

THE WORST OF THE WORST: HEINOUS CRIMES AND ERRONEOUS EVIDENCE

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I. INTRODUCTION

The criminal justice system was once considered infallible. But we now know that innocent defendants are incarcerated and even executed.¹ Indeed, the National Registry of Exonerations (“NRE”) provides a list of 1535 inmates who were exonerated and released from prison in the United States from 1989 through 2014.² Of the exonerees, 1421 were released from the general prison population and 114 were released from death row.³

Scholars have documented several key evidentiary causes of wrongful conviction, including eyewitness error, bad science, false confession, untruthful snitches, government misconduct, and inadequate

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1. Michael L. Radelet & Hugo Adam Bedau, *The Execution of the Innocent, in AMERICA’S EXPERIMENT WITH CAPITAL PUNISHMENT: REFLECTIONS ON THE PAST, PRESENT, AND FUTURE OF THE ULTIMATE PENAL SANCTION* 357, 363-64 (James R. Acker et al. eds., 3d ed. 2014); MICHAEL L. RADELET, HUGO ADAM BEDAU & CONSTANCE E. PUTNAM, *IN SPITE OF INNOCENCE: ERRONEOUS CONVICTIONS IN CAPITAL CASES* 263-68 (1992); Hugo Adam Bedau & Michael L. Radelet, *Miscarriages of Justice in Potentially Capital Cases*, 40 STAN. L. REV. 21, 35-36 (1987).

2. See *2014 Exonerations: A Year in Review*, NAT’L REGISTRY EXONERATIONS, <https://www.law.umich.edu/special/exoneration/Pages/Exonerations-2014.aspx> (last visited Dec. 31, 2016). It should be noted that the authors’ research and findings are based on data collected through 2014, however, the website is continuously updated as exonerees are exonerated to date. *Current Exonerations*, NAT’L REGISTRY EXONERATIONS, <https://www.law.umich.edu/special/exoneration/Pages/featured.aspx> (last visited Dec. 31, 2016).

3. See *Innocence: List of Those Freed from Death Row*, DEATH PENALTY INFO. CTR., <http://www.deathpenaltyinfo.org/innocence-list-those-freed-death-row> (last visited Dec. 31, 2016).

legal defense.⁴ In addition to the “usual suspects,” Samuel Gross hypothesizes that the seriousness of a crime matters—the more serious the crime, the greater the chance of a wrongful conviction. Consider the following empirical pattern: more than eighty percent of all exonerations have occurred in rape and murder cases, despite the fact that such cases account for just two percent of felony convictions and an even smaller proportion of all criminal convictions.⁵ There are two possible explanations for the disproportionate representation of serious crimes among exonerations: the chance of wrongful conviction is greater in serious crimes than in minor crimes or errors are more apt to be identified and corrected in serious crimes than in minor crimes, or both. Miscarriages of justice are almost certainly more likely to be rectified in serious crimes, as urgent cases attract devoted lawyers (especially if the defendant is facing execution). Nonetheless, Gross posits that the nature of the crime is also pivotal: as the seriousness of a crime increases, so too does the chance of a wrongful conviction.

Why does the seriousness of the crime matter? Gross theorizes that wrongful conviction is more likely in a serious crime than in a minor crime for related but distinct reasons: serious crimes are often prosecuted even if the evidence is questionable, and serious crimes are more apt to produce questionable evidence.⁶ Consider the typical life course of a minor crime. In a minor crime, the victim often does not report the offense to police (wrongful conviction is impossible). If a minor crime is reported but there are few leads, then the case tends to remain unsolved (again, wrongful conviction is impossible). If a minor crime is reported and there are strong leads, then a suspect might be arrested and prosecuted. Thus, the criminal justice system provides a filter: prosecution in minor crimes tends to be reserved for the cases with the strongest evidence. But serious crimes—especially murders—are different. Serious crimes are more often reported. If a serious crime is reported, then the police are under pressure to solve the case even if leads are scarce. In turn, prosecutors are under pressure to pursue the

4. See, e.g., JAMES R. ACKER & ALLISON D. REDLICH, *WRONGFUL CONVICTION: LAW, SCIENCE, AND POLICY* 12-17 (2011); INNOCENCE PROJECT, <http://www.innocenceproject.org> (last visited Dec. 31, 2016).

5. SAMUEL R. GROSS & MICHAEL SHAFFER, *EXONERATIONS IN THE UNITED STATES, 1989–2012: REPORT BY THE NATIONAL REGISTRY OF EXONERATIONS* 18 (2012); Samuel R. Gross, *Convicting the Innocent*, 4 *ANN. REV. L. & SOC. SCI.* 173, 179 (2008).

6. Gross, *supra* note 5, at 180; Samuel R. Gross, *Lost Lives: Miscarriages of Justice in Capital Cases*, *LAW & CONTEMP. PROBS.* 1998, at 125, 134-37 [hereinafter Gross, *Lost Lives*]; Samuel R. Gross, *The Risks of Death: Why Erroneous Convictions Are Common in Capital Cases*, 44 *BUFF. L. REV.* 469, 476-81 (1996) [hereinafter Gross, *The Risks of Death*]; see GROSS & SHAFFER, *supra* note 5, at 43-50, 65-67.

case even if the evidence is thin. But the occasional prosecution of serious crimes despite weak evidence is only part of the issue.

Gross also maintains that serious crimes can undermine the fact-finding process.⁷ Serious crimes are thought to produce longer and more aggressive police interrogations, raising the possibility of a false confession.⁸ Serious crimes might also increase the chance of perjury because the true offender has a greater incentive to pin the crime on someone else and a jailhouse snitch has more to gain from “hearing” a confession. Moreover, a prosecutor has more to gain from “believing” the snitch. Police and prosecutorial misconduct might also become more probable, as the temptation to withhold exculpatory evidence perhaps grows. Although Gross does not mention bad science or eyewitness error, the same phenomenon might hold true. State crime labs might feel more pressure to support the prosecution’s theory in a serious crime and a witness might feel more pressure to get a “monster” off the streets.

To be clear, the purpose of the current research is not to test Gross’s full hypothesis regarding the relationship between serious crime and wrongful conviction. Instead, we examine one aspect of Gross’s argument. Drawing on data from the NRE regarding defendants who were exonerated from 1989 to 2014, we investigate whether the most serious crimes produce the most erroneous evidence. As the seriousness of a crime increases, do evidentiary problems—false confession, perjury, untruthful snitches, government misconduct, bad science, and eyewitness error—also increase?

