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# Legitimacy, Procedural Justice, Accuracy, and Eyewitness Identification

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*Errors of eyewitness identification have motivated a national movement in the United States to reform police procedures that are used to obtain eyewitness identification evidence and legal procedures that regulate the use of that evidence in legal proceedings. These reforms, and eyewitness procedures in general, have been evaluated primarily by the single metric of accuracy—the accuracy of the evidence and the accuracy of legal outcomes based on that evidence. This focus on accuracy contrasts with a large body of research that emphasizes procedural justice and the legitimacy of legal authorities and institutions. This Article develops a Legitimacy Model for eyewitness identification based on the effectiveness of police and legal institutions and the procedural justice inherent in the interactions between eyewitnesses and law enforcement. Section I describes the basic procedures for eyewitness identification in real criminal investigations and experimental simulations; Sections II and III develop a framework for eyewitness*

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*identification based on legitimacy, which is assumed to have two components, effectiveness and procedural justice. Section IV applies this framework to eyewitness identification procedures and reform, and Section V reflects on the utility and challenges associated with the legitimacy framework.*

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## INTRODUCTION

Eyewitnesses make mistakes. They sometimes fail to identify the guilty, and they sometimes falsely identify the innocent. The social science and legal scholarship on eyewitness identification has focused mostly on this second kind of error, and it is not hard to see why. Several archival analyses have provided converging evidence that false eyewitness identification is one of the primary evidentiary causes of false convictions in the United States.<sup>1</sup> This clear link between false identifications and

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1. See, e.g., EDWIN M. BORCHARD, CONVICTING THE INNOCENT: ERRORS OF CRIMINAL JUSTICE (Yale Univ. Press 1932); EDWARD CONNORS ET AL., CONVICTED BY JURIES, EXONERATED BY SCIENCE: CASE STUDIES IN THE USE OF DNA EVIDENCE TO ESTABLISH INNOCENCE AFTER TRIAL (Nat'l Inst. of Justice 1996); SAMUEL R. GROSS & MICHAEL SHAFFER, EXONERATIONS IN THE UNITED STATES, 1989–2012: REPORT BY THE NATIONAL REGISTRY OF EXONERATIONS (2012).

false convictions, combined with over one hundred years of research on human memory and decision-making, has driven a movement to reform the police procedures that control how eyewitness identification evidence is obtained and the legal procedures that regulate how that evidence is evaluated by legal decision-makers.

These reforms have been evaluated almost entirely by a single metric—the expected accuracy of the identification evidence and the expected accuracy of the outcomes of downstream legal procedures that rely on that evidence.<sup>2</sup> The argument, simply put, is that identification evidence obtained with the recommended procedures will be more accurate than identification evidence obtained with non-recommended procedures.<sup>3</sup> And legal outcomes will be more accurate when they rely on evidence obtained with the recommended procedures than when they rely on evidence obtained with the non-recommended procedures.<sup>4</sup> This focus on accuracy is essential to the justice system<sup>5</sup> and consistent with U.S. Supreme Court decisions stating that “reliability is the linchpin in determining the admissibility of identification testimony”<sup>6</sup> and, “the basic purpose of a trial is the determination of the truth.”<sup>7</sup>

However, this narrow focus on the accuracy of *outcomes* contrasts with well-developed literatures in law, justice, political theory, and policing that emphasize the *process* and the legitimacy of the police and legal authorities rather than the outcomes of police investigations or legal proceedings.<sup>8</sup> The purpose of this Article is to develop a theoretical framework for eyewitness identification based on psychological and normative concepts of legitimacy.

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2. See, e.g., Steven E. Clark et al., *Eyewitness Identification and the Accuracy of the Criminal Justice System*, 2 POL'Y INSIGHTS FROM BEHAV. & BRAIN SCI. 175 (2015); Gary L. Wells et al., *Eyewitness Identification Procedures: Recommendations for Lineups and Photospreads*, 22 L. & HUM. BEHAV. 603 (1998).

3. Wells, *supra* note 2, at 637; Gary L. Wells et al., *Eyewitness Evidence: Improving Its Probative Value*, 7 PSYCHOL. SCI. PUB. INT. 45 (2006).

4. Keith A. Findley, *Toward a New Paradigm of Criminal Justice: How the Innocence Movement Merges Crime Control and Due Process*, 41 TEX. TECH L. REV. 133, 149–157 (2008); Brandon L. Garrett, *Judging Innocence*, 108 COLUM. L. REV. 55, 122–25 (2008).

5. DAN SIMON, *IN DOUBT: THE PSYCHOLOGY OF THE CRIMINAL JUSTICE PROCESS* (Harvard Univ. Press 2012).

6. *Manson v. Brathwaite*, 432 U.S. 98, 114 (1977).

7. *Tehan v. United States*, 382 U.S. 406, 416 (1966).

8. TOM R. TYLER, *WHY PEOPLE OBEY THE LAW* (Yale Univ. Press 1990) [hereinafter TYLER, *WHY PEOPLE OBEY THE LAW*]; Tom R. Tyler, *Procedural Justice, Legitimacy, and the Effective Rule of Law*, 30 CRIME & JUST. 283, 311–13 (2003) [hereinafter Tyler, *Procedural Justice*]; Tom R. Tyler, *Psychological Perspectives on Legitimacy and Legitimation*, 57 ANN. REV. PSYCHOL. 375, 379–80, 388 (2006) [hereinafter Tyler, *Psychological Perspectives*].

Our framework builds on the foundational works of Beetham<sup>9</sup> and Bottoms and Tankebe,<sup>10</sup> and also the works of Tyler,<sup>11</sup> Solum,<sup>12</sup> and Wells, Steblay, and Dysart.<sup>13</sup> At the core of our framework is Beetham's theory of the *Legitimation of Power*.<sup>14</sup> Beetham's specific focus on power is critical for present concerns because of the government's power to investigate and prosecute crime, to deny liberty and impose sanctions, and to authorize coercive force, if necessary, under its obligations to protect citizens from harm. Beetham's theory was developed with tremendous scope, to define, "the basic criteria for legitimacy in all historical societies, past and present,"<sup>15</sup> not simply in terms of what the law prescribes in a given society, but rather about "what it ought to prescribe."<sup>16</sup> According to Beetham, power is legitimate to the extent that: "(i) it conforms to established rules, (ii) the rules can be justified by reference to shared beliefs shared by both dominant and subordinate, and (iii) there is evidence of consent of the subordinate to the particular power relation."<sup>17</sup> For present purposes, the most important of these three dimensions of legitimacy are the shared beliefs that provide the foundation for the rules for eyewitness identification procedures within a legitimate justice system.

The specification of these shared beliefs is complicated by the fact that individuals may have internally-conflicting values, and those values are likely to vary across individuals. We will have more to say about these underlying principles later. For now, we follow the recent work of Bottoms and Tankebe who have developed and extended Beetham's theory.<sup>18</sup> In their framework, the legitimacy of legal authorities and institutions depends on both the effectiveness of the police and the procedural justice inherent in police-citizen interactions.<sup>19</sup> Each of these components is described briefly.

### Effectiveness and Accuracy

Effectiveness is often discussed in terms of satisfying the needs of the community,<sup>20</sup> providing physical security and the conditions necessary to material

9. DAVID BEETHAM, *THE LEGITIMATION OF POWER* 4–6, 15–22, 182–84 (Macmillan Educ. Ltd. 1991) [hereinafter BEETHAM, *THE LEGITIMATION OF POWER* (1991)]; DAVID BEETHAM, *THE LEGITIMATION OF POWER* 5–22, 183–85 (Palgrave Macmillan 2d ed. 2013) [hereinafter BEETHAM, *THE LEGITIMATION OF POWER* (2013)].

10. Anthony Bottoms & Justice Tankebe, *Beyond Procedural Justice: A Dialogic Approach to Legitimacy in Criminal Justice*, 102 J. CRIM. L. & CRIMINOLOGY 119 (2012).

11. TYLER, WHY PEOPLE OBEY THE LAW, *supra* note 8; Tyler, *Procedural Justice*, *supra* note 8; Tyler, *Psychological Perspectives*, *supra* note 8.

12. Lawrence B. Solum, *Procedural Justice*, 78 S. CAL. L. REV. 181, 190 (2004).

13. Gary L. Wells et al., *Eyewitness Identification Reforms: Are Suggestiveness-Induced Hits and Guesses True Hits?*, 7 PERSP. PSYCHOL. SCI. 264 (2012).

14. BEETHAM, *THE LEGITIMATION OF POWER* (1991), *supra* note 9.

15. *Id.* at 21.

16. *Id.* at 5.

17. *Id.* at 16.

18. Bottoms & Tankebe, *supra* note 10.

19. *Id.* at 145.

20. JEAN-MARC COICAUD, *LEGITIMACY AND POLITICS* 34 (David Ames Curtis ed. & trans., Cambridge Univ. Press 2002) (1997).

welfare,<sup>21</sup> or in terms of “tackling gun crime,”<sup>22</sup> “solving murders,”<sup>23</sup> or controlling violent crime, gangs, and drugs.<sup>24</sup> These descriptions of police effectiveness, to the extent that they focus on suppressing crime and convicting criminals, seem a bit one-sided with an emphasis on crime control over due process.<sup>25</sup> However, effectiveness not only requires protecting citizens from criminals, but also requires protecting citizens from police and prosecutors who might falsely accuse them of being criminals. The criminal justice system cannot be viewed as effective unless it is also accurate, and accuracy not only requires that guilty people are convicted, but also that innocent people are not convicted.<sup>26</sup> The critical importance of accuracy in a normative theory of legitimacy is expressed most clearly by Laudan: “Truth, while no guarantee of justice, is an essential precondition for it. Public legitimacy, as much as justice, demands accuracy in verdicts.”<sup>27</sup> We would extend this point to note that the effectiveness of the criminal justice system also requires that the innocent are not needlessly pursued by the police or prosecuted.

The measurement of accuracy may be viewed as both easy and nearly impossible. Accuracy is quite difficult to measure in real criminal cases because the ground truth of the suspect’s guilt is unknown. As a result, eyewitness research relies largely on the outcomes of experimental simulations of crimes, rather than the outcomes of actual crime investigations.<sup>28</sup> The crimes are staged and the “perpetrator,” typically an actor and confederate of the experimenter, is known to a certainty, and thus the accuracy of given witness or jury decision is also known. However simple this may appear, the problem of measuring accuracy is not simple. First, one still needs a measure of overall accuracy that takes into account the different ways that a witness can be correct or incorrect (an issue over which there is considerable debate), and second, the accuracy from experimental studies needs to be translated to the *expected* accuracy in actual criminal investigations.

We should also be clear that effectiveness does not reduce only to accuracy. Some errors may be more costly and problematic than others, and some errors may have more opportunity to occur than others.<sup>29</sup> Effectiveness requires accuracy, but

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21. BEETHAM, *THE LEGITIMATION OF POWER* (1991), *supra* note 9, at 183.

22. Justice Tankebe, *Viewing Things Differently: The Dimensions of Public Perceptions of Police Legitimacy*, 51 *CRIMINOLOGY* 103, 116 (2013).

23. *Id.*

24. See TOM R. TYLER & YUEN J. HUO, *TRUST IN THE LAW: ENCOURAGING PUBLIC COOPERATION WITH THE POLICE AND COURTS* (Russell Sage Found. 2002).

25. Herbert L. Packer, *Two Models of the Criminal Process*, 113 *U. PA. L. REV.* 1 (1964).

26. LARRY LAUDAN, *TRUTH, ERROR, AND CRIMINAL LAW: AN ESSAY IN LEGAL EPISTEMOLOGY* (Cambridge Univ. Press 2006); Steven E. Clark, *Costs and Benefits of Eyewitness Identification Reform: Psychological Science and Public Policy*, 7 *PERSP. PSYCHOL. SCI.* 238 (2012); Erik Lillquist, *Improving Accuracy in Criminal Cases*, 41 *U. RICH. L. REV.* 897 (2007).

27. LAUDAN, *supra* note 26, at 3.

28. Gary L. Wells et al., *From the Lab to the Police Station: A Successful Application of Eyewitness Research*, 55 *AM. PSYCHOLOGIST*, 581 (2000).

29. Regarding opportunity, the issue is about base rates, the proportion of identification procedures that include a guilty suspect relative to the proportion of identification procedures that include an innocent suspect. A false identification error can only occur if an innocent suspect is in the

also requires the right balance of different kinds of errors. To make this point concrete, most would likely agree that a false conviction of the innocent is a worse error than a false acquittal of the guilty.<sup>30</sup> Thus, it is not enough to minimize the overall error rate; rather one needs to minimize the more costly error relative to the less costly error.

### Procedural Justice

The central premise of theories of procedural justice is that justice lies primarily in the process, rather than the outcomes. There is much debate about the extent to which procedural justice should be viewed as a subjective psychological construct that reflects what people believe, and how they feel about their interactions with authorities, or a normative construct that can be (and perhaps should be) derived from basic principles of justice rather than people's subjective appraisals.<sup>31</sup> Psychological and normative theories of procedural justice have been developed, discussed, and applied in a wide range of criminal justice and organizational settings. However, a systematic and detailed theory of procedural justice has not, to our knowledge, been developed or applied specifically to eyewitness identification. The development and application of such a theory are both important and timely. Psychological theories of procedural justice focus on the quality of human interactions and relationships. Eyewitness identification is, at its core, an interaction between two people, a witness and a person conducting the identification, usually a police officer or detective. It is an interaction with profound consequences for a third person, the person who is suspected of the crime, who is often not present, not part of the interaction, and if present, has little say about the interaction or how the identification is conducted.<sup>32</sup> The focus on procedural justice makes an important point that the nature of this interaction may have important implications beyond the accuracy of its outcome.

### The Importance of Legitimacy

In the broadest terms, the legitimacy of the government is essential to maintain social institutions and social order.<sup>33</sup> More specific to the issue of eyewitnesses, the

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lineup, and a false non-identification error can only occur if a guilty suspect is in the lineup. *See* Clark, *supra* note 26, at 246–47.

30. 2 WILLIAM BLACKSTONE, COMMENTARIES ON THE LAWS OF ENGLAND 352 (Univ. of Chi. Press) (1769); Alexander Volokh, *N Guilty Men*, 146 U. PA. L. REV. 173 (1997).

31. *See* BEETHAM, THE LEGITIMATION OF POWER (1991), *supra* note 9, at 3–15; Solum, *supra* note 12, at 265–66.

