a political debate that his conviction rate was 71% in 2017 and 81% in 2018.<sup>32</sup> Another DA claimed in a public debate that his conviction rate was 99%<sup>33</sup> and prosecutors advertise their conviction rates on their website.<sup>34</sup> Prosecutors go therefore at great efforts to communicate their conviction rates to the public at large and use diverse means to achieve this (personal websites, public gatherings, newspaper articles).

Obviously, that does not mean that the prosecutor would be allowed to advertise his conviction rate as evidence to jurors during a trial. To be admissible, state and federal rules of evidence require evidence to be relevant.<sup>35</sup> Evidence of a prosecutor's high conviction

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<sup>28</sup> Catherine Ferguson-Gilbert, *It is not whether you win or lose, it is how you play the game: Is the win-loss scorekeeping mentality doing justice for prosecutors*, 38 CALIFORNIA WESTERN LAW REVIEW 283 (2001).

<sup>29</sup> Kenneth Bresler, *I Never Lost a Trial: When Prosecutors Keep Score of Criminal Convictions*, 9 GEORGETOWN JOURNAL OF LEGAL ETHICS 537 (1995).

<sup>30</sup> Ferguson-Gilbert, *supra* note 28.

<sup>31</sup> Fred C. Zacharias, *Structuring the ethics of prosecutorial trial practice: Can prosecutors do justice*, 44 VANDERBILT LAW REVIEW 45 (1991).

<sup>32</sup> <https://www.syracuse.com/crime/2019/10/da-fitzpatrick-brags-of-record-challenger-calls-him-out-touch-during-da-debate.html>

<sup>33</sup> <https://www.cjonline.com/news/2016-07-21/district-attorney-candidates-clash-over-acquittal-rates-charging-decisions-debate>

<sup>34</sup> See the personal website for the state attorney of Broward County Florida, Michael Satz: <http://www.sao17.state.fl.us/michael-j.-satz.html>.

<sup>35</sup> The exact definition of relevance varies from state to state, but its content is often regarded as equivalent to the relevance concept in the Federal Rules of Evidence (FRE 401). For example, Section 90.401 of the Florida Evidence Code defines relevant evidence as any evidence that has a tendency to prove or disprove a material fact. According to the Federal Rules of Evidence, relevant evidence means evidence having any tendency to make the existence of any fact that is of consequence to the determination of the action more probable or less probable than it would be without the evidence. According to Stephani and Weissenberger (2021), there is no difference in the meaning of the definitions, only in the wording. See A.J. Stephani & G. Weissenberger, *Florida Evidence Courtroom Manual (2022)*, at IV. Ch. 401.



rate would not establish effects that help to prove that the defendant committed a crime and would therefore be inadmissible. Furthermore, rules of evidence also allow courts to exclude evidence when its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the jury.<sup>36</sup> Presenting evidence of a high conviction rate could unfairly prejudice the defendant and confuse or mislead the jury and would for that reason be inadmissible. That does not, however, mean that in practice jurors would not take a high conviction rate into account since, as just indicated, prosecutors themselves use various means to advertise their conviction rate.

Apart from prosecutors actively publicizing conviction rates for reputational or election purposes, information about conviction rates may also reach jurors through media publicity before and/or during a trial. Studies have for example shown that despite remedial efforts, such as jury instructions, jurors are not immune to the detrimental effects of viewing trial information through pre-trial publicity.<sup>37</sup> Even more so, aside from the potential of being passively exposed to irrelevant trial information in the media, several studies have indicated that jurors themselves also actively seek information about trial parties, including prosecutors.<sup>38</sup> Information about conviction rates may therefore reach jurors in several ways.

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<sup>36</sup> See for example Rule 90.403 of the Florida Evidence Code and Federal Rule of Evidence 403.

<sup>37</sup> Geoffrey P. Kramer, Norbert L. Kerr & John S. Carroll, *Pretrial publicity, judicial remedies, and jury bias*, 14(5) *LAW AND HUMAN BEHAVIOR* 409–438 (1990); Amy L. Otto, Steven D. Penrod & Hedy R. Dexter, *The biasing impact of pretrial publicity on juror judgments*, 18(4) *LAW AND HUMAN BEHAVIOR* 453–469 (1994); Joel D. Lieberman & Jamie Arndt, *Understanding the limits of limiting instructions: Social psychological explanations for the failures of instructions to disregard pretrial publicity and other inadmissible evidence*, 6(3) *PSYCHOLOGY, PUBLIC POLICY, AND LAW* 677–711 (2000); Christine L. Ruva & Elizabeth M. Hudak, *Pretrial publicity and juror age affect mock-juror decision making*, 19(2) *PSYCHOLOGY, CRIME & LAW* 179–202 (2013).

<sup>38</sup> Thaddeus Hoffmeister, *Google, gadgets, and guilt: Juror misconduct in the digital age*, 83 *UNIVERSITY OF COLORADO LAW REVIEW* 409–470 (2011); Robbie Manhas, *Responding to Independent Juror Research in the Internet Age: Positive Rules, Negative Rules, and Outside Mechanisms*, 112(5) *MICHIGAN LAW REVIEW* 809–831 (2013).