Measuring the seriousness of a crime is no simple task. Why is crime *B* more heinous than crime *A*? Why is crime *C* even more egregious than crime *B*? Why is crime *D* the most horrific of all? The field of criminology has never had a satisfactory answer. Focusing on public opinion only pushes the question back a step.⁹ Why do people think that crime *D* is the most serious of all? Donald Black’s theory of moral time¹⁰ provides a new and innovative approach for measuring the seriousness of a crime: the greater the movement of social time, the more heinous the crime. After elaborating Black’s theoretical model, we use it to calibrate the seriousness of the crimes for which the 1529 defendants in the data were exonerated.¹¹

7. See Gross, *The Risks of Death*, *supra* note 6, at 484-86.

8. See Saul M. Kassin & Karlyn McNall, *Police Interrogations and Confessions: Communicating Promises and Threats by Pragmatic Implication*, 15 LAW & HUM. BEHAV. 233, 247-50 (1991).

9. See THORSTEN SELLIN & MARVIN E. WOLFGANG, *THE MEASURE OF DELINQUENCY* 349 (1964); MARVIN E. WOLFGANG ET AL., *THE NATIONAL SURVEY OF CRIME SEVERITY* 46-50 (1985).

10. See DONALD BLACK, *MORAL TIME* (2011).

11. See *infra* text accompanying notes 115-37.

Of the evidentiary problems in question, we focus primarily on false confession for theoretical and empirical reasons.¹² Theoretically, scholars have proposed a relationship between serious crime, aggressive police interrogation, and false confession.¹³ But the relationship remains untested. Empirically, the NRE data are more complete for false confession than the remaining evidentiary problems. Expanding our gaze beyond false confession, we also provide a partial examination of the relationship between the seriousness of a crime and perjury, untruthful snitches, government misconduct, bad science, and eyewitness error.¹⁴

Before proceeding, it is important to provide a note of caution about the data. The NRE provides the following definition of exoneration: “In general, an exoneration occurs when a person who has been convicted of a crime is officially cleared based on new evidence of innocence.”¹⁵ Nonetheless, exoneration is not the equivalent of factual innocence; guilty defendants are exonerated, just as innocent defendants remain in prison. Thus, innocence is a legal claim—not a factual claim, meaning a legal official with the power to do so has exonerated the defendant, but the legal designation may or may not match the ground truth. If an exonerated defendant is factually innocent, then the inculpatory evidence in the case was erroneous. If an exonerated defendant is factually guilty, then the inculpatory evidence in the case was not erroneous. Consequently, it is important to note that the phrase “erroneous evidence” refers to “putatively erroneous evidence” (just as “false confession” refers to “putatively false confession,” and so forth).

The NRE reports the following: “Our criteria for exoneration are designed to identify cases of convicted defendants who are factually innocent of the crimes for which they were convicted.”¹⁶ The NRE also assumes that the “great majority” of exonerees in the database are

12. See *infra* Part II.

13. See, e.g., RICHARD A. LEO, POLICE INTERROGATION AND AMERICAN JUSTICE 196-98 (2008); Steven A. Drizin & Richard A. Leo, *The Problem of False Confessions in the Post-DNA World*, 82 N.C. L. REV. 891, 910-12 (2004); Barry C. Feld, *Real Interrogation: What Actually Happens When Cops Question Kids*, 47 LAW & SOC’Y REV. 1, 24-25 (2013); Richard A. Leo, *Miranda’s Revenge: Police Interrogation as a Confidence Game*, 30 LAW & SOC’Y REV. 259, 281-82 (1996); John Pearse & Gisli H. Gudjonsson, *Measuring Influential Police Interviewing Tactics: A Factor Analytic Approach*, 4 LEGAL & CRIMINOLOGICAL PSYCHOL. 221, 223, 234 (1999); Michael Wald et al., *Interrogations in New Haven: The Impact of Miranda*, 76 YALE L.J. 1519, 1561-62 (1967).

14. See *infra* text accompanying notes 138-142.

15. *Glossary*, NAT’L REGISTRY EXONERATIONS, <http://www.law.umich.edu/special/exoneration/Pages/glossary.aspx> (last visited Dec. 31, 2016); see GROSS & SHAFFER, *supra* note 5, at 6-7.

16. GROSS & SHAFFER, *supra* note 5, at 11.

factually innocent.¹⁷ We do not take a position on the factual innocence or factual guilt of any particular exoneree, nor do we take a position on the proportion of exonerees who are factually innocent; we simply do not know. If the NRE's assumption that the "great majority" of exonerees are factually innocent is wrong, then our findings might also be wrong (if the analysis could be restricted to factually innocent defendants, then the empirical patterns might change). We are encouraged by the fact that the findings for false confession remain the same if the sample is restricted to exonerations that included DNA evidence.¹⁸ But even an exoneration based on DNA evidence is not the equivalent of factual innocence; for instance, the DNA test might have been conducted incorrectly or the defendant might have participated in the crime without leaving DNA. Still, DNA evidence substantially bolsters the case for factual innocence.

Having acknowledged a key limitation of the data, we provide a brief preview of our central empirical finding: as the seriousness of a crime increases, so too does the chance of a false confession.¹⁹ Although we do not have data on the intervening mechanism, we presume that the police use the twin psychological interrogation techniques of minimization and maximization²⁰ most aggressively in such cases. If so, then the most heinous crimes produce the most aggressive interrogations, and the most aggressive interrogations raise the specter of a false confession. Buttressing our argument, supplemental analyses suggest that the heinousness of the crime is also related to the chance of government misconduct, bad science, and an untruthful snitch. Strikingly, the common denominator appears to be the state.²¹ It is true that the state is involved in the collection of all forms of evidence, but the state plays a particularly central role in police interrogation, misconduct, bad science, and the choice to rely on a snitch.

If our findings are correct, then the "worst of the worst crimes" produce the "worst of the worst evidence." In fact, if the relationship between the heinousness of a crime and erroneous evidence is linear, then the most problematic evidence should be found in capital murder cases.²² Such a possibility raises important questions about the death penalty, an issue we consider below.²³ However, before turning to the

17. *Id.*

18. *See infra* text accompanying note 125.

19. *See infra* Part V.

20. Drizin & Leo, *supra* note 13, at 912.

21. *See infra* text accompanying notes 138-44.

22. Gross, *supra* note 5, at 177-79; Gross, *Lost Lives*, *supra* note 6, at 133-41; Gross, *The Risks of Death*, *supra* note 6, at 475-81, 495-96.

23. *See infra* text accompanying notes 132-37.

implications of the research, consider the example of false confession in depth.