32. As we will discuss later, identification procedures often use photographs rather than actual, live people; consequently, the suspect is often not present at the identification. A 2012 survey conducted by the Police Executive Research Forum reported that only 21.4% of police agencies that responded to the survey indicated that they conducted live lineups, and then only rarely—on average two per year. Although a suspect has the right to counsel at such a live lineup, the suspect does not have the right to refuse to participate. *See, e.g.,* *People v. Ellis*, 65 Cal. 2d 529 (1966). Also, although counsel may note concerns about the conduct of the lineup, for example regarding the appropriateness of the fillers, those conducting the lineup are not required to make changes based on those concerns.

33. TYLER, WHY PEOPLE OBEY THE LAW, *supra* note 8; Tyler, *Procedural Justice*, *supra* note 8; Tyler, *Psychological Perspectives*, *supra* note 8; TYLER & HUO, *supra* note 24.

two elements of legitimacy, effectiveness (which includes accuracy) and procedural justice, are assumed to play critical roles in the participation of eyewitnesses in the criminal justice system. Eyewitness participation in the justice system often requires a substantial commitment of time and energy, and may involve enormous personal risk. There is evidence to suggest that people are less likely to report crime<sup>34</sup> and juries are less likely to convict<sup>35</sup> to the extent that they do not trust the police and see them as legitimate legal authorities.

Our conceptualization of legitimacy assumes that both components—effectiveness and procedural justice—are necessary and that each component provides non-redundant, policy-relevant information. This non-redundancy seems like a reasonable assumption; however, it runs counter to the view that process and outcome are aligned such that just processes should lead to correct outcomes. An important implication of this view—that effectiveness and procedural justice are non-redundant and singly insufficient—is that analyses based on effectiveness and analyses based on procedural justice may not converge on the same policy answers. A procedure that increases accuracy and effectiveness may violate principles of procedural justice, and alternatively, a procedure deemed to be fair and just may result in a decrease in accuracy and effectiveness.

The remainder of this Article is organized as follows: following this brief Introduction, Section I describes the eyewitness identification paradigm and provides an overview of recommendations and reforms. Section II presents an effectiveness model for eyewitness identification based on accuracy and utility—including its limitations for justice policy. Section III develops a procedural justice framework for eyewitness identification, and Section IV explores how the framework would apply to eyewitness identification reform. Section V reflects on the Utility of the Legitimacy Framework in shaping criminal justice policy on eyewitness identification.

## I. EYEWITNESS IDENTIFICATION IN CRIMINAL INVESTIGATIONS AND LABORATORY STUDIES

### *A. Basic Procedures*

Our focus is on two identification procedures commonly used in police investigations: showups and lineups. In a showup procedure, the witness is

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34. See, e.g., Kristina Murphy & Adrian Cherney, *Understanding Cooperation with Police in a Diverse Society*, 52 BRIT. J. CRIMINOLOGY 181 (2012); Jason Sunshine & Tom R. Tyler, *The Role of Procedural Justice and Legitimacy in Shaping Public Support for Policing*, 37 L. & SOC'Y REV. 513 (2003); Tom R. Tyler & Jeffrey Fagan, *Legitimacy and Cooperation: Why Do People Help the Police Fight Crime in Their Communities?*, 6 OHIO ST. J. CRIM. L. 231 (2008). These studies show a relationship between perceived legitimacy and citizens' general willingness to report crime. See Tammy R. Kochel et al., *Examining Police Effectiveness as a Precursor to Legitimacy and Cooperation with Police*, 30 JUST. Q. 895 (2013) for results showing a relationship between perceived legitimacy and the actual reporting of crime.

35. Amy Farrell et al., *Juror Perceptions of the Legitimacy of Legal Authorities and Decision Making in Criminal Cases*, 38 L. & SOC. INQUIRY 773 (2013).



presented with a single suspect, who may be guilty or innocent, and a simple question: “Is this the person who committed the crime?” The showup goes by other names as well—field identification or curbside identification, for example—which conveys the fact that the procedure is typically conducted in the “field” where the suspect is detained by police. Showups are typically conducted when a suspect has been identified by police soon after the crime occurred.<sup>36</sup> The prototypical case is a robbery, after which the victim immediately calls 911, police search the area and locate a person who matches the victim’s description of the perpetrator. The witness’s response may be categorized as shown in Table 1. A positive identification of a guilty suspect is called a *correct identification*, and a positive identification of an innocent suspect is called a *false identification*. A non-identification of a guilty suspect is called a *false non-identification* and a non-identification of an innocent suspect is called a *correct non-identification*.

A typical lineup procedure also presents the witness with a single suspect, along with a number of other individuals called *fillers*, who are known to be innocent.<sup>37</sup> Lineups may be conducted live, at the police department or jail, but are often conducted with a set of head-and-shoulders mugshots. They are sometimes called photo montages, or, given the standard practice of having five fillers with a single suspect, they are sometimes called “six-packs.”<sup>38</sup> The response outcomes are categorized in the same way as outcomes for a showup, with the addition of a filler identification, which is always a known error.

In real criminal investigations, it is difficult to know whether the suspect is guilty or innocent, which makes it difficult to “score” the data. Is a suspect identification a correct identification of the perpetrator or a false identification of an innocent person? Because of this *ground truth* uncertainty about the suspect’s guilt, most eyewitness identification research is conducted using a staged crime procedure. Sometimes the staged crime is presented to participants live, but quite often it is filmed and presented to participants on video. Importantly, because the crime is staged, the identity of the perpetrator is known to a certainty.

### B. Overview of Recommendations and Reforms

Eyewitness research has long had a reform mission.<sup>39</sup> The need for reform assumes that something is amiss, and that it can, and should be “fixed.” Social

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36. Richard Gonzalez et al., *Response Biases in Lineups and Showups*, 64 J. PERSONALITY & SOC. PSYCH. 525, 525 (1993).

37. GERARD MURPHY ET AL., NATIONAL SURVEY OF EYEWITNESS IDENTIFICATION PROCEDURE IN LAW ENFORCEMENT AGENCIES, 1994–2012 141 (2014).

38. Neal S. McNabb et al., *Voluntary Adoption of Evidence-Based Practices by Local Law Enforcement: Eyewitness Identification Procedures in Arkansas, Iowa, Kansas, Missouri, and Nebraska*, 20 J. GEND. RACE & JUST. 509, 514 (2017).

39. See, e.g., Sheila M. Seelau & Gary L. Wells, *Applied Eyewitness Research: The Other Mission*, 19 L. & HUM. BEHAV. 319 (1995); Gary L. Wells, *Applied Eyewitness-Testimony Research: System Variables and Estimator Variables*, 36 J. PERSONALITY & SOC. PSYCHOL. 1546 (1978).

scientists and legal scholars began documenting eyewitness errors in real cases<sup>40</sup> and experimental simulations<sup>41</sup> over one hundred years ago, and the U.S. Supreme Court took up the issue of eyewitness identification in three cases, The *Wade* Trilogy, in 1967.<sup>42</sup> However, little progress was made until the 1990s, when DNA analyses established a clear link between false identification and false convictions.<sup>43</sup> The American Psychology and Law Society (APLS) commissioned a white paper to make recommendations for eyewitness identification procedures, which was published in 1998,<sup>44</sup> and the Department of Justice formed a task force to make recommendations, which were published in 1999.<sup>45</sup> Most recently, the issue came before a committee of the National Research Council, which released its report and recommendations in 2014.<sup>46</sup> The recommendations for reform that have arisen from these publications are summarized below:

1. Although not banned in any jurisdiction, the showup procedure has been “widely condemned” by legal scholars and social scientists.<sup>47</sup>
2. Lineups should be constructed fairly in such a way that the suspect does not stand out, by selecting fillers that match the witness’s description of the perpetrator.<sup>48</sup>
3. Witnesses should be provided with instructions that include the following: the perpetrator may not be in the lineup; it is as important to clear innocent persons from suspicion as to identify guilty parties, and the investigation will continue whether or not they make an identification.<sup>49</sup>

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40. See, e.g., COMMITTEE OF INQUIRY INTO THE CASE OF MR. ADOLF BECK, REPORT FROM THE COMMITTEE; TOGETHER WITH MINUTES OF EVIDENCE, APPENDIX, AND FACSIMILES OF VARIOUS DOCUMENTS (1904).

41. See, e.g., HUGO MÜNSTERBERG, *The Memory of the Witness*, in ON THE WITNESS STAND: ESSAYS OF PSYCHOLOGY AND CRIME 39, 45 (1908).

42. *Gilbert v. California*, 388 U.S. 263 (1967); *Stovall v. Denno*, 388 U.S. 293 (1967); *United States v. Wade*, 388 U.S. 218 (1967).

43. See CONNORS ET AL., *supra* note 1, at 24.

44. Wells et al., *supra* note 2.

45. U.S. DEP’T OF JUSTICE, NCJ 178240, EYEWITNESS EVIDENCE: A GUIDE FOR LAW ENFORCEMENT (1999).

46. NAT’L RESEARCH COUNCIL, IDENTIFYING THE CULPRIT: ASSESSING EYEWITNESS IDENTIFICATION (2014).

47. *Stovall*, 388 U.S. at 302; see also PATRICK M. WALL, EYE-WITNESS IDENTIFICATION IN CRIMINAL CASES 28 (1965) (describing the showup procedure as “the most grossly suggestive identification procedure now or ever used by the police”); Nancy K. Steblay et al., *Eyewitness Accuracy Rates in Police Showup and Lineup Presentations: A Meta-Analytic Comparison*, 27 L. & HUM. BEHAV. 523, 539 (2003) (noting the “showup’s potential for suggestibility—which worries legal professionals and eyewitness experts”).

48. U.S. DEP’T OF JUSTICE, *supra* note 45, at 29.

49. NAT’L RESEARCH COUNCIL, *supra* note 46, at 107; U.S. DEP’T OF JUSTICE, *supra* note 45, at 32. There are many variations on these recommended instructions. For example, Connecticut General Statute 54-1p includes an instruction that “the eyewitness should not feel compelled to make an identification” and “the eyewitness should take as much time as needed in making a decision.” CONN. GEN. STAT. § 54-1P (2012).

4. The members of a lineup should be presented sequentially, rather than simultaneously.<sup>50</sup>
5. The lineup should be presented by a blind lineup administrator who is either uninvolved in the investigation (and thus blind to any information about the case) or is blinded as to the position of the suspect in the lineup.<sup>51</sup>
6. Police should obtain a confidence statement from the witness at the time of the identification, but these statements of confidence should be treated cautiously by legal decision-makers.<sup>52</sup>

These recommendations have been adopted through the formal process of state-level legislation, and through the less formal process of developing “best practices” at the local level.<sup>53</sup> The primary stated goal for these reforms is that they increase the accuracy of eyewitness identification evidence and legal outcomes that rely on eyewitness evidence. Given the important role of accuracy, we need to have a clear model and clear measures of accuracy, which we turn to next.

## II. LEGITIMACY, ACCURACY, AND THE EFFECTIVENESS OF EYEWITNESS IDENTIFICATION

Our theoretical framework borrows heavily from signal detection theory, which was developed in the 1940s and 1950s and later applied to research in psychophysics,<sup>54</sup> recognition memory,<sup>55</sup> and many other decision tasks across a wide array of disciplines, including diagnostic medicine,<sup>56</sup> violence risk analysis,<sup>57</sup> crime

50. See, e.g., Eyewitness Identification Reform Act of 2007, N.C. GEN. STAT. § 15A-284.52(B)(2) (2017); Memorandum from John J. Farmer, Jr., Attorney Gen., N.J., to Cty. Prosecutors et al. (Apr. 18, 2001), <http://www.state.nj.us/lps/dcj/agguide/photoid.pdf> [<https://perma.cc/BJ38-V753>].

51. See, e.g., Eyewitness Identification Reform Act of 2007, N.C. GEN. STAT. § 15A-284.52(B)(1) (2017); Wells et al., *supra* note 2, at 627; Memorandum from John J. Farmer, Jr., *supra* note 50.

52. See, e.g., U.S. DEPT OF JUSTICE, *supra* note 45, at 32; Gary L. Wells & Deah S. Quinlivan, *Suggestive Eyewitness Identification Procedures and the Supreme Court’s Reliability Test in Light of Eyewitness Science: 30 Years Later*, 33 L. & HUM. BEHAV. 1, 12 (2009) (“The problem with using eyewitness certainty as a second-prong reliability factor . . . is that it has already been determined . . . that a suggestive procedure was used . . .”).

53. The Innocence Project provides an overview of policy reforms for all fifty states. *Policy Reform*, INNOCENCE PROJECT, <https://www.innocenceproject.org/policy/> [<https://perma.cc/5ES9-YJX4>] (last visited Mar. 20, 2018).

54. See DAVID M. GREEN & JOHN A. SWETS, SIGNAL DETECTION THEORY AND PSYCHOPHYSICS 1–2 (1966).

55. See, e.g., James P. Egan, *Recognition Memory and the Operating Characteristic*, in HEARING & COMMUN. LAB., IND. UNIV., TECHNICAL NOTE AFCRC-TN-58-51, AD-152650 (1958); John T. Wixted, *Dual-Process Theory and Signal-Detection Theory of Recognition Memory*, 114 PSYCHOL. REV. 152, 152 (2007).

56. See, e.g., Lee B. Lusted, *Signal Detectability and Medical Decision-Making*, 171 SCI. 1217, 1271 (1971).

57. See, e.g., Douglas Mossman, *Assessing Predictions of Violence: Being Accurate About Accuracy*, 62 J. CONSULTING & CLINICAL PSYCHOL. 783 (1994); Marnie E. Rice & Grant T. Harris, *Violent Recidivism: Assessing Predictive Validity*, 63 J. CONSULTING & CLINICAL PSYCHOL. 737 (1995).

investigation,<sup>58</sup> and criminal law.<sup>59</sup> What all of these applications have in common is that there is a binary decision based on evidence that is variable and uncertain—whether a particular stimulus has been presented, whether a test stimulus was presented before, whether a spot on an image shows a tumor (or just a shadow), whether an offender can be released, or whether a defendant is guilty.