### 2.3 Conviction rates and cognitive processes which may influence jurors' decisions

If jurors can be exposed to information about a prosecutor's prior conviction rate, an important question is whether it also affects how jurors look at a given case. Prior research has identified several biases that would indeed predict such an effect. First of all, jurors can be affected by the *confirmation* bias. The confirmation bias postulates that if individuals have a preconception about a certain issue, they tend to favour information that corresponds with their prior beliefs, and disregards evidence pointing in another direction.<sup>39</sup> This bias makes individuals search and interpret information in a way that is consistent with their initial assumptions, eventually leading to biased decisions.<sup>40</sup> Previous research has found that the confirmation bias is at play at different stages of the criminal procedure and influences various actors (e.g. police, prosecutors, judges and jurors).<sup>41</sup> In our context, individuals who learn that the conviction rate is high (low) may form the assumption that the accused is therefore very likely to be guilty (innocent) and may be biased in favour of evidence which confirms that assumption and ignore evidence that does not correspond with the previous assumption.

Another bias that may play a role concerns anchoring and adjustment.<sup>42</sup> When people must estimate uncertain quantities, they often start with an accessible value as a focal point or an "anchor", which they then adjust up or down in the light of new information, in order to arrive at an acceptable value. However, they tend to adjust their anchors insufficiently and consequently produce end approximations that are biased towards the initial anchor. The effect of

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<sup>39</sup> Already in the 1960s, Wason collected data in controlled laboratory experiments suggesting that people are prone to confirmation bias (P.C. Wason, *On the Failure to Eliminate Hypotheses in a Conceptual Task*, 12(3) QUARTERLY JOURNAL OF EXPERIMENTAL PSYCHOLOGY 129–140 (1960).

<sup>40</sup> SCOTT PLOUS, *THE PSYCHOLOGY OF JUDGMENT AND DECISION MAKING* (1993).

<sup>41</sup> See e.g. MOA LIDÉN, CONFIRMATION BIAS IN CRIMINAL CASES (2018); Moa Lidén, Minna Gräns & Peter Juslin, *The presumption of guilt in suspect interrogations: Apprehension as a trigger of confirmation bias and debiasing techniques*, 42(4) LAW AND HUMAN BEHAVIOR 336–354 (2018); Karl Ask, Anna Rebelius & Pär A. Granhag, *The elasticity of criminal evidence: A moderator of investigator bias*, 22(9) APPLIED COGNITIVE PSYCHOLOGY 1245–1259 (2008); Jeff Kukucka & Saul M. Kassin, *Do confessions taint perceptions of handwriting evidence? An empirical test of the forensic confirmation bias*, 38(3) LAW AND HUMAN BEHAVIOR 256–270 (2014).

<sup>42</sup> Amos Tversky & Daniel Kahneman, *Judgment under uncertainty: Heuristics and biases*, 185(4157) SCIENCE 1124–1131 (1974).

anchoring and adjustment has been shown in various domains of judgment and decision-making and has proven to be a persistent, with a strong and robust effect.<sup>43</sup> Even judges have been found to be affected by anchors in their decision-making. In a study by Englich and Mussweiler,<sup>44</sup> anchoring affected sentencing for both novice and experienced judges who were confronted with two different demands for sentence (12 months or 34 months) by an alleged prosecutor in a hypothetical rape case. Judges who were given an anchor of a relatively severe (lenient) punishment retrieved more information that was consistent with this larger (smaller) sentence. When this is applied to the context of conviction rates, respondents may use knowledge about a prosecutor's conviction rate as an initial anchor of the probability of guilt in a given case. The question of whether this anchored conviction rate is high or low, may then bias jurors' ability to adjust their judgments based on the evidence provided, leading to more (fewer) guilty verdicts in cases where a prosecutor is known to have a high (low) conviction rate.

Finally, findings on the authority bias would also predict a similar effect. The authority bias holds that people are predisposed to believe authority figures and comply with their wishes.<sup>45</sup> People with authority are therefore more easily obeyed whereas those with less authority will have more difficulties to convince others. The degree of authority bestowed upon a prosecutor could depend on his past conviction rate and may as a result influence jurors' judgments. Prosecutors with low conviction rates will face more difficulties in convincing jurors than prosecutors with high conviction rates since a low conviction rate may signal that the prosecutor has less authority.

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<sup>43</sup> Peer Eyal & Gamliel Eyal, *Heuristics and Biases in Judicial Decisions*, 49 COURT REVIEW: THE JOURNAL OF THE AMERICAN JUDGES ASSOCIATION 114–118 (2013); Thomas Mussweiler, *The Malleability of Anchoring Effects*, 49(1) EXPERIMENTAL PSYCHOLOGY 67–72 (2002); Fritz Strack & Thomas Mussweiler, *Explaining the Enigmatic Anchoring Effect: Mechanisms of Selective Accessibility*, 73(3) JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY 437–446 (1997).

<sup>44</sup> Birte Englich & Thomas Mussweiler, *Sentencing Under Uncertainty: Anchoring Effects in the Courtroom*, 31(7) JOURNAL OF APPLIED SOCIAL PSYCHOLOGY 1535–1551.

<sup>45</sup> The authority bias has especially been studied in relation to the behavioral examination of obedience following the experiments of Milgram (Stanley Milgram, *Behavioural Study of Obedience*, 67(4) THE JOURNAL OF ABNORMAL AND SOCIAL PSYCHOLOGY 371–378 (1963)). But also more recent work shows how a lot of trust is put in the opinions of experts, for example in their assessment of particular risks (see in particular PAUL SLOVIC, *THE PERCEPTION OF RISK* (2000)).