II. SERIOUS CRIME, AGGRESSIVE INTERROGATION, AND FALSE CONFESSION

What is the purported connection between serious crime and false confession? Research at the micro case level suggests that psychological interrogation tactics have the power to convince a suspect—usually guilty, but sometimes innocent—that confession is a rational choice. The more serious the crime, the more aggressively such tactics are thought to be used by police. Research at the macro historical level suggests that police “turn up the heat” in the interrogation room in response to broad social threats such as rising crime rates. Both lines of thought—micro and macro—invoke the concept of seriousness. As the seriousness of a particular crime increases, or the seriousness of the general crime problem increases, police interrogation becomes more aggressive. In turn, aggressive interrogation produces more true confessions and more false confessions. Consider the substantial body of research on the topic.

A. *Micro Level: Cases*

If a suspect is being interrogated, then the police believe he did it.²⁴ Thus, the purpose of interrogation is not to conduct a neutral fact-finding mission, but rather to secure incriminating evidence.²⁵ Through the twin psychological interrogation tactics of maximization and minimization, the guilty often come to see confession as more advantageous than denial.²⁶ The problem is that the same tactics can ensnare an innocent suspect who also comes to see confession as a rational choice (or, less commonly, comes to believe that he actually committed the crime).²⁷

24. The male pronoun is used throughout this Article because most serious crimes are committed by men. *Ten-Year Arrest Trends by Sex, 2006–2015*, FED. BUREAU INVESTIGATION, <https://ucr.fbi.gov/crime-in-the-u.s/2015/crime-in-the-u.s.-2015/tables/table-33> (last visited Dec. 31, 2016).

25. See, e.g., Drizin & Leo, *supra* note 13, at 911; Saul M. Kassin et al., *Police-Induced Confessions: Risk Factors and Recommendations*, 34 *LAW & HUM. BEHAV.* 3, 6-7 (2010); Saul M. Kassin & Gisli H. Gudjonsson, *The Psychology of Confessions: A Review of the Literature and Issues*, *PSYCHOL. SCI. PUB. INT.*, Nov. 2004, at 33, 41-42.

26. Kassin & Gudjonsson, *supra* note 25, at 45.

27. Drizin & Leo, *supra* note 13, at 912-13. Different typologies of false confession have been advanced. For discussions, see, for example, Saul M. Kassin & Lawrence S. Wrightsman, *Confession Evidence*, in *THE PSYCHOLOGY OF EVIDENCE AND TRIAL PROCEDURE* 67, 76-78 (Saul M. Kassin & Lawrence S. Wrightsman eds., 1985); Kassin & Gudjonsson, *supra* note 25, at 49-51; and Richard J. Ofshe & Richard A. Leo, *The Decision to Confess Falsely: Rational Choice and Irrational Action*, 74 *DENV. U. L. REV.* 979, 997-1000 (1997). Given our focus on police-induced

Most suspects begin an interrogation bent on denial. But maximization and minimization reshape the suspect's perception of his options. Indeed, confession often comes to be seen as the best choice. In maximization, the detective is crystal clear—I know you did it. If the suspect denies the crime or attempts to provide an alibi, then the verbal blitzkrieg escalates, as the detective overrides objections and confronts the suspect with compelling evidence of guilt—real or manufactured²⁸ (in the 1969 case of *Frazier v. Cupp*,²⁹ the Supreme Court ruled that the police can fabricate evidence to deceive a suspect).³⁰ The purpose of maximization is to shift the suspect from confident to hopeless—denial is futile. Importantly, maximization implies that continued denials will lead to harsher punishment. Minimization, in contrast, offers the suspect a menu of “themes” that can be used to rationalize the crime.³¹ Perhaps you shot the victim on accident, or you shot the victim in self-defense, or you were provoked. The detective, who offers sympathy and understanding, might even say that he would have done the same thing. Minimization implies that confessing will make life better, from assuaging moral guilt to reducing the inevitable punishment. To be clear, the police are not allowed to explicitly threaten a severe sanction or explicitly promise a lenient sanction,³² so detectives often engage in pragmatic implication—using words that allow the suspect to “read between the lines.” If conviction becomes a foregone conclusion—the detective is armed with seemingly incontrovertible evidence—then guilty and innocent suspects can come to see confession as the best option for softening punishment. Psychological interrogation is meant to “undo denial.”³³ Given the intentional stress of interrogation, suspects also have a deep desire to escape the interrogation room that should not be underestimated. Not only do humans place more value on immediate outcomes than long-term outcomes, the suspect might believe that he can “sort this out” if he can just escape and regroup.³⁴

false confession, voluntary false confessions (meaning the absence of police interrogation) are beyond the scope of the current research.

28. Kassin & Gudjonsson, *supra* note 25, at 45-46.

29. 394 U.S. 731 (1969).

30. *Id.* at 739.

31. Feld, *supra* note 13, at 15-17 (discussing how police use minimization tactics on juveniles); Kassin & Gudjonsson, *supra* note 25, at 55.

32. Richard J. Ofshe & Richard A. Leo, *The Social Psychology of Police Interrogation: The Theory and Classification of True and False Confessions*, 16 *STUD. L. POL. & SOC'Y* 189, 192 (1997).

33. Kassin & Gudjonsson, *supra* note 25, at 45.

34. See GISLI H. GUDJONSSON, *THE PSYCHOLOGY OF INTERROGATIONS AND CONFESSIONS: A HANDBOOK* 124-28 (2003); Kassin & Gudjonsson, *supra* note 25, at 50. For a review of maximization and minimization, see GUDJONSSON, *supra*, at 21, 81-82; LEO, *supra* note 13, at 121-

Leo uses the metaphor of a confidence game to explain why suspects are vulnerable to maximization and minimization.³⁵ Put simply, the suspect gets played. In a classic confidence game, the offender gains the victim's trust by establishing intimacy and offering a better life, but ultimately betrays that trust for personal gain. Similarly, a detective must convince the suspect that he is a friend despite being a foe. The ruse proceeds in four steps. To begin, the detective must "size up" the suspect before entering the interrogation room (becoming familiar with the case to prepare for battle) and during the interrogation (figuring out how the suspect can be deceived and manipulated).³⁶ Next, the detective "cultivates" the suspect.³⁷ After securing the *Miranda* waiver—the detective might indicate that he wants to hear the suspect's side of the story but cannot do so until he handles a routine formality—the detective implores the suspect to be honest³⁸: "I'm not going to lie to you, so don't lie to me." Now that the stage is set, the detective asks what happened.³⁹ If the suspect denies the crime or attempts to provide an alibi, then the detective seizes on inconsistencies between the suspect's story and the evidence. The detective communicates his unshakeable belief that the suspect is guilty, often telling the suspect that we are here to discuss why you did it—not whether you did it.⁴⁰ Denial is futile. In the penultimate step, the detective must "con" the suspect.⁴¹ The con is that the detective is here to help. If the suspect would just tell the truth, then the detective can present the case in the most favorable light to the prosecutor. If the suspect continues to lie, then he is on his own. The notion that the suspect has some control over whether the punishment will be ratcheted up or down is tacitly implied.⁴² Of course, such a notion is untrue. Once the suspect confesses, the detective must "cool out" the mark.⁴³ In this