The model that we describe below is a variant of signal detection theory and closely follows the assumptions of a computational model called the WITNESS model.<sup>60</sup> The model assumes that, at the time of the crime, the witness stores information about the perpetrator in memory.<sup>61</sup> Some features of the perpetrator are stored correctly, some incorrectly, and some are not stored at all.<sup>62</sup> Some of the information stored in memory will be lost or distorted as memories change or fade over time. Later, at the time of the identification, which may be minutes, days, or even years later, the witness's identification decision is based on a memory-matching process that compares the features of each lineup member to the features of the perpetrator that are stored in memory.<sup>63</sup> For a one-person lineup, of course, only the suspect is compared to the witness's memory trace for the perpetrator. For a lineup, all members of the lineup are compared to the witness's memory trace for the perpetrator. These match values, which represent the similarity between each lineup member and the witness's memory of the perpetrator, provide the basis for eyewitness identification decisions based on the witness's decision rule.

For a one-person showup, the decision rule is simple. If the match of the suspect to memory is sufficiently strong, the witness identifies that person as the perpetrator, and makes no identification otherwise. The decision rule for a lineup is a bit more complicated because there is more than one match value to be evaluated. As we will discuss later, there are many decision rules that could be used to make identification decisions for a lineup. For now, we will describe one very simple rule called the *Best Above Criterion Rule*, according to which the witness identifies the lineup member who is the best match to his or her memory of the perpetrator, provided that the match is sufficiently strong.<sup>64</sup> At this level the model

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58. See, e.g., Craig Bennell et al., *Addressing Problems with Traditional Crime Linking Methods Using Receiver Operating Characteristic Analysis*, 14 LEGAL & CRIMINOLOGICAL PSYCHOL. 293 (2009).

59. See, e.g., LAUDAN, *supra* note 26; Richard S. Bell, *Decision Theory and Due Process: A Critique of the Supreme Court's Lawmaking for Burdens of Proof*, 78 J. CRIM. L. & CRIMINOLOGY 557 (1987); Michael L. DeKay, *The Difference Between Blackstone-Like Error Ratios and Probabilistic Standards of Proof*, 21 L. & SOC. INQUIRY 95 (1996); Erik Lillquist, *Recasting Reasonable Doubt: Decision Theory and the Virtues of Variability*, 36 U.C. DAVIS L. REV. 85 (2002).

60. See Steven E. Clark, *A Memory and Decision Model for Eyewitness Identification*, 17 APPLIED COGNITIVE PSYCHOL. 629 (2003) [hereinafter Clark, *Memory and Decision Model*]; Steven E. Clark et al., *Probative Value of Absolute and Relative Judgments in Eyewitness Identification*, 35 L. & HUM. BEHAV. 364 (2011) [hereinafter Clark, *Probative Value*].

61. See Clark, *Memory and Decision Model*, *supra* note 60, at 631.

62. *Id.*

63. *Id.* at 633.

64. *Id.* at 651.

is very simple, but this level of description makes it difficult to know what the model predicts. For that we need more detail.

The assumptions of the model are formalized quantitatively so that it may generate quantitative predictions that can be compared to experimental data. These comparisons between predictions and data provide insight into which of the model's assumptions are correct and which are in need of revision.

The model assumes that at the time of the identification, each feature of the perpetrator will be represented correctly in memory with some probability  $p$ . The value of  $p$  depends on the conditions of the witness's observation, and is assumed to increase as the witness's opportunity to observe the perpetrator improves. Generally speaking, one would expect the value of  $p$  to be higher if the witness sees the perpetrator for two minutes than if the witness sees the perpetrator for only a few seconds. The value of  $p$  is also affected by the passage of time, and is assumed to decrease as time passes. Finally, although it was not included in the original model, it is also reasonable to assume that the value of  $p$  is affected by errors in memory retrieval as well as errors in the matching process.<sup>65</sup>

The probabilistic nature of memory produces variability in the match between a lineup member and the witness's memory of the perpetrator. Thus, the match of a given lineup member is not represented by a single value, but rather by a distribution of values. These distributions, based on 10,000 simulations of the model, are illustrated in Figure 1. The relevant distributions for showups are shown on the left-hand side of the figure, and the relevant distributions for six-person lineups are shown on the right-hand side of the figure. In each case, better memory conditions are shown in the top of the figure and poorer memory conditions are shown in the bottom of the figure.

For showups, the figure shows the match distributions for both guilty and innocent suspects. It is clear that on average, guilty suspects are more similar to the memory representation of the perpetrator than are innocent suspects, but the two distributions overlap such that some guilty suspects will match memory less well than some innocent suspects. This overlap in the distributions of match values for guilty and innocent suspects (shown in dark gray) represents the ability of the memory system to discriminate between guilty and innocent suspects.

For lineups, the right-hand side of the figure shows the distributions for guilty and innocent suspects, for those cases in which the suspect is the best match (over the fillers). Discriminability between guilty and innocent suspects again depends on the overlap of the two distributions, but also depends on the probabilities that guilty and innocent suspects will be the best matches in their respective lineups.

A complete description of the model requires a more precise description of the decision rules. Up to now, we have used the intuitive but rather vague wording

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65. The idea of retrieval errors in the matching process is similar to proposals made by Charles A. Goodsell et al., *Exploring the Sequential Lineup Advantage Using WITNESS*, 34 L. & HUM. BEHAV. 445, 448 (2010), and by John T. Wixted & Laura Mickes, *A Signal-Detection-Based Diagnostic-Feature-Detection Model of Eyewitness Identification*, 121 PSYCHOL. REV. 262, 266 (2014).

that identifications are made if the match (or best match) is *sufficiently* strong. This *sufficiency* needs to be quantified. More formally, for showups, the suspect is identified if the match to memory exceeds a criterion value  $c_s$ , illustrated in the figures by a vertical line. An identification is made if the match exceeds  $c_s$ , and a non-identification decision is made if the match is lower than  $c_s$ . Likewise, for lineups, the best matching lineup member (whether it is the suspect or a filler) is identified if the match exceeds  $c_L$ , and a non-identification decision is made if the match is lower than  $c_L$ .

The placement of the decision criteria  $c_s$  or  $c_L$  may vary. A witness who feels compelled to make an identification is assumed to have a lower criterion than a witness who feels reluctant to make an identification. Importantly, the placement of the decision criterion has no effect on diagnostic accuracy (i.e., the ability to distinguish between suspects who are guilty and suspects who are innocent). Adjustments of the criterion do not change the overlap of the distributions. Rather, the placement of the criterion determines the kinds of errors witnesses will make. For example, as the criterion is shifted upward (to the right in the Figure), the false identification rate (for suspects who are innocent) will decrease, but the false non-identification rate (for suspects who are guilty) will also increase.

#### A. Accuracy

The research and the reforms have focused largely on false identification errors, with less consideration of correct identifications.<sup>66</sup> This emphasis is largely due to the enormous consequences of false identification errors, but it is also due in part to a widely-held assertion that false identification rates can be reduced with little or no loss of correct identifications.<sup>67</sup> If this claim were true—that the reforms reduced the false identification rate with no loss of correct identifications—there would be no need to consider conflicting values, and a policy decision to not implement the reforms would be objectively irrational. However, this claim is unambiguously contradicted by data.<sup>68</sup> To the contrary, correct and false identification rates generally covary, such that changes in identification procedures that reduce the false identification rate also reduce the correct identification rate.<sup>69</sup> Consequently, any measure of eyewitness identification accuracy must consider changes in both correct and false identification rates.

There has been some controversy about how best to calculate accuracy,<sup>70</sup> but two measures derived directly from signal detection theory are  $d'$  and the area under

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66. See, e.g., BRIAN L. CUTLER & STEVEN D. PENROD, *MISTAKEN IDENTIFICATION: THE EYEWITNESS, PSYCHOLOGY, AND THE LAW* (1995).

67. See Wells et al., *supra* note 2, at 637.

68. See Clark, *supra* note 26, at 238–39; Matthew A. Palmer & Neil Brewer, *Sequential Lineup Presentation Promotes Less-Biased Criterion Setting but Does Not Improve Discriminability*, 36 L. & HUM. BEHAV. 247, 247 (2012).

69. Clark, *supra* note 26, at 239.

70. See John T. Wixted & Laura Mickes, *Evaluating Eyewitness Identification Procedures: ROC Analysis and Its Misconceptions*, 4 J. APPLIED RES. MEMORY & COGNITION 318 (2015); John T. Wixted

the Receiver Operating Characteristic (ROC) curve.<sup>71</sup> A critically important property of these two measures is that they are either unaffected by criterion placement ( $d'$ ) or they consider the wide range of possible criterion placements (area under the ROC curve). This contrasts with other measures of accuracy, such as the ratio of correct- to-false identification rates, which is biased such that the ratio becomes very large as responding becomes more conservative, even if diagnostic accuracy decreases.<sup>72</sup> Conceptually,  $d'$  is given by the difference in the means of the guilty and innocent distributions, divided by the standard deviation of the innocent distribution,  $\mu_G - \mu_I / \sigma_I$ .<sup>73</sup> The calculation of  $d'$  typically assumes that the distributions are normal with equal variances. With these simplifying assumptions,  $d'$  is easily calculated as the difference between the z-transformed correct and false identification rates,  $d' = z(C) - z(F)$ .

The second method plots the Receiver Operating Characteristic (ROC) curve and then calculates the area under the curve (AUC). The ROC curve plots pairs of correct and false identification rates as the criterion varies from high (conservative) to low (liberal). Experimentally, this is often accomplished by asking participants to rate the confidence of their decisions. Confidence is a proxy for the underlying memory strength (or match-to-memory); thus, lineup members who match memory more closely will be identified with greater confidence than lineup members who match memory less closely.

Figure 2 shows the ROC curves derived from the distributions for showups and lineups illustrated in Figure 1. Each point on the curve represents a pair of correct and false identification rates for a given criterion, ranging from the most conservative, in the lower-left corner, to the most liberal, shown in the upper-right corner. At the conservative end, witnesses make very few positive identifications, and at the upper-right, most liberal end of the curve, witnesses are making a very large number of positive identifications. Thus, the curve provides a family of correct and false identification rates across a range of possible criterion placements. The diagonal line in the Figure represents a complete lack of diagnostic accuracy where the correct and false identification rates are the same. High accuracy is shown to the extent that the curve pulls away from the diagonal line and toward the upper left-hand corner. We should point out that ROC curves typically extend from the lower-left corner, representing such conservative responding that both the true and false positive rates are zero, to the upper-right corner representing such liberal responding that the true and false positive rates are both 1.0. This is true for

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& Laura Mickes, *ROC Analysis Measures Objective Discriminability for Any Eyewitness Identification Procedure*, 4 J. APPLIED RES. MEMORY & COGNITION 329 (2015); cf. Gary L. Wells et al., *ROC Analysis of Lineups Does Not Measure Underlying Discriminability and Has Limited Value*, 4 J. APPLIED RES. MEMORY & COGNITION 313 (2015).

71. For reviews of signal detection theory, see, e.g., NEIL A. MACMILLAN & C. DOUGLAS CREELMAN, *DETECTION THEORY: A USER'S GUIDE* (1991); THOMAS D. WICKENS, *ELEMENTARY SIGNAL DETECTION THEORY* (2002).

72. See Clark, *supra* note 26, at 244.

73. MACMILLAN & CREELMAN, *supra* note 71, at 8.

showups, but it is not true for lineups. The reason is that, for lineups, even if all witnesses make an identification of *someone* from the lineup, some of those identifications will be fillers, so the suspect ID rates will not reach 1.0, even when every witness makes a positive identification.

As a general rule within this framework, the policy-maker should always prefer conditions that produce greater diagnostic accuracy, that is, conditions associated with the higher ROC curve.<sup>74</sup> The criterion placement is a secondary consideration *for the procedure that has the higher ROC*, but is not relevant to the preference between procedures. There is little point in choosing a procedure that achieves a lower level of diagnostic accuracy and adjusting the criterion on a lower ROC.

### B. Utility

It is important to note that the placement of the decision criterion is justice neutral. There is no point on the decision axis at which the criterion shifts from just to unjust or from legitimate to illegitimate. We will argue later that the justice issue is not about *where* the decision criterion is placed, but rather is about *how* the decision criterion is placed. Peterson, Birdsall, and Fox showed that one can determine the optimal criterion placement—that is, the criterion that maximizes *expected utility*—based on the values of the outcomes and the guilty base rate (the proportion of identification procedures in which the suspect is guilty).<sup>75</sup> The expected utility for a given identification procedure, with a given criterion, can be calculated in the standard way as the sum of outcome-value products. Thus,

$$E(U) = [p(CI)v(CI) - p(FN)v(FN)] p(g) + [p(CN)v(CN) - p(FI)v(FI)] p(i),$$

where  $E(U)$  refers to the expected utility,  $p(CI)$  denotes the probability of a correct identification,  $v(CI)$  denotes the value associated with a correct identification,  $p(FN)$  denotes the probability of a false non-identification,  $v(FN)$  denotes the value associated with a false non-identification,  $p(CN)$  denotes the probability of a correct non-identification,  $v(CN)$  denotes the value associated with a correct non-identification,  $p(FI)$  denotes the probability of a false identification, and  $v(FI)$  denotes the value associated with a false identification. The terms  $p(g)$  and  $p(i)$  are the base rates or proportions of identification procedures in which the suspect is guilty or innocent, where  $p(i) = 1 - p(g)$ . We will have more to say about these base rates later. The calculation of expected utility is conceptually straightforward, but requires one to estimate the values of a large number of parameters: the probabilities of the various outcomes, the values associated with the possible outcomes, and the opportunities for the various outcomes as represented by the base rate parameters. As it turns out, this cumbersome calculation can be reduced to a two-parameter

74. Clark et al., *supra* note 2, at 179.

75. See W.W. Peterson, T.G. Birdsall & W.C. Fox, *The Theory of Signal Detectability*, 4 TRANSACTIONS INST. RADIO ENGINEERS PROF. GROUP INFO. THEORY 171 (1954).



model that provides an objective preference rule for determining the optimal criterion placement.<sup>76</sup>

For present purposes, and to map the classic Expected Utility Model to our Legitimacy Model, we will equate effectiveness with utility. Our conceptualization of effectiveness depends on diagnostic accuracy and optimal criterion placement based on expected utility. Put another way, the Effectiveness Model marries the Accuracy Model and the Expected Utility Model.

### *C. Evaluation of the Effectiveness Model*

The Effectiveness Model accounts for a wide range of phenomena in memory and decision-making, suggesting that it captures important aspects of the psychological processes that underlie eyewitness identification decisions, and the Utility Model extends the Accuracy Model to provide a normative framework for policy decisions. The policy decision-maker necessarily maximizes utility if he or she follows a small number of “intuitively appealing” axioms, and the application of these axioms will maximize average utility in the long run.<sup>77</sup> The utility model provides a clean, conceptual separation between diagnostic accuracy and criterion placement and clarifies and simplifies policy decisions.