All the biases described above would predict the effect of a prosecutor's conviction rate on the likelihood of jurors convicting. Note that these biases may affect a juror's judgment even if jurors are not explicitly informed of a prosecutor's conviction rate in the course of a trial. As mentioned before, in the United States, for example, conviction rates are well publicized and prosecutors (or prosecutorial offices) with conviction rates far above or below the average conviction rate often get quite a lot of media attention.<sup>46</sup> In many countries and states, journalists can rely on official reports with key statistics on crime, often including conviction rates, which are published on an annual basis. An example is the United States Attorneys' Annual Statistical Report.<sup>47</sup> Furthermore, in times of prosecutorial elections, prosecutors frequently tout their high conviction rates.<sup>48</sup> These figures are often very high because they generally include the convictions reached through plea-bargaining, which comprises the bulk of convictions. The conviction rate at trial is often considerably lower, and it is of course these lower rates that are advanced in the media by new candidates against prosecutors seeking re-election.

### III THE PRESENT RESEARCH

We conducted two experiments to investigate the influence of a prosecutor's prior conviction rate on jurors' decisions.<sup>49</sup> Both studies used a vignette approach in which a simulated criminal case was provided that only differed in terms of the conviction rate that was conveyed. The first study employed a vignette previously used by Scurich and John<sup>50</sup> and provides a first test of whether information about prior conviction rates (High or Low) affected jurors' beliefs about the probability of guilt in the context of a robbery. Using another criminal trial context (murder), Study 2 sought to replicate these findings with a measure that more accurately reflects actual verdicts. Furthermore, Study 2 also included jury instructions on the

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<sup>46</sup> See e.g. Fountain, *supra* note 8; Kochman, *supra* note 8; Novak, *supra* note 8.

<sup>47</sup> See e.g. <https://www.justice.gov/usao/resources/annual-statistical-reports> for all the annual reports covering the period 1955–2017.

<sup>48</sup> See e.g. Liberatore, *supra* note 8.

<sup>49</sup> The data that support the findings of this study are available from the corresponding author (Pieter Desmet) upon reasonable request.

<sup>50</sup> Nicolas Scurich & Richard S. John, *Jurors' presumption of innocence*, 46(1) JOURNAL OF LEGAL STUDIES 187–206 (2017).

reasonable doubt standard as those instructions may have an important influence by preventing verdicts from being biased by jurors' knowledge of the prosecutor's conviction rate.

### 3.1 *Study 1*

#### 3.1.1 *Method*

3.1.1.1 *Participants and Design.* A total of 200 jury-eligible adults from the United States were recruited through the online research panel Prolific Academic<sup>51</sup> to participate in the experiment. Only workers who were US nationals, were aged 18 years or older, and possessed approval rates of greater than 90 were allowed to participate. Consistent with convention,<sup>52</sup> three, multiple-choice attention checks were included that asked about details of the case presented. All participants answered at least two questions correctly, so no participants were excluded from the analysis. The sample included 107 females (53.5 percent). The mean age of the respondents was 33.94 years ( $SD = 11.83$ ), and ages ranged from 18 to 72 years. The majority of the participants (78.0 percent) had never served on a jury. All participants were randomly assigned to one of the two experimental between-subject conditions (Low or High Conviction Rate). They received £1.00 (approximately \$1.30) for participating.

3.1.1.2 *Procedure and measures.* Participants were provided with an extensive experimental vignette about a court case for which they served as mock jurors in the criminal trial. The vignette we used was previously utilized in Scurich and John.<sup>53</sup> The vignette first described some factual details about a robbery: "On Wednesday May 17 of this year, a man attempted to grab the purse of a young woman (Ellen Jones), while she was on her way to the grocery store. During the scuffle which lasted for about ten to fifteen seconds, the woman fell to

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<sup>51</sup> <http://prolific.ac>, see Eyal Peer, Laura Brandimarte, Sonam Samat & Alessandro Acquisti, *Beyond the Turk: alternative platforms for crowdsourcing behavioral research*, 70 *JOURNAL OF EXPERIMENTAL SOCIAL PSYCHOLOGY* 153–163 (2017); Krin Irvine, David A. Hoffman & Tess Wilkinson-Ryan, *Law and psychology grows up, goes online, and replicates*, 15(2) *JOURNAL OF EMPIRICAL LEGAL STUDIES* 320–355 (2018).

<sup>52</sup> Daniel M. Oppenheimer, Tom Meyvis & Nicolas Davidenko, *Instruction manipulation checks: detecting satisficing to increase statistical power*, 45(4) *JOURNAL OF EXPERIMENTAL SOCIAL PSYCHOLOGY* 867–872 (2009).

<sup>53</sup> Nicolas Scurich & Richard S. John, *Jurors' presumption of innocence*, 46(1) *THE JOURNAL OF LEGAL STUDIES* 187–206 (2017).

the ground and was dragged a few feet before eventually releasing the purse, which contained 120 \$, an iPhone 5s and some personal documents including bank cards and identity papers. The fall resulted in a deep laceration on Ms. Jones' leg and several other but smaller injuries to hands, knees and left shoulder. The assailant then jumped into a pickup truck and drove off at high speed.”

At this point, depending on the experimental condition they were assigned to, subjects were given different information about the prosecutors' conviction rate. In the first condition, respondents were informed that a prosecutor was assigned to the case and that this prosecutor had a conviction rate of 20 percent (Low Conviction Rate Condition). In the second condition, respondents were informed that the prosecutor assigned to the case had a conviction rate of 80 percent (High Conviction Rate Condition).