23, 134-38; Feld, *supra* note 13, at 5; Jon B. Gould & Richard A. Leo, *One Hundred Years Later: Wrongful Convictions After a Century of Research*, 100 J. CRIM. L. & CRIMINOLOGY 825, 846-47 (2010); Saul M. Kassin, *False Confessions: Causes, Consequences, and Implications for Reform*, 17 CURRENT DIRECTIONS PSYCHOL. SCI. 249, 251 (2008); Saul M. Kassin, *The Psychology of Confessions*, 4 ANN. REV. L. & SOC. SCI. 193, 202-03 (2008); Kassin et al., *supra* note 25, at 12; Kassin & Gudjonsson, *supra* note 25, at 43; Saul M. Kassin & Karlyn McNall, *Police Interrogations and Confessions: Communicating Promises and Threats by Pragmatic Implication*, 15 LAW & HUM. BEHAV. 233, 247 (1991); Ofshe & Leo, *supra* note 27, at 999, 1088-89, 1103; and Ofshe & Leo, *supra* note 32, at 191-92, 211-12.

35. Leo, *supra* note 13, at 264-84.

36. *Id.* at 267.

37. *Id.* at 270-74.

38. *Id.* at 275, 280.

39. *Id.* at 273, 276-77.

40. *Id.* at 273-74.

41. *Id.* at 274-75.

42. *Id.* at 276-80.

43. *Id.* at 282.

final step, the detective convinces the suspect that he did the right thing—everybody makes mistakes, but few people are honorable enough to take responsibility. The detective also frames the written statement in the best possible light, perhaps even noting the suspect's remorse. The suspect leaves believing that he has helped his case, when in fact he has put the noose around his own neck. Naturally, a false confession is the most damning possible evidence—succumbing to the psychological con game has incalculable costs for innocent suspects.⁴⁴

Considering the psychological interrogation tactics of maximization and minimization—a con game—throws false confession into a new light. Suddenly, false confession is not counterintuitive. Indeed, false confession becomes rational.⁴⁵ An innocent suspect who does not know that the police can fabricate evidence would feel trapped. Inexplicably, the police have compelling evidence of guilt. If conviction is inevitable, then telling the interrogator what he wants to hear will at least moderate the punishment. Confessing also ends the interrogation ordeal. The average length of all interrogations is about one and a half hours, compared to about sixteen hours in verified false confession cases.⁴⁶ The innocent suspect's admission confirms the detective's belief that he is guilty. Although the innocent suspect's post-admission narrative should be a clear signal of a false confession—the suspect's description of the crime cannot match the verifiable facts unless the interrogator has fed the suspect such facts—it often is not.⁴⁷

When do the police use such tactics most aggressively? For decades, scholars have proposed a relationship between serious crime, aggressive interrogation, and false confession.⁴⁸ In his metaphor of interrogation as a confidence game, Leo argues that the seriousness of the crime drives the aggressiveness of the interrogation:

44. Drizin & Leo, *supra* note 13, at 921; Saul M. Kassin, *Why Confessions Trump Innocence*, 67 AM. PSYCHOLOGIST 431, 433, 438-39 (2012); Richard A. Leo, *False Confessions: Causes, Consequences, and Implications*, 37 J. AM. ACAD. PSYCHIATRY & L. 332, 337 (2009); Richard A. Leo & Richard J. Ofshe, *The Consequences of False Confessions: Deprivations of Liberty and Miscarriages of Justice in the Age of Psychological Interrogation*, 88 J. CRIM. L. & CRIMINOLOGY 429, 440-41, 443-44 (1998).

45. GUDJONSSON, *supra* note 34, at 195-96; Drizin & Leo, *supra* note 13, at 912-13; Ofshe & Leo, *supra* note 27, at 1089; Ofshe & Leo, *supra* note 32, at 191-92.

46. Drizin & Leo, *supra* note 13, at 948; Saul M. Kassin et al., *Police Interviewing and Interrogation: A Self-Report Survey of Police Practices and Beliefs*, 31 LAW & HUM. BEHAV. 381, 395 (2007).

47. See, e.g., Leo & Ofshe, *supra* note 44, at 438-40; Ofshe & Leo, *supra* note 27, at 990-97.

48. See, e.g., LEO, *supra* note 13, at 245-46; Drizin & Leo, *supra* note 13, at 946; Leo, *supra* note 13, at 273-74, 278; Pearse & Gudjonsson, *supra* note 13, at 225, 231; *Interrogations in New Haven: The Impact of Miranda*, *supra* note 13, at 1561.

The perceived seriousness of the case turns on several factors: How serious is the crime of which the suspect is accused? How threatening to society is the suspect? How badly injured or violated was the victim? How “righteous” is the victim? Was the victim conspiring with the suspect? How “solvable” is this case? In addition to sizing up the suspect, then, the detective has also sized up the victim, and thus by implication the case—all of which affect the calculus of how much effort the detective will expend attempting to elicit incriminating admissions from the suspect.⁴⁹

Leo elaborates: “Police are under greater institutional pressure to solve serious and high-profile cases and therefore put more time, effort, and pressure into interrogating suspects—conducting longer and more intense interrogations—and trying to elicit confessions.”⁵⁰ Aggressive interrogation, in turn, produces false confession. Drizin and Leo submit: “[F]alse confessions—as well as wrongful convictions based on false confession—are more likely to occur in the most serious cases because there is more pressure on police to solve such cases.”⁵¹

In sum, false confession is a product of twin psychological interrogation techniques: maximization and minimization. Such techniques are thought to be used most aggressively in serious crimes. Ironically, perhaps, as the seriousness of a crime increases, so too should the chance of a false confession. But the relationship has not been formally tested—the task we undertake here.

B. Macro Level: Historical Trends

The concept of seriousness has the potential to explain more than particular case outcomes. It can also explain historical trends, as Thomas and Leo document in their book, *Confessions of Guilt: From Torture to Miranda and Beyond*. Tracing interrogation over time, Thomas and Leo argue that interrogation methods are a response to the internal and external threats faced by a society.⁵² As threats mount, coercion intensifies. As threats fade, coercion recedes. Consequently, interrogation methods do not follow a linear path from more coercion to less coercion across human history. Instead, the evolution of interrogation resembles a pendulum—coercion waxes and wanes as threats come and go. Consider, briefly, the American case.