However, this framework also has a number of important limitations—some of which are close relatives of common criticisms associated with utilitarianism, and there is no point in reciting those criticisms here.<sup>78</sup> More specific to the present application, the parameters of the Utility Model are difficult to measure and will certainly vary across circumstances. Specifically, one needs to know the correct and false identification rates, the guilty and innocent base rates, and the cost ratio for false identification and false non-identification errors. We consider these next.

#### **Estimates of Correct and False Identification Rates**

The correct and false identification rates from actual criminal investigations are unknown, and thus, they are often estimated from experimental data. There are several reasons to question whether these data provide useful estimates of the correct and false identification rates that come from actual criminal investigations. Experimental simulations cannot capture the chaos, fear, and emotion experienced by a witness or victim of an actual crime. In addition, the amount of time that passes between the crime and the identification is much shorter in experimental simulations—often just a few minutes—than in actual criminal investigations.<sup>79</sup> In addition, experimental witnesses know that their responses have no real-world

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76. See Clark, *supra* note 26, at 248 (based on derivations by Stephen J. Ceci & Richard D. Friedman, *The Suggestibility of Children: Scientific Research and Legal Implications*, 86 CORNELL L. REV. 34, 71–84 (2000)).

77. See DeKay, *supra* note 59, at 110; JOHN VON NEUMANN & OSKAR MORGANSTERN, *THEORY OF GAMES AND ECONOMIC BEHAVIOR* 617–28 (1953).

78. *But see, e.g.*, JOHN RAWLS, *A THEORY OF JUSTICE* 22–26 (Harvard Univ. Press rev. ed. 1999).

79. Heather D. Flowe et al., *Testing the Reflection Assumption* (unpublished manuscript) (on file with author).

consequences; a failure to identify the suspect in an experimental lineup does not unleash a dangerous person on the community or initiate the prosecution of an innocent person. Justice is neither carried nor miscarried in the experimental laboratory.

It is difficult to know how these differences might distort the estimation of guilty-innocent discriminability in criminal investigations. One might expect differences in overall accuracy or differences in criterion placement to the extent that a real eyewitness may feel more or less compelled to make an identification than an experimental witness. However, neither of these factors should affect the relative differences in guilty-innocent discriminability.

Consistent with this prediction (and the general principle underlying it), there is evidence that the patterns of results from experimental simulations align with analyses from actual criminal investigations. Specifically, identification procedures that show higher discriminability in experimental simulations also show higher discriminability in actual cases.<sup>80</sup> This does not entirely put the issue to rest because discriminability in real cases is difficult to estimate, and there are too few studies of eyewitness identification in real criminal investigations. That said, the experimental data are the best measures of accuracy currently available, and they have been determined to be sufficiently reliable to serve as the basis for the reforms that have been adopted in many state and local law enforcement jurisdictions.<sup>81</sup> If we reject the estimates of diagnostic accuracy based on the correct and false identification rates obtained in experimental simulations, we would have little or no scientific basis to evaluate the reforms that have already been adopted, and eyewitness identification policy would be guided only by procedural justice considerations.

We may carry on even if the experimental simulations do not provide perfect estimates of diagnostic accuracy in real criminal investigations. However, the guilty base rates and the values associated with the outcomes are more problematic. The guilty base rate can only be estimated from real criminal investigations (there is no naturally occurring guilty base rate in laboratory studies), and the cost ratios involve considerable objective and subjective assessment.

### Outcome Values

Objectively, one could (at least in theory) estimate some of the error costs in terms of the likelihood of correcting the error. The cost of a false identification error would be much reduced if such errors were routinely caught—contradicted by other evidence, or detected by police, attorneys, judges, or juries. Likewise, the cost of a false non-identification would be much reduced to the extent that the non-

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80. Karen L. Amendola & John T. Wixted, *Comparing the Diagnostic Accuracy of Suspect Identifications Made by Actual Eyewitnesses from Simultaneous and Sequential Lineups in a Randomized Field Trial*, 11 J. EXPERIMENTAL CRIMINOLOGY 263 (2015); John T. Wixted et al., *Estimating the Reliability of Eyewitness Identifications from Police Lineups*, 113 PROC. NAT'L ACAD. SCI. 304 (2016).

81. See, e.g., STATE OF WISCONSIN, MODEL POLICY AND PROCEDURE FOR EYEWITNESS IDENTIFICATION (2005) (citing scientific research as the basis of policies and reforms); Memorandum from John J. Farmer, Jr., *supra* note 50 (same).

identified perpetrator would be brought to justice based on other evidence.<sup>82</sup> One could also estimate the various objective monetized costs associated with criminal justice errors.

The assessment of objective costs is a considerable task, but subjective assessments are arguably even more difficult. How does one estimate the cost associated with a false identification error that could potentially result in years in prison, or even an execution of an innocent person? How does one estimate the cost associated with a false non-identification that could potentially allow a dangerous criminal to commit acts of violence against other innocent persons? As Clark noted, these questions can be simplified—the five-parameter model (four outcome values and the guilty base rate) can be reduced to a two-parameter model (ratio-of-cost differences and the guilty base rate)—and yet the parameter estimation still defies objective calculation.<sup>83</sup> We would all agree that a false conviction of the innocent is worse than a false acquittal of the guilty—if for no other reason than the false conviction will often involve a false acquittal—as the guilty go free while the innocent are convicted of their crimes. But, how much worse is a false identification than a false non-identification? We may be tempted to recite from Blackstone, “Better that ten guilty persons escape than one innocent suffer,”<sup>84</sup> but there is no law of nature that makes this 10:1 ratio objectively “true.” Indeed, in an expansive and somewhat tongue-in-cheek review, Volokh notes that this normative cost ratio has been declared to be as low as 1:1 and as high as 5000:1.<sup>85</sup> Our utility theory provides a clear and straightforward framework for assessing identification procedures, but requires parameter estimates that may be difficult, if not impossible, to obtain.

Even if we could produce justifiable estimates of the values associated with identification outcomes, they would certainly vary across circumstances in potentially troubling ways. For example, the cost of a false non-identification certainly depends on the number of potential victims in the perpetrator’s future. The cost associated with a non-identification of a serial murderer is surely greater than the cost of a non-identification of a one-off murderer, and therefore, all things being otherwise equal, the criterion for the identification of a serial murder suspect should be more liberal than the criterion for the identification of a one-off murder suspect.<sup>86</sup>

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82. For a comparison between cases in which errors were detected and corrected and cases in which errors were not detected (resulting in false convictions), see Jon B. Gould et al., *Predicting Erroneous Convictions*, 99 IOWA L. REV. 471 (2014).

83. See Ceci & Friedman, *supra* note 76; Clark, *supra* note 26.

84. BLACKSTONE, *supra* note 30, at 352.

85. Volokh, *supra* note 30.

86. Larry Laudan has made a similar point about repeat offenders, whose research shows they are more likely to reoffend. Thus, the cost associated with the non-identification of a repeat offender is higher than the cost associated with the non-identification of a first-time offender. See Larry Laudan, *Taking the Ratio of Differences Seriously: The Multiple Offender and the Standard of Proof, or, Different Strokes for Serial Folks 6* (Jul. 8, 2009) (unpublished manuscript), <https://papers.ssrn.com/>

### Guilty Base Rates

The guilty base rate is a critical parameter in this framework because it constrains the opportunities for false identifications and false non-identifications. This important parameter is both difficult to estimate<sup>87</sup> and variable across jurisdictions, investigators, and cases. In addition, consideration of the guilty base rate leads to some strange policy prescriptions. Specifically, to maximize utility, a high guilty base rate should be associated with a more liberal criterion. This violates the normative view that evidence should be evaluated independently and would seem to make defendants pay a price for the crimes of those who have come before them. The policy to encourage witnesses to use a lower criterion based on a high base rate seems tantamount to telling the suspect, “Ninety percent of people in your shoes are guilty, so we’re going to ask the witness to apply a low bar for identifying you at the lineup!”

It is important to note that the limitations associated with base rate and outcome values apply *only* to issues of criterion placement and are not relevant to considerations of diagnostic accuracy. The policy rule articulated earlier—to prefer identification procedures that produce the highest diagnostic accuracy (as measured by AUC or  $d'$ )—is unaffected by the twists and turns that arise from the base rates and outcome values. This is not to say that the limitations are so narrow that they can be ignored. They come into play primarily in the evaluation of reforms that have little or no effect on diagnostic accuracy, but have a large effect on criterion placement and the trade-off between false identifications and false non-identifications.

Up to now, the social values that we have discussed are those that attach to particular outcomes—for example, the social value that a false conviction of the innocent is worse than a false acquittal of the guilty. But there are other social values that do not attach to specific outcomes, and there may be cases where those values conflict with diagnostic accuracy. We turn our attention to those issues next, through two famously rhetorical questions: Laurence Tribe’s “Question of Regret” and Lawrence Solum’s “Hard Question of Procedural Justice.”

### Not all Incorrect Outcomes are Equally Bad: Tribe’s “Question of Regret” and Solum’s “Hard Question of Procedural Justice”

How much would you regret the erroneous conviction of [a] defendant for armed robbery? . . . [t]he answer must surely be, “It depends.” It depends in part upon the character of the error itself . . . . And it depends even more significantly upon the process that led to the error; one cannot equate the lynching of an innocent man with his mistaken conviction after a fair trial. Indeed, it is at least arguable that there is nothing good or bad about any

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sol3/papers.cfm?abstract\_id=1431616 [https://perma.cc/H6JG-D9WC]. The Utility model would suggest that witnesses should set a lower criterion when the perpetrator is a repeat offender.

87. *But see* Wixted, *supra* note 55.

trial outcome as such; that the process, and not the result in any particular case, is all-important.<sup>88</sup>

Tribe's answer to the "Question of Regret" illustrates the point that, although outcomes are important, ("To be sure, some concern for the mix of correct and erroneous outcomes operates as a constraint"),<sup>89</sup> justice resides to a large extent in the *process*, such that not all errors, not even errors of the very same kind (i.e., a false conviction) have equal status. Tribe's example speaks to Shklar's distinction between misfortune and injustice.<sup>90</sup> The conviction of an innocent person following a fair trial is certainly a misfortune, but perhaps not an injustice. We may think of it as a *false* conviction but not necessarily a *wrongful* conviction. The point is that not all errors are equally bad.

More broadly, and perhaps more pointedly, Solum posed what he called, "The Hard Question of Procedural Justice": "How can we regard ourselves as obligated by legitimate authority to comply with a judgment that we believe (or even know) to be in error with respect to the substantive merits?"<sup>91</sup> Solum's "Hard Question" is motivated by the view, which is certainly true, that error can never be fully vanquished from the justice system. Solum's answer to the "Hard Question," which he has articulated in considerable detail, begins much like Tribe's. "Only just procedures can confer legitimate authority on incorrect outcomes."<sup>92</sup>

#### **Not all Correct Outcomes are Equally Good: The "Or-Else" and "Red Arrow" Identification Procedures**

This last point returns us to eyewitness identification and two hypothetical cases from Clark<sup>93</sup> and from Wells et al.<sup>94</sup> Clark described the case in which a police officer, with a rational basis for believing the suspect to be guilty, pushes the witness to identify that suspect, "or else."<sup>95</sup> Wells et al. created a slightly more subtle version of the same problem with an example of a police lineup with a big, red arrow pointing at the suspect.<sup>96</sup> To the extent that the police are correct (i.e., that the person they suspect is in fact guilty of the crime), the "Or-Else" and "Red Arrow"

88. Laurence H. Tribe, *Trial by Mathematics: Precision and Ritual in the Legal Process*, 84 HARV. L. REV. 1329, 1381 (1971).

89. *Id.*

90. JUDITH N. SHKLAR, THE FACES OF INJUSTICE 51 (1990).

91. Solum, *supra* note 12.

92. *Id.*

93. Clark, *supra* note 26, at 250.

94. Wells et al., *supra* note 13.

95. Eyewitnesses sometimes have their own legal predicaments that can be used as an "or else" lever. For example, a key witness in a Los Angeles homicide case had her own legal matters that were discussed by detectives prior to presenting the lineup. *People v. Anthony*, BA281845 (Cal. Super. Ct. Apr. 7, 2005). The importance of her cooperation as a witness in a murder case was made very clear to her: "If [what you tell us is] important stuff that's gonna help us convict a killer . . . we will definitely talk with the district attorney. . . ." Transcript of Interview at 67, *People v. Anthony*, BA281845 (Cal. Super. Ct. Apr. 7, 2005). In another case, Jill Leovy describes how a gun charge was leveraged into a witness's cooperation in a homicide investigation. JILL LEOVY, *GHETTOSIDE: A TRUE STORY OF MURDER IN AMERICA* 164–66 (2015).

96. Wells et al., *supra* note 13, at 267.

procedures will, more often than not, perhaps even most of the time, lead to a correct outcome. As a corollary to Solum's "Hard Question" and Tribe's "Question of Regret," which illustrate that not all incorrect outcomes are equally bad, the hypothetical cases from Clark and Wells et al. illustrate that not all correct outcomes are equally good. Even without any deep ethical or legal analysis, these procedures seem unjust and obviously Wrong (capital W). Nonetheless, we must raise and answer the question: *Why* are they unjust and wrong? Pursuit of this question may at times seem like an academic adventure in describing the obvious; however, failure to pursue the question leaves us (researchers, courts, policy-makers, and practitioners) to rely on intuitionism and to simply make it up on the fly. To begin to address this question, we need to develop a theory of procedural justice for eyewitness identification.

### III. LEGITIMACY AND PROCEDURAL JUSTICE

Normative and psychological theories converge on a fundamental claim—that legitimacy is tied tightly to the procedural justice inherent in the interactions between individuals. In the next Section, we describe Tom Tyler's psychological theory of legitimacy and procedural justice, including the limitations that motivate a less subjective, more normative approach to legitimacy as it relates to eyewitness identification.