After that, all participants received an identical, extensive list of evidence held against and in favour of the accused. Jurors learned that the prosecutor accused the defendant - Joe Gonzalez - of first-degree robbery and held the following evidence against the accused: After the victim was treated in the nearby St. Mary's hospital, she provided a description of the assailant to the police. The next morning a detective, Anthony Spencer, went to the place of the attack and learned that Mr. Gonzalez – an employee of a nearby pizzeria – matched the description. The detective found out that Mr. Gonzalez got off work a couple of minutes before the attack, that the attack occurred on the route to his house, that he drove the same make and model truck as the assailant, and that he gave his sister a used white iPhone 5s shortly after the attack. The victim's iPhone 5s that was stolen was also white. The sister of Mr. Gonzalez testified that she subsequently lost the phone, but did not report it missing. Mr. Gonzalez had some small wounds on one of his hands. Jurors also learned that the defence had different arguments: There were no cameras in the neighborhood that recorded the attack or the fleeing car. Ms. Jones was relatively confident about most parts of the description she gave, but was not entirely certain about some elements because the attacker wore a cover face hoodie. At the end of the scuffle, the cap of the hoodie moved but Ms. Jones was only able to see part of the face for a brief second and only saw the face sideways. According to Ms. Jones, the height of the attacker could have been anything ranging from 5.5 to 6.5 feet. The detective asked Mr. Gonzalez to come to the police station. Mr. Gonzalez complied and denied that he was the perpetrator. He stated that after he closed

work on January 17, he drove straight home, prepared some food and watched television.

An employee of a convenience store furthermore testified that Mr. Gonzalez regularly bought temporary phones from his store. The employee did not recall ever selling Mr. Gonzalez a used iPhone, but was not entirely sure, and did not keep records that could settle this issue. The owner of the pizzeria and two employees confirmed that the wounds on the hands of Gonzalez were inflicted at work on May 15. Some other individuals who drove the same type of truck as the assailant were identified and questioned by detective Spencer. One of these individuals had a criminal record for theft, but the wife of the individual stated that her husband was with her on the moment of the attack. The defence claimed this lead was not investigated thoroughly enough.

After the case was described, participants provided an estimated probability of guilt. As scholars have criticized using open-ended questions and have advocated using scales instead of eliciting probabilities, we asked jurors to indicate the estimated probability of guilt by moving a slider on a scale varying from 0 to 100%.<sup>54</sup> Recently scholars have also proposed using an odds ratio.<sup>55</sup> In order to compare both, depending on whether they previously indicated a probability of guilt higher (or lower) than 50% on the probability scale, participants were asked how many times they found it more likely that the suspect was guilty rather than innocent (or innocent rather than guilty). This allowed us to also calculate an odds ratio of guilt too.

### 3.1.2 Results

We first analyzed the effect of our treatment on the estimated probability of guilt. A one-way Analysis of Variance with the conviction rate predicting the estimated probability of guilt revealed a significant main effect of our treatment,  $F(1, 198) = 4.20, p < .05$ . Jurors who learned about a prosecutor's conviction rate being high were more inclined to believe that the suspect was guilty ( $M = .57, SD = .24$ )

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<sup>54</sup> See Wändi Bruine de Bruin, Paul S. Fischbeck, Neil A. Stiber & Baruch Fischhoff, *What number is "fifty-fifty"?: Redistributing excessive 50% responses in elicited probabilities*, 22(4) RISK ANALYSIS: AN INTERNATIONAL JOURNAL 713–723 (2002).

<sup>55</sup> Scurich & John, *supra* note 53. As participants tend to select values toward the middle of probability scales (for example, .50), odds ratios limit this tendency because their range is not restricted to values between 0 and 1. Odds ratios are assessed by asking participants how many times they consider one outcome (e.g. guilty) to be more likely than the other outcome (e.g. not guilty).

than jurors in the case where the prosecutor's conviction rate was low ( $M = .51$ ,  $SD = .21$ ).

Next, we analyzed the odds ratio. Following Scurich and John<sup>56</sup> for all inferential tests, the natural log odds was used to account for any skewed data.<sup>57</sup> A natural log transformation was used to remove the natural asymmetry of odds about the point 1.0. Thus, odds of 10:1 and odds of 1:10 are equidistant from the point of equilibrium (odds = 1.0) when plotted on a log scale.<sup>58</sup> A one-way Analysis of Variance on the log odds of guilt revealed a similar, yet marginally significant effect,  $F(1, 198) = 2.80$ ,  $p < .10$ . Jurors who learned that a prosecutor's conviction rate was high gave higher odds for the suspect being guilty ( $M = .02$ ,  $SD = 1.87$ ) than jurors in the case where the prosecutor's conviction rate was low ( $M = .43$ ,  $SD = 1.59$ ).

### 3.1.3 Discussion

Study 1 provided some first evidence that information about a prosecutor's conviction rate may affect jurors' decisions in the sense that jurors' beliefs about a defendant's probability of guilt are affected by whether they learned about a prosecutor's conviction rate being high or low: if the prosecutor's conviction rate is high, they are more likely to believe that the defendant is guilty. Despite this supporting evidence, we decided to conduct a second experiment for a number of reasons.

First of all, in study 1 we used a specific trial context (a robbery). To increase the robustness of our findings, they need to be replicated in different trial contexts. Second, study 1 used beliefs about the probability of guilt as the central measure, which is widely accepted and used by other scholars as an indication that actual verdicts will be affected.<sup>59</sup> However, they do not resemble actual court decisions where binary guilty/not guilty verdicts are made and may therefore

<sup>56</sup> Ibidem.

<sup>57</sup> FREDERICK MOSTELLER & JOHN W. TUKEY, *DATA ANALYSIS AND REGRESSION: A SECOND COURSE IN STATISTICS* (1977).

<sup>58</sup> A.W. Martin & D.A. Schum, *Quantifying burdens of proof: A likelihood ratio approach*, 27(4) *JURIMETRICS* 383–402 (1987).