49. Leo, *supra* note 13, at 267-68.

50. LEO, *supra* note 13, at 246.

51. Drizin & Leo, *supra* note 13, at 946.

52. GEORGE C. THOMAS III & RICHARD A. LEO, *CONFESSIONS OF GUILT: FROM TORTURE TO MIRANDA AND BEYOND* 20 (2012).

In the late 1700s, England did not allow a confession to be admitted into evidence if the suspect had been pressured. The eighth edition of Hawkins's *Pleas of the Crown*, edited by Curwood and published in 1824, notes that a confession must be suppressed if it was generated "either by the flattery of hope, or by the impressions of fear, however slightly the emotions may be implanted . . . for the law will not suffer a prisoner to be made the deluded instrument of his own conviction."⁵³ Even urging a suspect to tell the truth rendered a confession inadmissible.⁵⁴ Early American courts embraced the Hawkins-Leach dictum. In the 1820s, for example, the New York legislature required that judges inform suspects of the right to refuse to answer questions and the right to counsel (including the right to meet with counsel before questioning and to have counsel present during questioning).⁵⁵

Yet from the 1870s to the 1930s, coercion escalated as suspects were subjected to the "third degree."⁵⁶ Sometimes a suspect was put in a "sweatbox," such as a coffin, for long periods of time.⁵⁷ In Chicago, the sweatbox was filled with red ants.⁵⁸ In Memphis, the sweatbox was filled with scalding water until the suspect confessed.⁵⁹ Or, the suspect might be beaten with a rubber hose.⁶⁰ Suspects were even hanged to secure confessions; some died before being cut down.⁶¹ Despite the embrace of the Hawkins-Leach dictum just fifty years earlier, Americans were ambivalent about the third degree. Some anti-sweating bills were introduced in state legislatures and a few succeeded.⁶² But popular sentiment favored the third degree. In 1877, for example, the *New York Times* lamented that the rack and the thumbscrew were no longer allowed, as such tools might have convinced a woman who was suspected of killing her husband to confess.⁶³ Later, in 1926, the *Saturday Evening Post* concluded that the "public admires the cleverness of the detective who secures an admission of guilt, regardless of the

53. *Id.* at 95 (quoting 2 WILLIAM HAWKINS, A TREATISE OF THE PLEAS OF THE CROWN § 34, at 595 (John Curwood ed., 8th ed. 1824)).

54. THOMAS & LEO, *supra* note 52, at 8.

55. *Id.* at 78-85.

56. *See id.* at 127-40.

57. *Id.* at 127-28.

58. *Id.* at 128.

59. *Id.*

60. *Id.*

61. *Id.* at 129; Patrick M. McMullen, *Questioning the Questions: The Impermissibility of Police Deception in Interrogations of Juveniles*, 99 NW. U. L. REV. 971, 977 (2005).

62. Edwin R. Keedy, *The Third Degree and Legal Interrogation of Suspects*, 85 U. PA. L. REV. 761, 765-66 (1937).

63. Editorial, *In Behalf of the Rack*, N.Y. TIMES (May 19, 1877), <http://query.nytimes.com/mem/archive-free/pdf?res=9F06E7D9123FE63BBC4152DFB366838C669FDE>.

methods used.”⁶⁴ Justifying violence, the story concludes: “Raw work, but they had to do it.”⁶⁵

Why did coercion surge in late nineteenth and early twentieth century America? Thomas and Leo argue that threats to the social order account for the rise of the third degree.⁶⁶ Unprecedented numbers of immigrants were arriving on American shores and urbanization was accelerating at an extraordinary pace.⁶⁷ Between 1850 and 1920, the population of New York City grew tenfold from about 500,000 to almost six million.⁶⁸ Remarkably, the population of Chicago grew a hundredfold during the same time period—from about 30,000 to almost three million.⁶⁹ The rapid ascent of organized crime also induced fear. So, too, did the rising murder rate which nearly tripled between 1880 and 1930.⁷⁰ Prohibition produced even more violence.⁷¹ The emancipation of slaves also contributed to rising fear, as many whites believed that black men were predators who could not resist the temptation to rape a white woman if given the chance.⁷² Fearing that the war on crime was being lost, police turned to the third degree. Of course, such methods were not sanctioned against respectable citizens. Instead, Americans were “willing to tolerate harsh policing, as long as it was directed at the ‘criminal classes.’”⁷³

In the 1940s, the third degree retreated as the economy improved and crime declined.⁷⁴ The Wickersham report, *Lawlessness in Law Enforcement*,⁷⁵ also contributed to the gradual demise of brutal interrogation. Police rejected the report’s depiction of officers as “corrupt thugs” but nonetheless feared a backlash that could curtail

64. THOMAS & LEO, *supra* note 52, at 123.

65. *Id.*

66. *See id.* at 101-11.

67. Carolyn Moehling & Anne Morrison Piehl, *Immigration, Crime, and Incarceration in Early Twentieth-Century America*, 46 DEMOGRAPHY 739, 740 (2009).

68. *Population History of New York from 1790–1990*, BOS. U. PHYSICS, <http://physics.bu.edu/~redner/projects/population/cities/newyork.html> (last visited Dec. 31, 2016).

69. *Population History of Chicago from 1840–1990*, BOS. U. PHYSICS, <http://physics.bu.edu/~redner/projects/population/cities/chicago.html> (last visited Dec. 31, 2016).

70. *Chicago Homicide Rates per 100,000 Residents, 1870–2000*, ENCYCLOPEDIA CHI., <http://www.encyclopedia.chicagohistory.org/pages/2156.html> (last visited Dec. 31, 2016).

71. Scott Schaeffer, *The Legislative Rise and Populist Fall of the Eighteenth Amendment: Chicago and the Failure of Prohibition*, 26 J.L. & POL. 385, 419-20 (2011).

72. *See* Iris Halpern, *Rape, Incest, and Harper Lee’s To Kill a Mockingbird: On Alabama’s Legal Construction of Gender and Sexuality in the Context of Racial Subordination*, 18 COLUM. J. GENDER & L. 743, 752-54 (2009).

73. THOMAS & LEO, *supra* note 52, at 136.

74. *Id.* at 139.