#### *A. Psychological Theory of Procedural Justice*

Psychological theories of procedural justice focus on people's preferences regarding legal procedures, their interactions with legal authorities, and their perceptions, attitudes, and beliefs about legal actors and authorities.<sup>97</sup> The most prominent, well-developed theory, and most relevant to the present enterprise, is Tyler's Process-Based Model of Regulation,<sup>98</sup> which provides a detailed psychological account of the relationships between procedural justice, legitimacy, and citizens' compliance with the law. The theory rests on two fundamental claims: (1) people comply with the law and cooperate with legal authorities to the extent that they perceive the police and the justice system to be legitimate, and (2) their perceptions of legitimacy are shaped by their experiences and interactions with the police and the justice system.<sup>99</sup> Of critical importance is the assessment of the procedural justice inherent in those interactions, rather than the favorability of the outcomes that follow from those interactions. Assessments of procedural justice are driven by the perceived quality of decision-making—the extent to which legal

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97. See, e.g., JOHN THIBAUT & LAURENS WALKER, PROCEDURAL JUSTICE: A PSYCHOLOGICAL ANALYSIS (1975); TYLER, WHY PEOPLE OBEY THE LAW, *supra* note 8; Tyler, *Procedural Justice*, *supra* note 8; Tyler, *Psychological Perspectives*, *supra* note 8.

98. TYLER, WHY PEOPLE OBEY THE LAW, *supra* note 8; Tyler, *Procedural Justice*, *supra* note 8; Tyler, *Psychological Perspectives*, *supra* note 8.

99. TYLER, WHY PEOPLE OBEY THE LAW, *supra* note 8; Tyler, *Procedural Justice*, *supra* note 8; Tyler, *Psychological Perspectives*, *supra* note 8.

authorities are seen as impartial and unbiased, and by the perceived quality of the interpersonal interactions—and the extent to which citizens feel that they are treated with courtesy, dignity, and respect. These connections—between personal interactions, perceptions of legitimacy, and compliance—have been observed in several empirical studies.<sup>100</sup> It is clear from these studies that citizens' acceptance of legal decisions and compliance with the law are driven in large part by their perceived legitimacy of the justice system, which cannot be reduced to legal outcomes.<sup>101</sup> It is not hard to imagine that a witness subjected to the “Or-Else” identification procedure would form a negative view of the justice system, and would be less likely to report crimes to the police in the future.<sup>102</sup>

The limitation of this approach lies in its subjective assessment of procedural justice. In the same way that our sensory and perceptual systems are vulnerable to errors, illusions, and biases,<sup>103</sup> so too are our perceptions of procedural justice.<sup>104</sup> Witnesses may be unaware of the extent to which a lineup administrator may influence their identification decisions. For example, in an experimental study by Clark, Marshall, and Rosenthal, lineup administrators made subtle comments that increased the overall identification rate, but most witnesses seemed to be completely unaware of the influence.<sup>105</sup> More generally, lay people may underappreciate the effects of lineup instructions and blind lineup administration.<sup>106</sup> In an archival analysis of known false identifications by Brandon Garrett, many eyewitnesses described the use of suggestive procedures, but seemed unaware of their likely impact.<sup>107</sup> In addition, assessments of procedural justice may be trumped by moral

100. TYLER, WHY PEOPLE OBEY THE LAW, *supra* note 8; Tyler, *Procedural Justice*, *supra* note 8; Tyler, *Psychological Perspectives*, *supra* note 8.

101. TYLER, WHY PEOPLE OBEY THE LAW, *supra* note 8; Tyler, *Procedural Justice*, *supra* note 8; Tyler, *Psychological Perspectives*, *supra* note 8.

102. TYLER & HUO, *supra* note 24.

103. Descriptions of perceptual illusions can be found in any introductory psychology textbook. For two particularly compelling (and fun) demonstrations and discussions of perceptual illusions, see LAWRENCE D. ROSENBLUM, *SEE WHAT I'M SAYING: THE EXTRAORDINARY POWERS OF OUR FIVE SENSES* (2010) and AL SECKEL, *INCREDIBLE VISUAL ILLUSIONS* (2003).

104. This analogy is probably a bit too strong, as it assumes that there is a reality to procedural justice in the same way that there is a reality to perceptual experience.

105. Steven E. Clark et al., *Lineup Administrator Influences on Eyewitness Identification Decisions*, 15 J. EXPERIMENTAL PSYCHOL. 63, 74–75 (2009); see also Sarah M. Greathouse & Margaret B. Kovera, *Instruction Bias and Lineup Presentation Moderate the Effects of Administrator Knowledge on Eyewitness Identification*, 33 L. & HUM. BEHAV. 70, 73 (2009).

106. See Sarah L. Desmarais & J. Don Read, *After 30 Years, What Do We Know About What Jurors Know? A Meta-Analytic Review of Lay Knowledge Regarding Eyewitness Factors*, 35 L. & HUM. BEHAV. 200, 203, 206 (2011); Daniel B. Wright et al., *Turning a Blind Eye to Double Blind Line-Ups*, 24 APPLIED COGNITIVE PSYCHOL. 849, 854–55 (2010).

107. Brandon L. Garrett, *Appendix: Characteristics of Eyewitness Misidentifications in DNA Exonerates' Trials*, in *CONVICTING THE INNOCENT: WHERE CRIMINAL PROSECUTIONS GO WRONG* 22–23, 40 (2011). For example, witnesses testified about suggestive statements, suggestive instructions, and biased lineups. In the case of Thomas Doswell, the witness was asked about the fact that Doswell (and no one else) had a letter “R” on his photograph (“Q. That didn’t affect your determination [about] who it might be, did it? A. No.”). In the case of Larry Mayes, the witness initially identified a lineup

values<sup>108</sup> and outcome favorability.<sup>109</sup> In other words, people may rate procedures as being more just when they lead to preferred outcomes or outcomes that align with their deeply-held moral beliefs. These results suggest that witnesses may fail to see or appreciate the influence of certain suggestive identification procedures—provided that they like the outcome. Taken together, these studies suggest that witnesses can have the subjective feeling that they are participating in the identification process in a meaningful way, when in fact, the police are so intent on obtaining a particular outcome, that the witness’s participation is functionally meaningless. We take up this issue of *meaningful* participation next.

### B. Normative Theory of Procedural Justice

Subjective assessment of procedural justice in police-citizen interactions is a necessary, but insufficient, component of a theory of procedural justice. Development of the normative components requires a different approach. Subjective assessments are typically obtained through questionnaires and surveys, whereas the normative assessments are derived from fundamental principles of justice. Unsurprisingly, the theory outlined here is informed by the foundational work of Rawls’ *Theory of Justice*,<sup>110</sup> but the specifics borrow from Solum’s concept of meaningful participation and Wells et al.’s arguments regarding legitimacy and memory.<sup>111</sup>

#### 1. Meaningful Participation

Solum argued as a fundamental principle that “meaningful participation is an essential prerequisite for the legitimate authority of action-guiding legal norms,”<sup>112</sup> and is “essential for the normative legitimacy of adjudicative processes.”<sup>113</sup> That participation must be “meaningful” is of critical importance. At its worst, non-meaningful participation in human affairs reduces to a con-game of “cooling the mark out,”<sup>114</sup> or something akin to a conversation with a customer service representative who politely recites a corporate apology for “your inconvenience,” but has no ability or intention of responding to your problems or concerns.<sup>115</sup> We may *feel* empowered by having our day in court, but we are powerless if we stand

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filler, and stated that the police “told me to stop and take a good look . . .” The witness explained away the filler identification with, “I was nervous.”

108. Linda J. Skitka et al., *Limits on Legitimacy: Moral and Religious Convictions as Constraints on Deference to Authority*, 97 J. PERSONALITY & SOC. PSYCHOL. 567, 573 (2009).

109. Dan Simon & Nicholas Scurich, *Lay Judgments of Judicial Decision Making*, 8 J. EMPIRICAL LEGAL STUD. 709 (2011).

110. RAWLS, *supra* note 78.

111. Wells et al., *supra* note 13.

112. Solum, *supra* note 12, at 183.

113. *Id.* at 275.

114. Erving Goffman, *On Cooling the Mark Out: Some Aspects of Adaptation to Failure*, 15 PSYCHIATRY 451 (1952).

115. Robert J. MacCoun, *Voice, Control, and Belonging: The Double-Edged Sword of Procedural Fairness*, 1 ANN. REV. L. & SOC. SCI. 171, 189 (2005).



before a court that is not listening, governed by laws that cannot or will not consider the content of our participation. Thus, taking aim at the subjective element in Tyler's Process-Based Theory of Procedural Justice, Solum notes that the "value of participation cannot be reduced to a subjective preference or feeling of satisfaction."<sup>116</sup> We may *believe* that procedures are just to the extent that legal authorities treat us politely with dignity and respect, but this aspect of procedural justice is meaningless if our participation has very little chance of influencing outcomes or decisions. So then, what makes participation meaningful?

First and foremost, participation is only meaningful to the extent that it can affect outcomes. This is not to say that the value of participation reduces only to its effect on outcomes, but rather that it *can* affect outcomes. Participation that is satisfying on the dimensions described in the Process-Based Theory, but has no real chance of affecting outcomes, is completely meaningless. Thus, if eyewitness identification procedures assure (or at least make it highly likely) that the eyewitness will identify the suspect, independent of the eyewitness's participation in the process, then the procedure violates the most basic principle of meaningful participation.

In addition, participation can only be considered meaningful if it is free of coercion and deception.<sup>117</sup> Borrowing from Habermas,<sup>118</sup> Solum describes these criteria in terms of "sincere beliefs" and a "rule against compulsion."<sup>119</sup> These are also foundational requirements underlying Rawls' *Theory of Justice*. "[T]hese conditions must situate free and equal persons fairly and must not permit some to have unfair bargaining advantages over others. Further, threats of force and coercion, deception and fraud, and so on must be ruled out."<sup>120</sup>

This conceptualization of "meaningful participation" is critical to eyewitness identification because it specifies that the interaction between the witness and law enforcement should be no more and no less than what any witness would reasonably believe it to be: a request from law enforcement to determine what the witness remembers about the crime and the person who committed it. Its purpose is not to obtain an identification or a non-identification response, but rather to provide an instrument that allows a clear view to the witness's memory. We expand upon this principle in the next Section.

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116. Solum, *supra* note 12, at 275.

117. The rule against deception is routinely and legally violated in police investigations, particularly when police are interrogating a person they believe was involved in the crime or is withholding information. In such circumstances, police may, among other things, present witnesses with information they do not actually have. For example, they might say, "We have five witnesses who say you *were* there"—when in fact those five witnesses do not exist. See FRED E. INBAU ET AL., CRIMINAL INTERROGATION AND CONFESSIONS 195 (5th ed. 2011).

118. JÜRGEN HABERMAS, THE THEORY OF COMMUNICATIVE ACTION: REASON AND THE RATIONALIZATION OF SOCIETY (Thomas McCarthy trans., 1984).

119. Solum, *supra* note 12, at 270.

120. JOHN RAWLS, JUSTICE AS FAIRNESS: A RESTATEMENT 15 (2001); see also RAWLS, *supra* note 78.

## 2. Independent Memory

Wells et al. have described legitimacy as a characteristic of the witness's identification, independent of its accuracy.<sup>121</sup> They attach the term "legitimate" to the identification outcome, rather than to the legal authorities or institutions that devise and carry out the procedures by which identification outcomes are obtained.<sup>122</sup> This requires only a minor shifting of terms to shift the focus of legitimacy to legal authorities rather than outcomes. The legal authorities are legitimate to the extent that they develop and use procedures that obtain identifications that are legitimate. Their main premise is that an identification "based solely on the independent memory of the witness" can be viewed as legitimate.<sup>123</sup>

The independent memory standard seems entirely reasonable and self-evident, and it would presumably exclude identifications made with no basis in memory, such as those obtained from the "Or-Else" or "Red Arrow" procedures. However, it is at odds with one of the most well-established principles of memory, the principle of *cue-dependent retrieval*.<sup>124</sup> The principle states that what is retrieved, and importantly, what is not retrieved, from memory at a particular time depends not only on the characteristics of the memory, but also on the cues that are available and employed at the time of retrieval, and those cues depend on the form of the interviewer's question. The implication of this is that the concept of a truly independent memory is an idealized fiction. Legitimacy, and the independence of memory, must be viewed in shades of gray, rather than black and white. Indeed, to the extent that *all* memory retrieval depends to some extent on the cues provided by the interviewer, the issue cannot be about *whether* the witness was influenced by the interviewer, but rather *how* the witness was influenced by the interviewer.

Finally, although Wells et al. focus exclusively on the legitimacy of positive identifications, the term must attach equally to non-identifications. Identifications and non-identifications are legitimate to the extent that they are the product of the witness's meaningful participation in the identification process and a product of the witness's independent recollection.

## 3. Independent Memory and Decision Processes

It is clear from the theoretical analysis outlined in Section II that eyewitness identification outcomes are not based solely on an independent memory, but rather are the joint product of memory and decision processes. Eyewitness identification

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121. Wells et al., *supra* note 13, at 265 (referring to "illegitimate hits," indicating the legitimacy applies to responses, rather than legal actors or institutions).

122. *Id.*

123. *Id.* at 264.

124. Endel Tulving & Zena Pearlstone, *Availability Versus Accessibility of Information in Memory for Words*, 5 J. VERBAL LEARNING & VERBAL BEHAV. 381, 389 (1966). See also Jeroen G.W. Raaijmakers & Richard M. Shiffrin, *Search of Associative Memory*, 88 PSYCHOL. REV. 93, 93 (1981), for an example of a computational model that embodies the principle of cue-dependent retrieval.

researchers have described a number of different strategies that witnesses might employ in making eyewitness identification decisions.<sup>125</sup> The question here is: to what extent might these different decision strategies be viewed as legitimate or illegitimate?

The most enduring answer to this question arises from a distinction, made by Wells, between absolute and relative judgment strategies.<sup>126</sup> According to the theory, an identification based on a relative judgment is one in which the “witness seems to be choosing the lineup member who most resembles the witness’s memory *relative* to the other lineup members.”<sup>127</sup> It is easy to see the problem that could arise from such a decision strategy—it allows a witness to identify a person who is not a particularly *good* match to the witness’s memory of the perpetrator but rather is only a *better* match than anyone else in the lineup. Wells contrasted the relative judgment strategy with an absolute judgment strategy, which requires that the match “must exceed some cut-off or threshold.”<sup>128</sup> According to Wells, the relative judgment strategy is a “useful and unflawed strategy” if the suspect is guilty, but “fallacious,” “dysfunctional,” and “dangerous” if the suspect is innocent.<sup>129</sup>

The absolute-relative distinction implies both a normative and a psychological theory. Normatively, it seems self-evident that a person should not be prosecuted for a crime because a witness judged him to look the most like the perpetrator, but rather because a witness judged him to *be* the perpetrator. It follows from this analysis that identifications based only on relative judgments would be illegitimate.