<sup>59</sup> See e.g. Steven E. Clark & Gary L. Wells, *On the diagnosticity of multiple-witness identifications* 32(5) *LAW AND HUMAN BEHAVIOR* 406–422 (2008); Laura Smalarz, Stephanie Madon & Anna Turosak, *Defendant stereotypicality moderates the effect of confession evidence on judgments of guilt*, 42(4) *LAW AND HUMAN BEHAVIOR* 355–368 (2018); Scurich & John, *supra* note 50; Scurich & John, *supra* note 53.



diverge to some extent.<sup>60</sup> We therefore wanted to replicate our findings with a similar dichotomous dependent variable. Third, study 1 did not contain any juror instructions regarding the reasonable doubt standard, and this may be an important buffer that potentially prevents any effects of conviction rates from surfacing in actual verdicts. Observing a persistent effect of conviction rates on verdicts in the presence of explicit juror instructions would further strengthen our findings. Finally, in study 2 a control condition is included in which no information regarding the conviction rate is provided. Having this additional treatment allows us to see where the baseline is situated and gives an indication when a prosecutor's conviction rate will be most likely to cause bias: ie- only when these rates are low, only when they are high, or both when they are high and low.

## 3.2 Study 2

### 3.2.1 Method

3.2.1.1 *Participants and Design.* A total of 228 jury-eligible adults from the United States were recruited through the online research panel Prolific Academic<sup>61</sup> to participate in this experiment. As in Study 1 and consistent with convention,<sup>62</sup> we included 3 attention checks that asked about basic details of the case. 10.08 percent ( $n = 23$ ) of the respondents were removed for failing at least two out of three of these attention checks.<sup>63</sup> The final sample of 205 respondents included 91 females (44.4 percent). The mean age of the respondents was 35.54 years ( $SD = 10.72$ ), and ages ranged from 18 to 71 years. The majority of the participants (71.7 percent) had never served on a jury. All participants were randomly assigned to one of the three experimental between-subject conditions (Low, High or No Conviction Rate). They received £1.00 (approximately \$1.30) for participating.

3.2.1.2 *Procedure and Measures.* As in study 1, participants were provided with an experimental vignette in which a court case was described and participants served as mock jurors in the following

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<sup>60</sup> Svein Magnussen, Dag E. Eilertsen, Karl H. Teigen & Ellen Wessel, *The probability of guilt in criminal cases: Are people aware of being 'beyond reasonable doubt'?*, 28(2) APPLIED COGNITIVE PSYCHOLOGY 196–203 (2014).

<sup>61</sup> <http://prolific.ac>, see Peer et al., *supra* note 51; Irvine et al., *supra* note 51.

<sup>62</sup> Oppenheimer et al., *supra* note 52.

<sup>63</sup> Including these participants in the analyses did not alter the results.

criminal trial, in contrast with study 1, the case involved a possible murder and was more extensive. Furthermore, before being asked to give a binary verdict (guilty/not guilty), all jurors received specific instructions that the defendant should only be convicted if the juror had no reasonable doubt about the defendant's guilt.<sup>64</sup>

The case first described how a 38-year-old experienced skydiver, Lisa V., a married mother of 2 children, was killed in a skydiving accident.<sup>65</sup> The dive was captured by a video camera mounted on her helmet and the woman dropped from a height of over 2 miles (over 3 km) after both her primary and reserve parachutes failed to deploy, landing in a garden in a small town. Some days after the accident, police established that the cords of the parachute had been cut. Two months later, a 22-year-old woman, elementary school teacher and amateur skydiver, Mary C., was arrested. The police learned that both Lisa V. and Mary C. had a sexual relationship with the same man, Mark S., a fellow skydiver at the same skydiving club of which both women were members. The victim, Lisa V., had led a double life. During the week the 38-year-old mother of two worked with her husband in the family jewelry store. She spent her weekends at the parachute club to enjoy her passion for skydiving and to meet Mark S. The investigators hypothesized that Mary C. killed Lisa V. to get rid of her love rival.

After this general information, depending on the experimental condition they were randomly assigned to, participants learned that the prosecutor who was assigned to the case had a conviction rate of either 20% or 80%. In the Control Condition, no information regarding the conviction rate was mentioned. After that, all partici-

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<sup>64</sup> We relied on jury instructions from the state of New York (see <http://www.nycourts.gov/judges/cji/1-General/cjigc.shtml>). The following instruction was provided to the respondents: "You should convict the defendant only if you have no reasonable doubt about the defendant's guilt. A reasonable doubt is an honest doubt of the defendant's guilt for which a reason exists based upon the nature and quality of the evidence. It is an actual doubt, not an imaginary doubt. It is a doubt that a reasonable person, acting in a matter of this importance, would be likely to entertain because of the evidence that was presented or because of the lack of convincing evidence. Proof of guilt beyond a reasonable doubt is proof that leaves you so firmly convinced of the defendant's guilt that you have no reasonable doubt of the existence of any element of the crime or of the defendant's identity as the person who committed the crime." See e.g. <http://www.nycourts.gov/judges/cji/1-General/cjigc.shtml>.

<sup>65</sup> The case was based on a real criminal case that involved the death of a woman in the Flemish Region in Belgium in 2006. We changed the names and adapted some of the factual circumstances.