75. NAT’L COMM’N ON LAW OBSERVANCE & ENF’T, REPORT ON LAWLESSNESS IN LAW ENFORCEMENT (1931).

interrogations.⁷⁶ Some even suggested that interrogations should be conducted by judges (the practice in Europe).⁷⁷ Concerns about the falling status of police, coupled with scientific advances that made the third degree unnecessary, produced a movement toward police professionalism. In fact, the inventor of the lie detector test specifically noted that the machine would allow the police to secure the truth without resorting to the third degree.⁷⁸ Police interrogation manuals illustrate the trend. The earliest manual was written by W.R. Kidd, a Lieutenant with the Berkeley Police Department, and included a foreword by August Vollmer, a leading proponent of scientific policing.⁷⁹ The 1940 document advised police to incorporate scientific methods, including lie detector tests and crime laboratories.⁸⁰ The turn toward science and professionalism was perhaps most evident at the FBI under the direction of J. Edgar Hoover.⁸¹

By the 1950s and early 1960s, threats to the social order in America had further eroded: World War II had been won, the economy was up, crime was down, and babies were booming. Despite substantial racial tension and a gripping fear of communism, the authors argue that the time period in question was a relatively calm moment in American history, which set the stage for the Supreme Court's landmark 1966 decision in *Miranda v. Arizona*.⁸² Sensationalized in countless television crime dramas, *Miranda* warnings advise suspects of the right to remain silent and the right to counsel. The fact that eighty percent of suspects waive their *Miranda* rights does not alter the key conclusion—the ruling represented a return to the core principles of the Hawkins-Leach dictum.⁸³

But *Miranda* is not the end of the American interrogation story, as the pendulum swung again on September 11, 2001. In the wake of the terrorist attack, the CIA used “enhanced interrogation”—including stress positions, waterboarding, rectal feeding, and extreme sleep deprivation—to extract information from suspected terrorists.⁸⁴ As

76. THOMAS & LEO, *supra* note 52, at 138.

77. *Id.*

78. *Id.*

79. W.R. KIDD, POLICE INTERROGATION (1940).

80. THOMAS & LEO, *supra* note 52, at 138.

81. *Id.* at 138-39.

82. 384 U.S. 436 (1966); see THOMAS & LEO, *supra* note 52, at 169.

83. THOMAS & LEO, *supra* note 52, at 185, 190.

84. SENATE SELECT COMM. ON INTELLIGENCE, COMMITTEE STUDY OF THE CENTRAL INTELLIGENCE AGENCY'S DETENTION AND INTERROGATION PROGRAM: FINDINGS AND CONCLUSIONS 2-4 (2014), http://www.nytimes.com/interactive/2014/12/09/world/cia-torture-report-document.html?_r=0.

subsequent reports revealed, the use of torture was more extensive than the CIA had originally acknowledged.⁸⁵ Moving from black sites to the homeland, the FBI has developed guidelines that allow agents to circumvent *Miranda* warnings in terrorist cases.⁸⁶

Thomas and Leo's central thesis suggests that internal and external threats to a society drive interrogation. Thus, interrogation law does not follow a linear path because threats do not follow a linear path. The United States provides an intriguing historical example: the pendulum has swung from the restraint of early American courts, to the physical coercion of the third degree, to the restraint of *Miranda*, and most recently to the physical coercion of enhanced interrogation in the war on terror.

III. MEASURING THE SERIOUSNESS OF A CRIME

Combining the micro case argument and the macro historical argument reveals the centrality of seriousness—serious crimes and serious threats drive interrogation. But can the heinousness of a crime be objectively measured? Or is it purely subjective—a phenomenon that resides in the eye of the beholder?

Donald Black's theory of moral time argues that the seriousness of a crime can be calibrated—the greater the movement of social time, the more serious the crime.⁸⁷ Before describing Black's new concept of social time, it is important to review Black's earlier concept of social geometry (a prerequisite of social time).

A. Social Geometry

Conflicts permeate social life—people frequently define each other's behavior as rude, inconsiderate, inappropriate, immoral, or even illegal. How do disputants handle such grievances? Black argues that the response depends on social geometry—the location and direction of the conflict in social space.⁸⁸ Whether a conflict dissipates or escalates is a function of the social statuses and ties of the principal parties (disputants) and third parties (others who are aware of the conflict).⁸⁹ Does the conflict travel upward in social space (an inferior has a

85. *Id.* at 3-4.

86. THOMAS & LEO, *supra* note 52, at 231-37.

87. *See infra* Part III.C.

88. *See* DONALD BLACK, THE BEHAVIOR OF LAW 13-30 (1976) [hereinafter BLACK, THE BEHAVIOR]; DONALD BLACK, THE SOCIAL STRUCTURE OF RIGHT AND WRONG 159-60 (1993) [hereinafter BLACK, THE SOCIAL STRUCTURE].

89. BLACK, THE SOCIAL STRUCTURE, *supra* note 88, at 97-120.

grievance against a superior) or downward in social space (a superior has a grievance against an inferior)? Does the conflict span small social distances (intimates who are functionally dependent) or large social distances (strangers who are functionally independent)? Does the conflict occur between members of the same culture or different cultures? Do third parties have ties to one side but not the other, promoting partisanship? Or do third parties have ties to both sides, promoting peacemaking? The answers to such geometrical questions predict whether the aggrieved party will respond with toleration, avoidance, negotiation, settlement, or even violence.⁹⁰

Social geometry provides a static snapshot of social space at a particular moment. Black's theoretical framework has been used to understand a range of responses to conflict, such as: avoidance,⁹¹ law,⁹² therapy,⁹³ apology,⁹⁴ individual violence,⁹⁵ lynching,⁹⁶ genocide,⁹⁷ suicide,⁹⁸ and terrorism.⁹⁹

Although social geometry can explain the response to conflict, it cannot explain the cause of conflict. What triggered the original grievance? What produced the initial clash of right and wrong? Black's recent theory of moral time proposes an answer: the cause of human conflict is the movement of social time.

90. See Scott Phillips & Mark Cooney, *Aiding Peace, Abetting Violence: Third Parties and the Management of Conflict*, 70 AM. SOC. REV. 334, 335-36, 338-39 (2005).

91. M.P. BAUMGARTNER, *THE MORAL ORDER OF A SUBURB* 77-82 (1988).

92. MARK COONEY, *IS KILLING WRONG?: A STUDY IN PURE SOCIOLOGY* 19-26, 37-39 (2009).

93. ALLAN V. HORWITZ, *THE SOCIAL CONTROL OF MENTAL ILLNESS* 121-27 (1982); JAMES TUCKER, *THE THERAPEUTIC CORPORATION* 37-42 (1999) (applying Blackian theory to therapy in the context of corporations).

94. Mark Cooney & Scott Phillips, *With God on One's Side: The Social Geometry of Death Row Apologies*, 28 SOC. F. 159, 160-64 (2013).

95. MARK COONEY, *WARRIORS AND PEACEMAKERS: HOW THIRD PARTIES SHAPE VIOLENCE* 69-73, 83 (1998); Mark Cooney, *Death by Family: Honor Violence as Punishment*, 16 PUNISHMENT & SOC'Y 406, 410-11 (2014); Scott Phillips, *The Social Structure of Vengeance: A Test of Black's Model*, 41 CRIMINOLOGY 673, 676-82 (2003); Phillips & Cooney, *supra* note 90, at 336-38.