As a psychological theory, however, the absolute-relative distinction is imprecise and may fail at both ends. At one end, a pure relative model makes a clearly false prediction: if a witness to an armed robbery (by any white male) were presented with a lineup consisting of George W. Bush and five penguins, he or she would identify the 43rd President with a high level of confidence. One may reasonably condemn as illegitimate all identifications based on such a pure relative judgment decision rule, but this might only provide guidance to condemn a decision strategy that almost no witnesses ever use. At the other end, a pure version of the absolute judgment strategy, with no relative component, may also fail as a psychological theory. With few extremely rare exceptions (i.e., perfect pitch), almost *all* human judgments involve relative judgments to some degree.<sup>130</sup> Thus, it would

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125. David Dunning & Lisa Beth Stern, *Distinguishing Accurate from Inaccurate Eyewitness Identifications via Inquiries About Decision Processes*, 67 J. PERSONALITY & SOC. PSYCHOL. 818, 818 (1994); Gary L. Wells, *The Psychology of Lineup Identifications*, 14 J. APPLIED SOC. PSYCHOL. 89, 91 (1984).

126. Wells, *supra* note 125, at 92–95.

127. *Id.* at 92.

128. *Id.* at 94–95.

129. *Id.* at 89; Gary L. Wells, *What Do We Know About Eyewitness Identification?*, 48 AM. PSYCHOLOGIST 553, 560 (1993).

130. See Elke U. Weber, *Perception Matters: Psychophysics for Economists*, in II THE PSYCHOLOGY OF ECONOMIC DECISIONS: REASONS AND CHOICES 163, 172 (Isabelle Brocas & Juan D. Carrillo eds., 2004); Leon Festinger, *A Theory of Social Comparison Processes*, 7 HUM. REL. 117 (1954); Neil Stewart et al., *Absolute Identification by Relative Judgment*, 112 PSYCHOL. REV. 881 (2005).

not make sense to declare an identification to be illegitimate simply because it was based *in part* on relative judgments, as such a standard would render all eyewitness identifications to be illegitimate.

The resolution, of course, is to assume that eyewitness identification decisions are based on a mixture of both absolute and relative judgments.<sup>131</sup> This seems like a sensible assumption; however, the lines between legitimate and illegitimate in such a mixture model will be very blurry for two reasons: (1) the model begs the question of how large the contribution of relative judgment processes can be before the identification must be rejected as illegitimate, and (2) mixture models are difficult (if not impossible) to differentiate. Identifications that involve a very small contribution of relative judgment processes may be hard to distinguish from identifications that involve a very large contribution of relative judgment processes.<sup>132</sup>

The importance of the absolute-relative distinction may not lie in the decision strategies per se, but rather the specifics of the police-witness interaction that lead witnesses to adopt one strategy over another. In the original formulation of the distinction, Wells suggested that witnesses may tend to make relative judgments when they feel compelled or pressured to make a positive identification, or when they are unduly influenced by lineup members that are implausible.<sup>133</sup>

There is one last point to make before applying the Legitimacy Model to eyewitness identification procedures and reforms. None of the core concepts should be viewed as binary and black or white, but rather all are represented in continuous shades of gray. This is a core concept underlying signal detection and expected utility theories, but it must hold for less quantitative considerations of perceived and normative legitimacy, meaningful participation, and the independence of memory. In the same way that the match between a suspect and the witness's memory of the perpetrator is a continuous variable, so too for the concepts associated with legitimacy. Legitimacy, meaningful participation, and the independence of memory should be thought of as distributions, not binary points. Institutions can be more or less legitimate, procedures can involve more or less meaningful participation, and eyewitness identification decisions can vary in terms of their basis in an independent recollection. Without this graded and shaded view, we can expect little progress, and much argument about whether a particular procedure or outcome is, or is not, legitimate.

#### IV. APPLICATION TO EYEWITNESS IDENTIFICATION REFORM

In this Section we apply the Legitimacy Model to current reforms and recommendations for eyewitness identification. Each reform is discussed in terms

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131. Steven E. Clark, *A Memory and Decision Model for Eyewitness Identification*, 17 APPLIED COGNITIVE PSYCHOL. 629, 629 (2003); see also Clark, *Probative Value*, *supra* note 60.

132. Dustin Fife et al., *Revisiting Absolute and Relative Judgments in the WITNESS Model*, 21 PSYCHONOMIC BULL. REV. 479, 482 (2014).

133. Wells, *supra* note 125, at 94.

of procedural justice principles, empirical data on accuracy and effectiveness, and the resolution between procedural justice principles and empirical data. Table 2 presents, for each reform issue, a summary of procedural justice principles, relevant empirical data, and a resolution between principles and data.

### *A. Showups Versus Lineups*

#### **Procedural Justice Principles**

On the one hand, the showup procedure could not provide a more straightforward assessment of the witness's memory of the perpetrator. In terms of the basic structure, showups appear to involve the witness's meaningful participation and pass the independent memory standard. And yet, the showup procedure has been "widely condemned"<sup>134</sup> as "inherently suggestive."<sup>135</sup> Despite that strong criticism<sup>136</sup> showup procedures continue to be used under the assumption of a trade-off, not between different kinds of identification errors, but rather a trade-off between suggestiveness and the accuracy of memory. Specifically, showup procedures are often justified because they can be conducted quickly before the witness's memory of the perpetrator has faded.<sup>137</sup> The assumption is that there is an accuracy advantage due to being quick that more than offsets problems associated with a decision-criterion that may be inappropriately low based on the "inherent suggestiveness" of the procedure.

#### **Accuracy and Effectiveness**

Direct comparisons between showups and lineups appear to show a clear accuracy advantage for lineups.<sup>138</sup> However, most of the studies compare showups and lineups with the time between the crime and the identification held constant.<sup>139</sup> This may be an appropriate strategy, consistent with good experimental methodology, but in order to simulate real world conditions, the relevant comparison is between a showup conducted sooner with a live head-to-toe suspect and a lineup conducted later with head-and-shoulder photographs.

#### **Resolution**

There is a surprising disconnect between near-universal criticism for showup procedures and the lack of relevant empirical data. The problem here is not that justice and accuracy conflict, but that the data are simply lacking.

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134. *Stovall v. Denno*, 388 U.S. 293, 302 (1967).

135. *State v. Dubose*, 699 N.W.2d 582, 593–94 (Wis. 2005).

136. WALL, *supra* note 47.

137. *See, e.g.*, DORIS CALANDRA & JOEL E. CAREY, FIELD GUIDE FOR THE CALIFORNIA PEACE OFFICERS LEGAL SOURCEBOOK (2005).

138. Clark, *supra* note 26, at 240–44.

139. *Id.* at 242.

*B. Composition of the Lineup***Procedural Justice Principle**

The general guideline for lineup construction is straightforward: the lineup should be fair and unbiased such that the suspect does not stand out.<sup>140</sup> This guideline seems consistent with the meaningful participation and independent recollection standards. A compelling demonstration of this consistency is provided by cartoon-like illustrations where the fairness/standout rule is violated. Elizabeth Loftus provides such an example in her seminal book *Eyewitness Testimony*,<sup>141</sup> with a lineup showing a man with long hair and a beard, along with fillers as follows: an elderly woman in a wheelchair, a blind man, and a little kid blowing a bubble with bubble-gum. The punch-line of the cartoon is provided by the witness who points angrily and confidently at the bearded man.<sup>142</sup> The identification is immediately seen as laughably absurd. The fact that *anyone* can pick out the suspect raises the question as to whether the procedure requires the witness's meaningful participation or independent memory.

**Accuracy and Effectiveness**

The intuitive solution is to construct the lineup with fillers that are similar to the perpetrator. In actual criminal investigations, the similarity of the fillers to the perpetrator cannot be measured directly because the identity of the perpetrator is uncertain. Thus, similarity to the perpetrator is assessed either through similarity to the suspect (who may or may not be the perpetrator) or through similarity to the witness's description of the perpetrator (which may vary in its accuracy). In both cases, increased similarity appears to increase diagnostic accuracy (higher  $d'$ ),<sup>143</sup> although again, much of this advantage is driven by earlier studies, with diminishing effect sizes from more recent studies.<sup>144</sup> One question that remains is whether fillers should be selected based on their similarity to the suspect or based on their match to a witness's description of the perpetrator.

Despite the intuitive appeal, selecting fillers based on their similarity to the suspect may produce lineups that are biased by design. Bias is measured against a fair lineup standard which is that the suspect in a lineup should not be identified *by a non-witness* at a rate greater than chance.<sup>145</sup> In other words if a non-witness can pick the suspect out of the lineup at a rate greater than chance, the lineup is biased against the suspect. The inherent bias in suspect-matched filler selection can be illustrated with a simple example and a simple question. Consider a case in which an innocent person becomes a suspect in a criminal investigation due in part to the

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140. U.S. DEP'T OF JUSTICE, *supra* note 45, at 29–30.

141. ELIZABETH F. LOFTUS, *EYEWITNESS TESTIMONY* 145 (1979).

142. *Id.*

143. Clark, *Probative Value*, *supra* note 60, at 374–75.

144. See Steven E. Clark, et al., *Evolution of the Empirical and Theoretical Foundations of Eyewitness Identification Reform*, 21 *PSYCHONOMIC BULL. REV.* 251, 258–59 (2014).

145. See Roy S. Malpass & R.C.L. Lindsay, *Measuring Line-up Fairness*, 13 *APPLIED COGNITIVE PSYCHOL.* S1, S2 (1999).

fact that he fits the witness's description of the perpetrator. Later, that innocent suspect appears in a lineup with five fillers who look similar to him (thus, he should not stand out). But here's the simple question: how many people are in the lineup because they were judged to fit the witness's description of the perpetrator? The answer is only one, and that one person is the innocent suspect. The five fillers were selected not because they were judged to fit the description of the perpetrator, but rather because they were judged to be similar to a person (the innocent suspect) who was judged to fit the witness's description. The prediction that follows is that the innocent suspect will be the person in the lineup who is most likely to be identified.<sup>146</sup> Indeed, this prediction is supported by data.<sup>147</sup>

Given the nature of the problem with suspect-matched fillers, a reasonable solution is to construct lineups with fillers who, like the suspect, match the witness's description of the perpetrator. There is an intuitive appeal in that all lineup members are in the lineup based on the same standard—they were judged to fit the witness's description of the perpetrator. As a consequence of this intuitive appeal and strong results from an early experiment,<sup>148</sup> the National Institute of Justice (NIJ) guidelines explicitly state that fillers should be selected based on their match to the perpetrator's description rather than their similarity to the suspect.<sup>149</sup> However, experimental comparisons between suspect-matched and description-matched lineups (beyond the original study by Wells et al.) show a surprising pattern. Description-matched lineups appear to be more biased than suspect-matched lineups and show lower diagnostic accuracy.<sup>150</sup>

### Resolution

The empirical data suggest that principles of fair procedure do not necessarily translate into fair outcomes. The selection of fillers based on their similarity to the suspect *seems* intuitively fair until one works through the implications of such a process and sees the data. The selection of fillers based on their match to the witness's description would appear to deal with the problems of suspect-matched filler selection—again, until one sees the data. Thus, two procedures for the selection of lineup fillers—that both seem consistent with principles of fairness, meaningful participation, and the independent memory standard—do not appear to produce fair lineups. Moreover, the procedure favored by the NIJ report and embodied in reform legislation and best-practices appears to produce lineups that are more biased and produce less accurate identification evidence.

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146. David Navon, *Selection of Lineup Foils by Similarity to the Suspect Is Likely to Misfire*, 16 L. & HUM. BEHAV. 575, 579 (1992).

147. Steven E. Clark et al., *Constructing the Lineup: Law, Reform, Theory, and Data*, in REFORM OF EYEWITNESS IDENTIFICATION PROCEDURES 87 (Brian L. Cutler ed., 2013).

148. Gary L. Wells et al., *The Selection of Distractors for Eyewitness Lineups*, 78 J. APPLIED PSYCHOL. 835 (1993).

149. U.S. DEP'T OF JUSTICE, *supra* note 45, at 29–30 (expressing a clear preference for description-matched filler selection, but notes that fillers may be selected based on their match to the suspect if “the description of the perpetrator differs significantly from the appearance of the suspect.”).

150. Clark et al., *supra* note 2, at 180.

*C. Instructions to the Witness***Procedural Justice Principles**

Eyewitness identification reforms have included a number of cautionary instructions to be given to witnesses. Most fundamental among these is that witnesses should be instructed that the perpetrator of the crime may not be in the lineup. The rationale for the “not present” instruction is that witnesses often come to the lineup with the expectation that the perpetrator *will* be in the lineup. According to this argument, it is a reasonable assumption that the police would not have contacted the witness for a showup or lineup if they did not have the perpetrator in custody. There is anecdotal evidence from known false identification cases suggesting that *some* witnesses do in fact carry this assumption to the identification.<sup>151</sup> However, there is no evidence as to the prevalence of the assumption or the factors that moderate it. Nonetheless, if witnesses *do* assume that the perpetrator is in the lineup, the “not present” instruction presumably should set them straight. The procedural justice principle at work here is that witnesses may set an inappropriately low decision criterion based on their belief that the perpetrator is present, and that law enforcement carries a burden to correct that false assumption.

**Accuracy and Effectiveness**

The results of experimental simulations show that the cautionary instructions produce a reduction of both correct and false identification rates, with no change in diagnostic accuracy (no difference in  $d'$ ), consistent with a simple criterion shift explanation.<sup>152</sup>

**Resolution**

As we have argued before, the placement of the decision criterion is justice neutral, and a more conservative criterion is not inherently more just or legitimate than a more liberal decision criterion. Nonetheless, the National Research Council recently endorsed the use of the “not present” instruction in its recommendations,<sup>153</sup> raising the question: what is the scientific basis for the recommendation? Answering the question in ad hoc fashion, the most reasonable basis for recommending the “not there” instruction is its truth value. It’s true: the perpetrator may not be in the lineup, and it follows that a “not there” response is an appropriate response option.

Moreover, the results suggest a straightforward means of dealing with the issue of criterion placement. Again, our principle is that justice is not determined by the placement of the decision criterion, but rather by the procedures and the interactions between the police and the witness that determine the placement of the criterion. It is not hard to imagine circumstances in which the police might recite

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151. Garrett, *supra* note 107, at 3 (The witness was asked, “Did you believe that person may be there at the lineup?” The witness answered, “I figured that being logical.”).