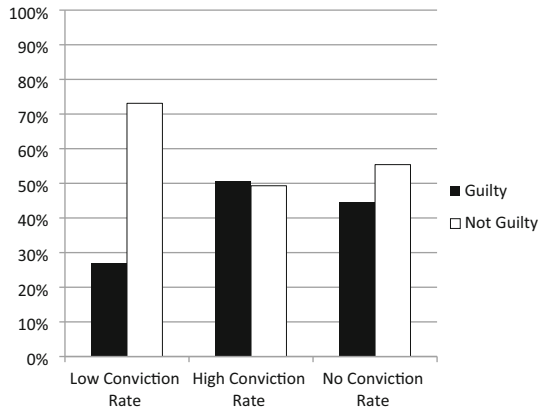


Figure 1. Distribution of jurors' verdicts as a function of the prosecutor's conviction rate for Study 2

pants were presented with a long list of arguments and evidence held against and in favour of the accused. In total, 14 arguments were provided. For example, participants learned that there was no hard evidence against Mary C.: no fingerprints, no DNA, no witnesses and no confessions (even though she was interrogated for more than 100 hours in total). As another example, participants also learned that although Mary C. said she had no problem with being Mark S.'s second choice, it was proven that at one point she sent anonymous letters and made anonymous calls to Lisa V. in an attempt to end the relationship between Lisa V. and Mark S. After the presentation of this list, participants were asked to provide their verdict (guilty/not guilty).

### 3.2.2 Results

A binary logistic regression analysis with conviction rate as the predictor variable and verdicts as the dependent variable yielded as predicted a significant effect of our treatment, Wald's  $\chi^2(2, N = 205) = 8.47, p = .01$ . Consistent with our hypothesis and with the results of Study 1, simple-slope analyses revealed that jurors in the high conviction rate treatment were significantly more likely to convict the accused than jurors in the low conviction rate treatment,  $B = 1.03, SE = .36, \text{Wald's } \chi^2 = 8.10, p < .005$ . Whereas in the low conviction rate treatment only 27% of jurors gave a guilty verdict, in the high conviction rate treatment 51% of jurors gave a guilty verdict. Jurors in the low conviction rate treatment were also significantly less likely

to convict the accused compared to the jurors in the control condition, where 45% of jurors gave guilty verdicts,  $B = -0.79$ ,  $SE = .37$ , Wald's  $\chi^2 = 4.46$ ,  $p < .05$ . Finally, jurors in the control condition were as likely to give guilty verdicts as jurors in the high conviction rate treatment,  $B = -.24$ ,  $SE = .34$ , Wald's  $\chi^2 = 0.51$ , *ns*. The distribution of verdicts according to experimental treatment is illustrated in Figure 1.

#### IV GENERAL DISCUSSION

Across two studies we found that the same case with the same evidence is judged differently depending on the jurors' knowledge of the prosecutor's prior conviction rate. We observed that jurors are more inclined to convict when they learn that the conviction rate of the prosecutor is high as opposed to low. We found that prosecutors' prior conviction rates not only affect jurors' beliefs about the probability of guilt (Study 1) but also verdicts, even when jurors receive explicit instructions regarding the reasonable doubt standard (Study 2). By showing that conviction rates determine conviction rates, our findings point to the danger of creating a vicious circle by exposing (potential) jurors to conviction rates. Below, we discuss the most important implications and limitations.

##### 4.1 *Low vs. High vs. No conviction rates*

Whereas both Study 1 and 2 showed that high prior conviction rates are more likely to result in guilty verdicts compared to low conviction rates, Study 2 included a control condition that allowed us to observe the baseline verdicts (i.e. the verdicts when no information about conviction rates is available). We found that these baseline verdicts differed from the low conviction rate treatment but not from the high conviction rate treatment, which appears to indicate that low conviction rates are more problematic if known to the jurors, as they cause them to be significantly less likely to convict, compared to when they do not know the conviction rate. Yet our findings also seem to suggest that knowledge of high conviction rates is less problematic as it did not lead to more convictions compared to the baseline verdicts. Whereas this may seem a plausible conclusion to make, some caution is advised.

First of all, the level of baseline verdicts greatly depends on the strength of the underlying case. It may well be that when the

underlying case is rather weak, the effect of conviction rates may shift, leading only high conviction rates to differ significantly from the baseline. Further research is therefore needed to examine the extent to which the effect of conviction rates depends on the relative strength of the underlying case. If such future research, however, were to confirm our findings across cases of different strengths, this could suggest that it is particularly low conviction rates that make jurors become more critical of the evidence presented by a prosecutor, rather than high conviction rates making jurors less critical of the prosecutor's evidence.

An important question then becomes why do jurors react to low conviction rates, but not to high conviction rates. One possible explanation is that low conviction rates are seen as a negative sign of previous poor quality work by a prosecutor, who apparently has a history of bringing weak cases to court that should not have ended up there in the first place. Prior research has established that when people form impressions of others -in this case, prosecutors- they pay more attention to and react more to negative information about a person than to positive information of that person.<sup>66</sup> That would explain why jurors react more strongly to low conviction rates than to high conviction rates. However, further research is needed to uncover jurors' perceptions of prior conviction rates in more detail. Such research could also reveal what conviction rate jurors expect or see as "normal".