96. Robert Senechal de la Roche, *Collective Violence as Social Control*, 11 SOC. F. 97, 103-05 (1996).

97. BRADLEY CAMPBELL, *THE GEOMETRY OF GENOCIDE: A STUDY IN PURE SOCIOLOGY* 8-21 (Donald Black ed., 2015); Bradley Campbell, *Genocide as Social Control*, 27 SOC. THEORY 150, 158-60 (2009).

98. Jason Manning, *Suicide as Social Control*, 27 SOC. F. 207, 214-17, 221-23 (2012).

99. Donald Black, *The Geometry of Terrorism*, 22 SOC. THEORY 14, 18-20 (2004). Social geometry also explains the amount and credibility of the evidence in a legal case, Mark Cooney, *Evidence as Partisanship*, 28 LAW & SOC'Y REV. 833, 835-38 (1994), as well as the self-application of law, such as pleading guilty in exchange for leniency. BLACK, *THE SOCIAL STRUCTURE*, *supra* note 88, at 67-71. Unfortunately, we do not have data on the location and direction of each case in social space. But future research would profit from examining how the movement of social time, coupled with the shape of social space, influence false confession.

B. Social Time

Just as physical time is defined by a change in physical space (for instance, the earth revolving around the sun or the aging of an organism), social time is defined by a change in social space. Social time captures fluctuations in social space. Thus, social time is dynamic—social space in motion.¹⁰⁰

Movements of social time can be divided into three categories: relational time, vertical time, and cultural time.¹⁰¹ But not all movements of social time are equal. Small movements of social time cause minor conflicts; extreme movements of social time cause major conflicts. Consider relational time, defined as an increase or decrease in intimacy.¹⁰² Staring is a small intrusion into the life of another, but rape is an extreme intrusion into the life of another. Failing to respond to an email is a small retreat from the life of another, but child abandonment is an extreme retreat from the life of another. Vertical time refers to an increase or decrease in inequality (wealth, power, status) and operates in the same manner.¹⁰³ Being teased is a small step down the social ladder, but being assaulted is an extreme step down the social ladder. “Positive” events can also cause trouble because the movement of social time is a zero-sum game. For example, being promoted at work is a small step up the social ladder, yet others who were considered for the job get left behind. In the same vein, the racial integration of American schools in the 1950s was an extreme step up the social ladder for African Americans, but a proportional step down the social ladder for whites. Finally, cultural time refers to an increase or decrease in social diversity.¹⁰⁴ A new employee who suggests that an organization should be run differently has created a small fissure in the uniformity of ideas, but Darwin’s theory of evolution created an extreme fissure in the uniformity of ideas. A southern mother who tells her daughter not to argue with her grandparents about the meaning of the confederate flag has created a small contraction in the range of ideas, but Nazi book-burnings created an extreme contraction in the range of ideas. Thus, the movement of social time operates on a continuum—larger and faster movements of social time cause more conflict.¹⁰⁵

100. See generally BLACK, *supra* note 10.

101. *Id.*

102. *Id.* at 21, 43.

103. See *id.* at 59, 82.

104. *Id.* at 101, 120.

105. See *id.* at 102. For applications of Black’s theory of moral time, see CAMPBELL, *supra* note 97, at 8-21; Mark Cooney & Nicole Bigman, *Terrorism as Gravitational Attraction*, in *TERRORISM AND COUNTERTERRORISM TODAY* 25, 29-40 (Mathieu Deflem ed., 2015); Bradley

C. *The Seriousness of a Crime*

Black's theoretical model can be used to measure the seriousness of a crime. Specifically, the greater the movement of social time, the more serious the crime. Consider murder—the subject of the current research. Murder is the ultimate crime because it obliterates the most fundamental form of wealth: life. Thus, murder is a drastic movement of vertical time because the victim's status plummets to zero. But some murders are even more serious than others. The egregiousness of the murder depends on several factors, including the movement of relational time. Rape and torture are extreme seizures of intimacy—the offender expropriates the victim's body. Similarly, killing through brutal physical force is a greater surge of intimacy than killing without physical contact. Consequently, an offender who beats, stabs, or asphyxiates the victim has committed a more gruesome murder than an offender who shoots the victim. Killing a stranger is also a greater surge of intimacy than killing an intimate, as the crime traverses more relational distance.

Importantly, the egregiousness of a murder also depends on who kills whom. The murder of a high status person, such as a doctor, is a greater movement of vertical time than the murder of a low status person, such as a vagrant—the doctor's drop in status is more precipitous. In the murder of a high status person, the movement of social time also radiates outward because more people who depended on the victim—family members, friends, coworkers, and patients—are diminished. Moreover, high status victims tend to have high status friends and family members. So not only are more people diminished, the people who are diminished matter more. But the victim does not have to be an educated professional for the murder to “count.” The murder of a vulnerable victim is a greater movement of vertical time than the murder of a non-vulnerable victim because the killing involves a greater exertion of dominance (power) by the offender.¹⁰⁶ Especially

Campbell & Jason Manning, *Microaggression and Moral Cultures*, 13 *COMP. SOC.* 692, 702-03 (2014); Mark Cooney, *Family Honour and Social Time*, *SOC. REV.*, Dec. 2014, at 87, 88-92; Jason Manning, *Suicide and Social Time*, 8 *DILEMAS* 97, 98-101 (2015) (Port.); and Scott Phillips & Mark Cooney, *The Electronic Pillory: Social Time and Hostility Toward Capital Murderers*, 49 *LAW & SOC'Y REV.* 725, 732-34 (2015). Black argues that movements of social time can lead to false accusations, meaning a person is accused of “wrongdoing that never even happened.” BLACK, *supra* note 10, at 14. To be clear, we focus on offenses that did occur, but the wrong person was accused, convicted, and later exonerated.