152. Clark, *Probative Value*, *supra* note 60, at 365–66.

153. NAT’L RESEARCH COUNCIL, *supra* note 46.



the admonition in such a way as to convey to the witness that a non-identification response is not only allowed but preferred.

#### *D. Simultaneous or Sequential Presentation*

##### **Procedural Justice Principles**

The rationale for the sequential lineup is that it prevents witnesses from making identification decisions based on relative judgments that result in the witness identifying the person who looks the most like the perpetrator (or more precisely, is the closest match to their memory of the perpetrator).<sup>154</sup> An example illustrates the rationale. Consider a simultaneous lineup, in which all lineup members are shown to the witness at the same time, where the suspect in position three is innocent but clearly the most similar to the actual perpetrator. Based on that person's match-to-memory, relative to the other lineup members, the witness may falsely identify that person as the perpetrator. If that same lineup is presented sequentially, with one lineup member at a time, the witness may clearly see that number three is a better match than the first two lineup members, but decline to make an identification, in order to see lineup members four, five, and six. A false identification of an innocent suspect is thus less likely.

**Accuracy and Effectiveness.** Sequential lineup presentation does reduce the false identification rate, but also reduces the correct identification rate.<sup>155</sup> Importantly, although early experiments conducted in the 1980s and early 1990s appeared to show an accuracy advantage for sequential presentation, this “sequential superiority effect” as it has been called,<sup>156</sup> has essentially disappeared, and studies conducted since 2012 more often than not show higher accuracy (i.e., higher *d'* and AUC) for simultaneous presentation than for sequential presentation.<sup>157</sup>

##### **Resolution**

The procedural justice principles that motivated the development of the sequential lineup appear to be completely out of alignment with empirical data regarding the accuracy of simultaneous and sequential procedures. What is missing from the relative judgment analysis is that the side-by-side comparisons of lineup members—which is made difficult by sequential presentation—may actually increase the accuracy of eyewitness identification decisions. Specifically, the opportunity to compare lineup members to each other (in a simultaneous lineup)

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154. R.C.L. Lindsay & Gary L. Wells, *Improving Eyewitness Identifications from Lineups: Simultaneous Versus Sequential Lineup Presentation*, 70 J. APPLIED PSYCHOL. 556 (1985).

155. Clark, *supra* note 26, at 241–42.

156. Nancy K. Steblay et al., *Seventy-Two Tests of the Sequential Lineup Superiority Effect: A Meta-Analysis and Policy Discussion*, 17 PSYCHOL., PUB. POL'Y, & L. 99, 100 (2011).

157. See Clark et al., *supra* note 105 (regarding the disappearance of the sequential superiority effect over time). See also Laura Mickes et al., *Receiver Operating Characteristic Analysis of Eyewitness Memory: Comparing the Diagnostic Accuracy of Simultaneous Versus Sequential Lineups*, 18 J. EXPERIMENTAL PSYCHO. 361 (2012), for an example of an empirical study that has shown a simultaneous lineup advantage.

may allow witnesses to focus on unique features that are diagnostic of guilt and ignore common features that are non-diagnostic.<sup>158</sup> Particularly when lineup members are very similar, the opportunity to make side-by-side comparisons can help witnesses focus on the features that distinguish between two lineup members and focus on the unique features possessed only by the perpetrator.<sup>159</sup> Comparisons among lineup members, long thought to be a source of identification error, appear to be a source of identification accuracy.

#### *E. Blind Lineup Administration*

##### **Procedural Justice Principles**

One of the long-standing concerns about eyewitness identification procedures regards the extent to which those who administer the lineup (police) may influence witnesses' decisions or introduce misinterpretations and distortions in the recording of those decisions. The context of that problem is nicely described by Wells et al.:

Common practice . . . is for the detective [who is] involved closely in the case, who knows which lineup member is the suspect, to administer the lineup. This person contacts the eyewitness, tells the eyewitness about the impending lineup or photospread, instructs the eyewitness, maintains a physical presence with the eyewitness during the interview, answers questions that the eyewitness might have, asks the eyewitness to indicate a choice, records the answers, and so on. This interaction . . . is a highly interpersonal process.<sup>160</sup>

Some law enforcement guidelines have stated that the lineup administrator should not say or do *anything* that would influence the witness's decision.<sup>161</sup> However, such a guideline is much too broad and fails to consider the cue-dependent nature of memory. It is also the case that some recommended procedures are designed for the very purpose of influencing the witness. The instructions to the witness are a case in point. The point of those instructions is precisely to influence the witness's decision-making. It is psychologically naïve to think that lineup administrators will not influence witnesses. The issue cannot be about *whether* lineup administrators will influence witnesses, but rather about *how* lineup administrators will influence witnesses and what the nature of that influence will be.

It is useful to start with the easy aspects of this, and then work our way toward the more complicated and difficult aspects. To begin, the act of deliberately steering a witness to make an identification of the suspect violates the principle of meaningful participation. Such manipulation is not intended to find out what the witness remembers, but rather to simply get the witness to conform to the lineup

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158. Wixted & Mickes, *supra* note 65.

159. Molly B. Moreland & Steven E. Clark, Absolute and Relative Decision Processes in Eyewitness Identification (Oct. 6, 2016) (unpublished manuscript) (on file with author).

160. Wells et al., *supra* note 2, at 627.

161. See e.g., CALANDRA & CAREY, *supra* note 137; U.S. DEP'T OF JUSTICE, *supra* note 45, at 33.

administrator's view. The meaningful participation principle prohibits the "Or-Else" and "Red Arrow" lineup procedures, but those are the easy cases.

Next, we apply the independent recollection standard. To the extent that the lineup administrator influences the witness's decision, that decision is not based on the witness's independent recollection, and the identification is deemed illegitimate. However, it is not that simple. A true statement by the lineup administrator that had a *positive* effect on the witness's retrieval of information from memory might be considered legitimate by the independent recollection standard. Consider the statement, "I notice you paused on number three,"<sup>162</sup> and assume that the witness actually *did* pause on number three. Would the identification be considered illegitimate if the comment initiated a conversation between the lineup administrator and the witness that resulted in the witness recalling from memory an important detail about the perpetrator that lead the witness to (a) correctly identify number three as the perpetrator, or (b) correctly reject number three as a filler?

This level of analysis is typically not considered in the discussion about eyewitness identification reform. Rather, social scientists have proposed a straightforward, broad-brush solution to the problem, which is to conduct eyewitness identification procedures using a double-blind procedure in which neither the witness nor the lineup administrator knows the position of the suspect in the lineup.<sup>163</sup> Blind procedures have a solid footing in scientific methodology that goes back well over a hundred years.<sup>164</sup> The principle is simple: one cannot inadvertently leak one's expectations to the witness if one does not have expectations, and one cannot deliberately steer the witness toward the suspect if one does not know where the suspect is in the lineup.

Blind lineup administration is also deeply connected to the core of Rawls' *Theory of Justice*. In Rawls' theory, the principles of justice for a society are those that would be determined by rational and self-interested individuals situated behind a hypothetical *veil of ignorance*.<sup>165</sup> "Among the essential features of this situation is that no one knows his place in society, his class position or social status, nor does anyone know his fortune in the distribution of natural assets and abilities, his intelligence, strength, and the like."<sup>166</sup> Further, the *veil of ignorance* "excludes the knowledge of those contingencies which sets men at odds and allows them to be guided by their prejudices."<sup>167</sup>

Veils of ignorance are not merely hypothetical inventions. Veils of ignorance exist in Sections 9 and 10 of Article I of the U.S. Constitution which prohibit

162. Bill Nettles et al., *Eyewitness Identification: 'I Noticed You Paused on Number Three'*, CHAMPION, Nov. 1996, at 11, 12.

163. Wells et al., *supra* note 3.

164. See, e.g., M.E. Dean, 'An Innocent Deception': Placebo Controls in the St Petersburg Homeopathy Trial, 1829-1830, 99 J. ROYAL SOC'Y MED. 375 (2006); W.H.R. Rivers & H.N. Webber, *The Action of Caffeine on the Capacity for Muscular Work*, 36 J. PHYSIOLOGY 33 (1907).

165. RAWLS, *supra* note 78, at 136.

166. *Id.* at 12.

167. *Id.* at 19.

Congress and State governments from enacting bills of attainder or ex post facto laws.<sup>168</sup> Arguably, a veil of ignorance is cast upon the jury when a trial court excludes relevant evidence.<sup>169</sup> Despite the cliché regarding ignorance of the law, ignorance may serve a necessary and good purpose in the law.

One need look no further than the county courthouse to observe blind justice as a normative legal principle. Modern representations of justice are often depicted by the Roman Goddess, Justitia, with flowing robes, a sword, the scales of justice, and importantly a blindfold, which in modern times is interpreted as a symbol of impartiality and fairness. However, the blindfolding of justice has not always been viewed in such a positive light. In their recent book *Representing Justice*, Resnick and Curtis documented and analyzed the symbolism associated with the blindfolding of justice, from the 15<sup>th</sup> century to the modern era.<sup>170</sup> For example in Sebastian Brant's *Ship of Fools*, the blindfolding of justice represented "sin, ignorance, and mistakes,"<sup>171</sup> judicial error, and "the ease with which . . . judges could be deceived."<sup>172</sup> The shifting interpretation of the blindfolding of justice captures a fundamental tension in the law regarding the role of ignorance—as incompetence and disregard for truth on the one hand, and as impartiality and neutrality on the other.

### Accuracy and Effectiveness

There is at best only weak evidence that blind lineup administration increases the diagnostic accuracy of identification decisions, and some evidence that it may reduce accuracy. On this last point, we describe an experiment by Clark, Brower, Rosenthal, Hicks, and Moreland who trained their lineup administrators in how to push and steer witnesses toward the suspect without appearing to do so, and without ever mentioning anything about the suspect.<sup>173</sup> They did not ever say, for example, "I noticed you paused on number three." However, the lineup administrators intervened in subtle ways. For example, if a witness appeared to be leaning toward a non-identification, the lineup administrator would provide subtle nudges with seemingly innocuous encouragement to "just take your time and look at each photograph carefully."<sup>174</sup> If a witness made a tentative identification of a foil, the lineup administrator would ask for clarification, "Are you saying that number two is the guy who did it, or are you saying that number two looks *similar*

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168. See Akhil R. Amar, *Attainder and Amendment 2: Romer's Rightness*, 95 MICH. L. REV. 203 (1996); Adrian Vermeule, *Veil of Ignorance Rules in Constitutional Law*, 111 YALE L.J. 399 (2001).

169. Arguably, the laws of evidence exist because of the jury. See JAMES BRADLEY THAYER, A PRELIMINARY TREATISE ON EVIDENCE AT THE COMMON LAW (1898). See also Richard D. Friedman, "E" is for Eclectic: Multiple Perspectives on Evidence, 87 VA. L. REV. 2029 (2001), for a brief but interesting discussion of the Rawlsian veil of ignorance and the exclusion of evidence at trial.

170. JUDITH RESNICK & DENNIS CURTIS, REPRESENTING JUSTICE: INVENTION, CONTROVERSY, AND RIGHTS IN CITY-STATES AND DEMOCRATIC COURTROOMS (2011).

171. *Id.* at 67.

172. *Id.* at 69; see also Norman W. Spaulding, *Facades of Justice*, 110 MICH. L. REV. 1067 (2012).

173. Steven E. Clark et al., *Lineup Administrator Influences on Eyewitness Identification and Eyewitness Confidence*, 2 J. APPLIED RES. MEMORY & COGNITION 158, 158 (2013).

174. *Id.* at 163.

to the guy who did it?"<sup>175</sup> These tactics—which did not at any point explicitly direct a witness toward the suspect—produced substantial increases in both the correct and the false identification rates, and surprisingly produced a small *increase* in accuracy.<sup>176</sup> The increase in accuracy is surprising, but other studies have shown similar results.<sup>177</sup>

One explanation of these results is that it is easier to steer a person toward a correct answer than to steer a person toward an incorrect answer. The guilty suspect is likely to be a relatively stronger match to memory than an innocent suspect. As evidence of this explanation, lineup administrators intervened more often when the suspect was innocent than when the suspect was guilty.<sup>178</sup> The increased discriminability in non-blind, steering conditions suggests that the interventions of the lineup administrators were not simply suggestive or coercive, but rather they had a facilitative effect on memory retrieval.

There are reasons to think that the facilitative effects of steering will be even larger in actual criminal cases where investigators know about evidence pointing to the suspect's guilt. Specifically, if lineup administrators encourage witnesses to make identifications, and do so selectively, only when there is other corroborating evidence of guilt, correct identification rates may increase substantially more than false identification rates.

### Resolution

The contrast between principles of procedural justice and empirical results is surprising. Without the 20/20 hindsight of the data, one would not expect that blind lineup administration would decrease accuracy.

The problem with witness-steering may not be about the accuracy of the evidence (which may actually increase), but rather may be about how juries interpret the evidence in the context of other evidence. For example, consider a case in which a murder victim's property was found in the trunk of the suspect's car. The non-blind police officer who knows about this evidence and knows that the suspect is in position five in the lineup may intervene in the subtle ways described by Clark et al., resulting in the identification of that suspect. The jury is likely to erroneously believe that these two pieces of evidence are independent, which would seem like a powerful one-two evidentiary punch linking the suspect to the victim's murder: The witness identified the suspect as the shooter *and* the police found the victim's property in the suspect's car. In fact, the evidence is not independent. The witness identified the suspect as the shooter *because* the police found the victim's property in the suspect's car. The property evidence influenced the behavior of the police officer who then influenced the behavior of the witness. The false assumption

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175. *Id.* at 164.

176. *Id.* at 161 tbl.1.

177. Wendy Alberts, *Steering in the Eyewitness Identification Procedure* (2007) (unpublished Master's thesis, University of Leiden); *see also* Greathouse & Kovera, *supra* note 105.

178. Clark et al., *supra* note 173.

about independence may lead the juror to give too much weight to evidence that appears independent when in fact it is not.

This analysis suggests that administrator influence through non-blind lineup administration may still be inaccurate and ineffective in the long run of trial outcomes, even if it does increase the accuracy of the identification evidence. To the extent that is true, the prohibition on lineup administrator influence would be based on accuracy and effectiveness rather than a principle of procedural justice (in spite of arguments based on accuracy and effectiveness).