Second, it may also be worthwhile to investigate how our findings relate to concerns of legitimacy of the criminal justice system. We observed that whereas low conviction rates induce more scrutiny, high conviction rates do not reduce scrutiny. One might wonder whether, if low conviction rates are indeed a sign of a prosecutor's tendency to bring weak cases to court, jurors' reactions to be more scrutinous in weighing evidence is in fact a sensible way to avoid potentially wrongful convictions and is therefore not necessarily problematic. However, it is important to note that in the cases that we used, it is difficult to objectively pinpoint whether it is more correct to convict or to acquit and in our control condition without conviction rates, around 45% chose to convict. The heightened

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<sup>66</sup> Susan T. Fiske, *Attention and weight in person perception: The impact of negative and extreme behavior*, 38(6) *JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY* 889–906 (1980); Paul Rozin & Edward B. Royzman, *Negativity bias, negativity dominance, and contagion*, 5(4) *PERSONALITY AND SOCIAL PSYCHOLOGY REVIEW* 296–320 (2001).

hesitance to convict when facing a prosecutor with a low conviction rate is therefore just as likely to result in more wrongful acquittals as in less wrongful convictions. For that reason it is again important to study the effects of conviction rates for cases differing in strength, as it would allow us to see whether low (or high) conviction rates make jurors better decision makers.

Finally, apart from case strength, jurors' priors (i.e. their judgments before any case evidence is given) may also influence the relative effects of low and high conviction rates. Previous research has indicated that jurors may start off with relatively high prior probabilities of guilt.<sup>67</sup> Scurich et al.<sup>68</sup> observed that nearly two thirds of the sample maintained subjective (prior) probabilities of guilt of either 0.38, 0.50 or 0.63, and while only 11% of priors were below 0.38, 21% percent were above 0.63. It could be that the majority of our respondents too had relatively high priors. If jurors' priors are more often above than below 50 percent, the treatment in which no information on the conviction rate is provided may resemble the high conviction rate treatment more than the low conviction treatment. In a pool with subjects which happen to have relatively low priors on average, the effect of conviction rates may therefore shift, leading high conviction rates to differ from the baseline with no conviction rates. It may therefore be worthwhile for future research to look into the effects of jurors' priors.

#### 4.2 Prosecutors' behavior: Case selection and plea-bargaining

Our findings show how prior information on prosecutors' conviction rates may affect decision-making by jurors. In other words: how conviction rates become self-reinforcing. An interesting question is how prosecutors will behave if they are aware of this effect. Prosecutors can generally try to obtain convictions at all costs, in order to promote their careers in the political arena.<sup>69</sup> Our research shows that prosecutors may have an incentive to strategically increase the conviction rate in the current period in order to reap the benefits in the

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<sup>67</sup> Nicolas Scurich, K. Nguyen & Richard S. John, *Quantifying the presumption of innocence*, 15(1) LAW PROBABILITY AND RISK 71–86 (2016).

<sup>68</sup> *Ibidem*.

<sup>69</sup> Ferguson-Gilbert, *supra* note 28.

future.<sup>70</sup> They are able to increase the conviction rate in the current period in at least two ways. First, prosecutors may become more selective in the cases they prosecute. Picking cases where conviction appears more likely will increase the conviction rate. Second, prosecutors may increase their conviction rates by being more lenient in the plea-bargaining process, and thus make excessively lenient offers, especially in riskier cases. Such prosecutorial behavior would clearly not always align with the social interest as the higher conviction rates could be obtained at the price of under-deterrence of perpetrators in riskier cases that are not prosecuted or settled leniently. Also, in future periods in which prosecutors decide to bring a larger fraction of weaker cases than in the previous period, some defendants in quite weak cases that should not lead to a conviction, may still be convicted due to the self-reinforcement effect. Note that these problems are likely to be worse in regimes where prosecutors are not nominated for life, but elected for a particular time-period. The existing literature has indeed found strong indications that high conviction rates are believed to have an electoral reward.<sup>71</sup> Of course, the strategic possibilities of prosecutors are not without limits. For example, their choices are heavily influenced by the priorities set by the police, the quality of police investigations, and the political pressure to pursue a large proportion of the serious criminal cases brought to them.

#### 4.3 *The constituents of jurors' priors*

There are only a few studies that have attempted to measure jurors' priors. These studies show that there is substantial variability in the responses.<sup>72</sup> While many jurors think a defendant is equally likely to be guilty as not guilty prior to the introduction of any evidence, a significant amount of respondents start with quite a high or quite a low probability of guilt, and, as mentioned before, about twice as many respondents start with a relatively high as opposed to low

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<sup>70</sup> Suppose that a prosecutor who currently prosecutes a mix of strong and somewhat weaker cases, has a conviction rate of 60%, and that by focusing on strong cases for one year, the conviction rate increased to 80%. If jurors are influenced by these higher conviction rates, the prosecutor's conviction rate may be larger than 60% in the following years, even if he prosecutes a mixture of strong and somewhat weaker cases again, as before.

<sup>71</sup> Ramseyer & Rasmusen, *supra* note 12; Rasmusen et al., *supra* note 22.

<sup>72</sup> Martin & Schum, *supra* note 58; Scurich et al., *supra* note 67.

probability of guilt.<sup>73</sup> Little is known about the factors that shape a juror's prior. Scurich and colleagues<sup>74</sup> found that male participants and self-identified Republicans are more likely to have high prior probabilities of guilt. The same authors also found evidence for a halo effect: defendants with a "bad" and "mediocre" physical appearance were more likely to be perceived as guilty than "good" defendants.<sup>75</sup> Some authors observed differences in priors across various crimes,<sup>76</sup> but others did not.<sup>77</sup>

Our study shows that knowledge about conviction rates influences both jurors' subsequent probabilities and verdicts. Although our experiment was not designed to shed light on the constituents of jurors' priors, the question rises whether prolonged exposure to relatively stable information about conviction rates (e.g. through the popular press) can influence the priors which individuals have about the typical likelihood of the guilt of defendants at trial. Future research could elicit jurors' priors in several mock cases, with jurors coming from districts with divergent conviction rates, and examine whether the priors can partially be explained by the conviction rate in the juror's district.

Examining the constituents of jurors' priors is not just a theoretical exercise without practical consequences. Research has shown that jurors with higher prior scores also have higher scores subsequently all else being equal. In other words, jurors bring different assumptions to the court regarding the likely guilt of a criminal defendant, and these assumptions impact upon their beliefs about the guilt of the defendant at the conclusion of trial. This influence remains even after controlling for various individual difference variables such as political

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<sup>73</sup> In Martin & Schum, *supra* note 58, responses ranged from  $P=0.01$  to  $P=0.99$ . In Scurich et al., *supra* note 67, nearly two thirds of the sample had subjective probabilities of either 0.38, 0.50 or 0.63, 11.3 percent of probabilities were below 0.38, and 20.9 percent were above 0.63.

<sup>74</sup> Scurich et al., *supra* note 67.

<sup>75</sup> Scurich and colleagues, *supra* note 67 refer to this as the "appearance effect". Their findings are consistent with previous observations that physical attractiveness affects jurors' verdicts (for a review, see Ronald Mazzella & Alan Feingold, *The effects of physical attractiveness, race, socio-economic status and gender of defendants and victims on judgments of Mock Jurors: a meta-analysis*, 25(15) JOURNAL OF APPLIED SOCIAL PSYCHOLOGY 1315–1338 (1994).

<sup>76</sup> Vicki S. Helgeson & Kelly G. Shaver, *Presumption of innocence: congruence bias induced and overcome*, 20(4) JOURNAL OF APPLIED SOCIAL PSYCHOLOGY 276–302 (1990).

<sup>77</sup> Scurich et al., *supra* note 67.



orientation, age, ethnicity, gender, and jury experience.<sup>78</sup> Moreover, and more surprisingly, jurors with higher priors are more likely to convict a defendant, even after controlling for jurors' subsequent scores. In other words, both before and after scores predict guilty verdicts individually. Since jurors' priors are determined before evidence is presented at trial, this means that verdicts are influenced by evidence and information not presented at trial.<sup>79</sup> A part of that evidence obtained outside of the courtroom is the publicized information on the earlier conviction rates of the particular prosecutor. Of course, it may be possible to remove jurors' bias for example by explicitly including in the jurors' instruction that they are to disregard prior information they might have had on a prosecutors' conviction rate. It would be an interesting point for further research to examine how such (or other) instruments aimed at removing bias could effectively influence the result. In addition, our study shows that jurors' information about prosecutors' prior conviction rates does influence the probability of finding a defendant guilty. What is less clear is exactly how the knowledge about the conviction rate affects decision-making by jurors. Our results indicate that a high conviction rate led to a higher probability of finding the defendant guilty. But it might also be likely that jurors would react against prosecutors with a high conviction rate by protecting the defendant. In order to analyze that, more information is needed on the precise channels by which the information on conviction rates is processed by the jurors.

Finally, an obvious, yet, given the experimental setting, unavoidable limitation of our study is that we provided the participants with direct information on the prosecutor's conviction rate, whereas in reality potential jurors may only indirectly gather this information through the media and most likely also at an earlier point in time, before they make a decision in court. That equally raises the question of whether jurors would still be able to recall the conviction rate information at the time of the decision, or whether this information has transformed into more implicit knowledge about a prosecutor. These and other issues can be further explored in future research.

#### 4.4 *Which conviction rates?*

In section 2, we have mainly focused on trial conviction rates, i.e. the ratio of cases tried with a conviction as a result to all cases tried.

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<sup>78</sup> Scurich & John, *supra* note 53.

<sup>79</sup> *Ibidem*.

However, it is not only trial conviction rates that may reach the juror's attention through the media or via publicity by prosecutors during elections. As mentioned before, prosecutors will often advance their conviction rate including the convictions reached through plea bargaining, because these rates are higher than the trial conviction rates. Also, the media or prosecutors may sometimes focus on conviction rates for specific types of crimes (e.g. murder, theft etc.). The question thus arises of whether (potential) jurors can distinguish between these different conviction rates or whether they regard them as the same thing. Future research may for example examine the degree of heterogeneity among jurors with respect to how conviction rates are interpreted, with special attention to the difference between low and high conviction rates. It may also examine whether knowledge about conviction rates is more likely to influence jurors' decisions for certain types of crimes.

## V CONCLUSION

In two studies we observed that criminal cases are judged differently depending on the jurors' knowledge of the prosecutor's prior conviction rate. When jurors know prosecutors' prior conviction rates, these rates determine expectations as they have an impact on jurors' expectations about the probability of guilt and may ultimately create a vicious circle in which conviction rates determine conviction rates. Even though prosecutors are formally not allowed to advertise their conviction rate to jurors during trial, in practice, especially in a context where prosecutors are elected, prosecutors will often advertise high conviction rates. To the extent that jurors could receive this information, the experiments we conducted show that this information may subsequently also affect the conviction rate in a specific case. Even though more research may be indicated, for example to examine on the basis of the channel through which jurors may obtain information on conviction rates, our research may obviously have important policy implications. If information on the conviction rates of particular prosecutors does indeed affect the subsequent conviction rate by the jury (as the experiments we conducted indicate), that may seriously jeopardize the right to a fair trial of the particular defendant. As Federal Rule of Evidence 401 may not preclude jurors from obtaining evidence on conviction rates obtained by particular prosecutors, one could consider limiting the current practice of prosecu-

tors enthusiastically communicating their conviction rates to the public at large.

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