#### *F. Confidence of the Witness*

The two recommendations regarding the confidence of the witness appear to conflict with each other. First, a statement of confidence should be obtained from the witness at the time of the identification, and second, legal decision-makers should be cautious—perhaps even skeptical—of such statements.

The first part of the recommendation is consistent with the intuition that the identification of a confident witness is more likely to be accurate than that of a tentative witness. We should put more trust in identifications like, “There’s no doubt in my mind—it’s number three,” than identifications like, “I’m not sure, but I think it might be number three.” This intuition—that confidence and accuracy are closely related—is embodied in court rulings that instruct trial courts to consider the confidence of the witness in deciding whether to admit eyewitness identification evidence at trial<sup>179</sup> and instruct jurors to consider the confidence of the witness when determining how much weight to give to the evidence.<sup>180</sup> The second part of the recommendation arises from social science research, which has challenged the intuition that confidence and accuracy are closely related. Based on this social science position, trial courts in Utah do not routinely include confidence as a factor for the jury to consider,<sup>181</sup> Georgia no longer instructs jurors to consider a witness’s confidence,<sup>182</sup> and jury instructions in New Jersey, revised in 2012, tell jurors explicitly that confidence is an “unreliable” indicator of accuracy.<sup>183</sup>

#### **Procedural Justice Principles**

The justice principles apply to the trial court and the jury, rather than the witness. The recommendations regarding expressions of witness confidence are

179. *See* *Manson v. Brathwaite*, 432 U.S. 98, 114 (1977); *see also* *Neil v. Biggers*, 409 U.S. 188, 199 (1972).

180. *United States v. Telfaire*, 469 F.2d 552, 558–59 (D.C. Cir. 1972).

181. *See* *State v. Long*, 721 P.2d 483 (Utah 1986). *See also* UTAH CIVIL AND CRIMINAL MODEL JURY INSTRUCTIONS COMM., MODEL UTAH JURY INSTRUCTIONS-CRIMINAL § 404 (2d ed. 2016), which includes language for an optional instruction, which notes, “However, a witness who is confident . . . may be mistaken.”

182. *See* *Brodes v. State*, 279 Ga. 435, 442 (2005); COUNCIL OF SUPERIOR COURT JUDGES OF GA., 2 GA. JURY INSTRUCTIONS - CRIMINAL § 1.35.10 (2017).

183. N.J. SUPREME COURT MODEL JURY CHARGE COMM., NEW JERSEY MODEL CRIMINAL JURY CHARGES, NON-2C CHARGES, IDENTIFICATION: IN-COURT IDENTIFICATION ONLY (3) (2017).

based on an assumption that such expressions may be misleading to the both the trial court and the jury.

### **Accuracy and Effectiveness**

The empirical data strongly suggest that the Supreme Court had it right in *Manson* when it listed “the level of certainty demonstrated [by the witness] *at the time of the confrontation*” as a factor for trial courts to consider in assessing the reliability of eyewitness identification evidence.<sup>184</sup> The critical point, highlighted here in italics, but not in the original, is that it is the confidence expressed at the time of the identification that is to be considered, not the confidence expressed months or years later at admissibility hearings or at trial. Despite claims to the contrary, the confidence expressed by the witness at the time of the identification is a very strong and reliable indicator of the accuracy of the witness’s identification.<sup>185</sup>

### **Resolution**

The implication of this strong confidence-accuracy relationship is that the reforms implemented in Utah and Georgia, and especially in New Jersey, may veil jurors from information that would be useful in rendering their verdicts. More importantly, the strong relationship between confidence and accuracy suggests another means of criterion placement—that also does not rely on outcome costs or base rates. Even if witnesses make low-confidence identifications (low criterion), courts and jurors can effectively raise that criterion after the fact by excluding low-confidence identifications from evidence at trial, and by giving less weight to low-confidence identifications if they are admitted into evidence.

## V. THE UTILITY OF THE LEGITIMACY FRAMEWORK

The purpose of this Article was to situate eyewitness identification within the broader framework of theory and policy that assesses the justice system in terms of legitimacy, effectiveness, and procedural justice. Implicit in this endeavor is the view that accuracy is a necessary, but insufficient, index by which to assess the justice in the justice system.

Research and policy regarding eyewitness identification have largely ignored issues of procedural justice, legitimacy, and other social values, and have focused rather myopically on false identifications of the innocent.<sup>186</sup> This focus, which has dominated eyewitness research and policy for over thirty years, has been driven in large part by the false claim that false identifications can be reduced with no loss of correct identifications.<sup>187</sup> There was no need to consider conflicting values—between crime control and due process, or between accuracy and procedural justice—because the reforms were believed to involve no trade-offs and inflict no

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184. *Manson*, 432 U.S. at 114.

185. John T. Wixted et al., *Initial Eyewitness Confidence Reliably Predicts Eyewitness Identification Accuracy*, 70 AM. PSYCHOL. 515, 515 (2015).

186. See Clark, *supra* note 26, at 238–39.

187. See *id.* at 239.

costs. Previous work by Clark has shown that the trade-off between false identifications avoided and correct identifications lost can be measured and evaluated for various reforms, and policy recommendations can be made in light of that trade-off with a few assumptions about the relative costs of false identifications and false non-identifications.<sup>188</sup> However, that policy framework, driven by utility theory, not only seemed incomplete, but also carried heavy moral and ethical baggage. Surely, there had to be more to eyewitness identification policy than calculations of expected utility.

A complete framework for criminal justice policy must consider the effectiveness and utility elements—response rates, outcome values, and base rates—but must also consider elements of procedural justice and the legitimacy of legal institutions. Our goal in this Article was to pull accuracy and utility from signal detection theory under the broader umbrella of the normative psychological theories of legitimacy.

There is no natural law that guarantees an alignment between justice and accuracy, just as there is no natural law that aligns moral imperatives with empirical facts, despite the fact that people often believe that such an alignment exists.<sup>189</sup> People have a tendency to believe that the facts support *their* moral positions and that the facts are on *their* side.<sup>190</sup> In the case of criminal investigations, this suggests an alignment such that the Right (capital R) procedures (i.e., those that are consistent with our social values) will lead to the right (factually correct) outcomes.

The foregoing analysis suggests that the principles of procedural justice and the diagnostic accuracy associated with those procedures do not completely overlap, and thus provide non-redundant perspectives. Instructions that correctly acknowledge the uncertainty of identification procedures (i.e., that the perpetrator may not be present) do not increase the accuracy of the evidence. Procedures that seem intuitively fair for creating lineups do not seem to actually create fair lineups, and the preferred method of selecting fillers based on their match to a description of the perpetrator may reduce accuracy relative to the non-preferred (but perhaps somewhat flawed) procedure of selecting fillers based on their similarity to the suspect. Sequential lineup procedures that minimize the tendencies witnesses may have to identify someone because he looks more like the bad guy than anyone else in the lineup also do not only increase accuracy, but appear to decrease accuracy. There is also no compelling evidence that blind lineup administration increases the accuracy of identification evidence. The confused procedure of obtaining confidence statements and then effectively ignoring them based on concerns about reliability withholds useful and probative information from jurors. To the extent

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188. *Id.*

189. Peter H. Ditto & Brittany Liu, *Deontological Dissonance and the Consequentialist Crutch*, in *THE SOCIAL PSYCHOLOGY OF MORALITY: EXPLORING THE CAUSES OF GOOD AND EVIL* 51, 67 (Mario Mikulincer & Phillip R. Shaver eds., 2012); Brittany S. Liu & Peter H. Ditto, *What Dilemma? Moral Evaluation Shapes Factual Belief*, 4 *SOC. PSYCHOL. & PERSONALITY SCI.* 316 (2012).

190. Liu & Ditto, *supra* note 189, at 316.



that policy decisions may be driven by a confused mix of social values and objective outcomes, it is important to know the extent to which such values and outcomes do and do not align.

The analysis here suggests significant misalignment between diagnostic accuracy and principles of procedural justice. To that point, we make three comments:

First, the misalignment may be due to a misspecification of the procedural justice model or an error in the translation between procedural justice principles and specific procedures. The clearest case of this is with the analysis of relative judgments and sequential lineup presentation. Although it may be true that an identification based only on relative judgments violates a justice principle, it does not necessarily follow that any contribution of relative judgments violates a justice principle. In addition, to the extent that the justice principle is correct—and that relative judgments should be minimized—the sequential lineup may have simply been the wrong implementation. Specifically, as a “treatment” it may have a side-effect of reducing the witness’s opportunity to make important comparisons between lineup members.

Second, to the extent that diagnostic accuracy and principles of procedural justice provide non-overlapping, non-redundant information, policy-makers have more useful information to consider. Procedural justice considerations augment the Effectiveness Model in useful ways. In particular, our analysis suggests that the problems associated with outcome costs and base rates attach only to issues of criterion placement; they are irrelevant to issues of diagnostic accuracy. Also clear from these analyses is that there are two ways of adjusting the criterion based on accurate (i.e., truthful) instructions and post-identification evaluation of witness confidence.

Third, it is critically important to know where considerations of procedural justice and diagnostic accuracy are consistent and where they diverge. It is not unreasonable to implement policies that are consistent with principles of procedural justice and also likely to reduce the accuracy of eyewitness evidence or the legal procedures that rely on that evidence—provided that policy-makers understand and acknowledge that decision. There are many other instances in the justice system where the social value of accuracy is sacrificed to some other social value.<sup>191</sup>

The accuracy and utility components of the Legitimacy Model are well-developed and well-grounded. In contrast, ours is the first step in the development of a procedural justice model for eyewitness identification. The procedural justice model, like all social science models, is certainly incomplete and wrong in some important ways. Our hope is that we have provided a starting point and a foundation upon which others will build.

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191. LAUDAN, *supra* note 26 (arguing convincingly regarding various “truth-thwarting” traditions in the American legal system—and that the accuracy of trial outcomes could be increased if defendants were compelled to testify at trial, if statutes of limitations were waived under some conditions, and if the state were allowed to appeal a defendant’s acquittal by the jury).

**Table 1. Outcomes for Showup and Lineup Identification Procedures****Showup**

	<b>Suspect Identification</b>	<b>Non- Identification</b>	<b>Filler</b>
Suspect is Guilty	Correct ID	False non-ID	————
Suspect is Innocent	False ID	Correct non-ID	————

**Lineup**

Suspect is Guilty	Correct ID	False non-ID	Filler ID
Suspect is Innocent	False ID	Correct non-ID	Filler ID

**Table 2. Alignment Between Procedural Justice and Accuracy and Effectiveness**

<b>Procedural Question</b>	<b>Procedural Justice Principle</b>	<b>Accuracy and Effectiveness</b>
Showup or Lineup?	Showups do not violate meaningful participation or independent memory standards, but are “widely condemned” as inherently suggestive.	Data suggest an accuracy advantage for lineups, but additional research is needed.
Lineup Composition: How to choose fillers?	Choose fillers based on match to description, not match to suspect to produce fair and unbiased lineups.	Both procedures appear to be biased against the suspect. Accuracy is higher for suspect-matched filler selection than description-matched filler selection.
What to tell the witness about the procedure?	Instructions should make truthful statements about the procedure.	Instructions affect criterion placement, but not accuracy.
Simultaneous or Sequential presentation?	The use of relative judgments should be minimized.	Sequential lineups are no more accurate, and possibly less accurate than simultaneous lineups.
Blind or non-blind lineup?	Blind procedures minimize lineup administrator influence.	No strong evidence that blind lineup presentation increases diagnostic accuracy. Non-blind lineup administration may have higher accuracy than blind lineup administration.
Consider the confidence of the witness?	Legal decision-makers should not rely on misleading subjective assessments of confidence.	Confidence is a strong index of accuracy.

Figure 1

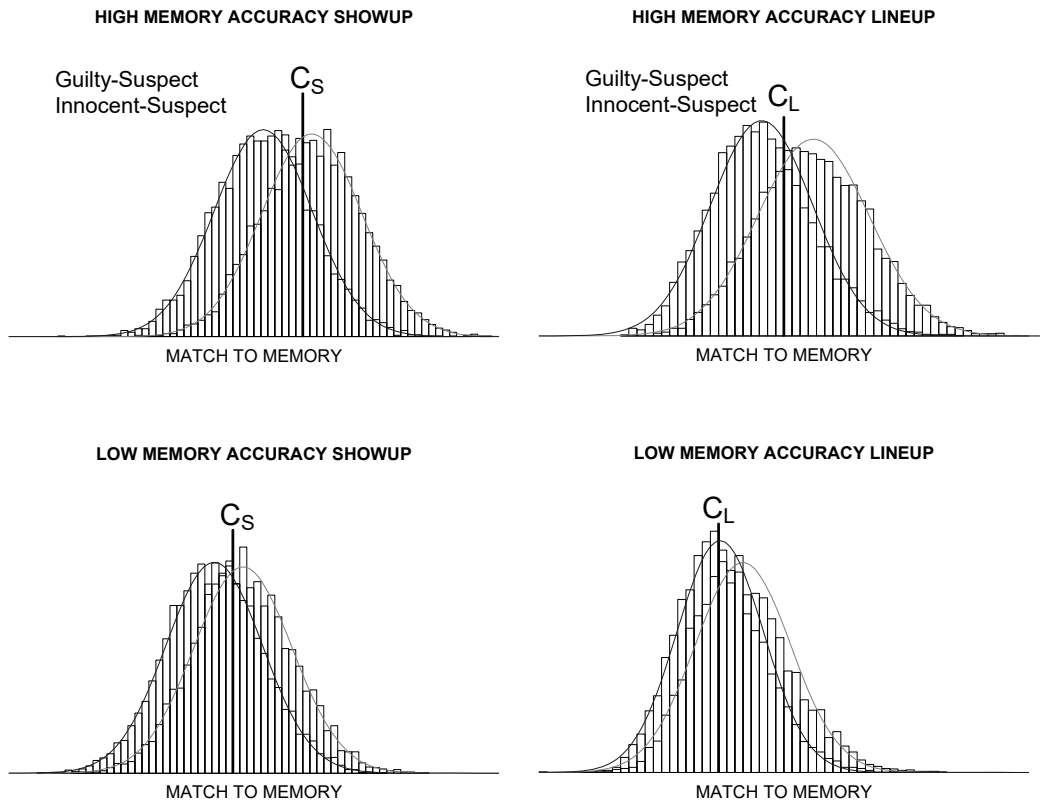


Figure 2