106. Donald Black, *The Beginning of Social Time: An Interview with Myself*, 43 *INT'L J.L. CRIME & JUST.* 382, 390 (2015).

reviled are offenders who kill children, the elderly, the physically and mentally disabled, and women. The context of the murder also matters, as a predatory murder is a greater movement of vertical time than a moralistic murder.¹⁰⁷ An “innocent” female victim who is robbed and murdered, for example, suffers a greater drop in status than a “tainted” female victim who provoked the killer. While it is true that a woman who is killed by her husband after he finds her in bed with another man suffers the ultimate drop in status, her status had already been diminished by the conflict that escalated to lethal violence. Thus, a “tainted” victim does not have as far to fall as an “innocent” victim. Finally, the murder of multiple victims is particularly devastating because the movement of social time is amplified.¹⁰⁸

In short, Black argues that the seriousness of a murder turns on the following factors: rape, torture, killing through brute physical force, killing a stranger, killing a high status victim, killing a vulnerable victim, killing without provocation, and killing multiple victims. Each factor ratchets up the movement of social time.¹⁰⁹

Drawing on Black’s concept of social time, we test two predictions regarding the relationship between the seriousness of a crime and false confession:

- Among exonerations from the general prison population, false confession is more likely in murder cases than non-murder cases.
- Among exonerations from death row, false confession is more likely in the most heinous murder cases than the least heinous murder cases.

107. Predatory murders stem from the exploitation of the victim, while moralistic murders stem from conflicts. Phillips & Cooney, *supra* note 105, at 733-34.

108. Interracial killings are a movement of cultural time, but intraracial killings are not. Unfortunately, we do not have data on the race of the offender and victim.

109. Black’s theory of moral time also explains why wrongful conviction causes so much conflict. See BLACK, *supra* note 10, at 81 (describing the “devastating” movement of social time during the Black Death when “thousands were punished for something they did not do”). All punishment causes conflict because all punishment is a movement of social time. A guilty defendant who is incarcerated, for example, suffers a precipitous drop in status coupled with an immense loss of intimacy with friends and family members. But wrongful conviction causes even more conflict because an innocent defendant suffers a massive movement of social time for no reason—the punishment is not a response to a prior movement of social time (the crime), as it is for a guilty defendant. Moreover, the unilateral movement of social time cannot be reversed: exoneration and financial compensation are also movements of social time but cannot undo the original punishment.

IV. METHODS

A. Sample

The NRE was co-founded in 2012 by Samuel Gross, the Thomas and Mabel Long Professor of Law at the University of Michigan, and Rob Warden, the former Executive Director of the Center on Wrongful Convictions at the Northwestern University School of Law.¹¹⁰ The website includes all known exonerations in the United States from 1989 to the present with detailed information about each case, including a description of the crime; the defendant's age and race; the sentence imposed; the year of conviction; the year of exoneration; and, most importantly for our purposes, the evidentiary problems in the case.¹¹¹ We focus on the 1529 exonerations that occurred from 1989 through 2014, the final year for which data were available at the time of coding. Recall that 1418 defendants were exonerated from the general prison population and 111 defendants were exonerated from death row.¹¹²

B. Measures and Models

The NRE defines false confession as follows:

The exoneree falsely confessed if (1) he or she made a false statement to authorities which was treated as a confession, (2) the authorities claimed that the exoneree made such a statement but the exoneree denied it, or (3) the exoneree made a statement that was not an admission of guilt, but was misinterpreted as such by the authorities.¹¹³

Using such a definition, the NRE indicates that 234 of the 1535 exonerees falsely confessed (212 from the general prison population, 22 from death row).¹¹⁴

110. See Samuel R. Gross & Rob Warden, *Preface* to GROSS & SHAFFER, *supra* note 5.

111. *Browse Cases Detailed View*, NAT'L REGISTRY EXONERATIONS, <http://www.law.umich.edu/special/exoneration/Pages/detailist.aspx> (last visited Dec. 31, 2016). We use the NRE's codes for all the variables in the research, with the exception of our codes for the movement of social time in each case.

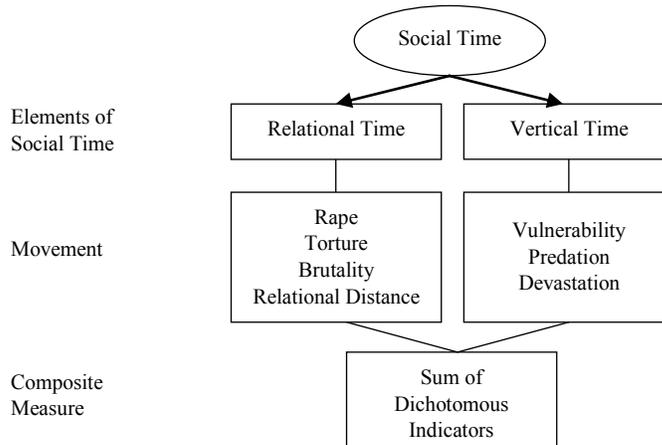
112. See *supra* text accompanying notes 2-3. Focusing on the period from 1973 to the present, the Death Penalty Information Center ("DPIC") lists 156 exonerations from death row (as of 2015). *Innocence: List of Those Freed from Death Row*, *supra* note 3. Although the DPIC provides a more exhaustive list of exonerations, it does not include the evidentiary problems that contributed to the wrongful conviction. Thus, we rely on the NRE to examine false confession.

113. *Glossary*, *supra* note 15. The Appendix herein includes NRE definitions of false confession, perjury, snitches, government misconduct, bad science, and eyewitness error. See *infra* Appendix.

114. *Browse Cases Detailed View*, *supra* note 111. Once again, it should be noted that the authors' findings and research are based on their 2014 conclusions, however, the registry is updated frequently to reflect those who have been exonerated. *Current Exonerations*, *supra* note 2.

As the seriousness of a crime increases, does the chance of a false confession also increase? To code seriousness, we examined the movement of social time in each case. Doing so required two distinct strategies. For exonerations from the general prison population, we coded murders as more serious than non-murders—murder is a greater movement of social time. For exonerations from death row, we coded the seriousness of the murder according to the following factors: rape, torture, killing through brute physical force, killing a stranger, killing a vulnerable victim, killing without provocation, and killing multiple victims.¹¹⁵ Collecting data about the details of each death row case required reading the description on the NRE website and supplementing such information with newspaper articles (via searches on Google and HighBeam Research). Our strategy for calibrating the movement of social time in death row cases is depicted below¹¹⁶:

FIGURE 1: MEASURING THE MOVEMENT OF SOCIAL TIME IN DEATH ROW CASES



Note: Because we do not have a measure of culture time, it is not included in this Figure.

To elaborate, the movement of relational time is greater if:

- The victim was *raped* (0 = not raped, 1 = raped).
- The victim was *tortured* (0 = not tortured, 1 = tortured). Forms of torture include mental anguish, brutal beating, methodical infliction of pain, violation of the victim's corpse, or a parent killed in the presence of his or her child.¹¹⁷

115. Unfortunately, we do not have data on the status of the victim.

116. See *infra* Figure 1.

117. Our approach to torture draws on Baldus's death penalty research. See generally DAVID

- The victim was killed through *brutal physical force* (0 = shot, 1 = one or more forms of physical contact). Forms of physical contact include beating, stabbing, or asphyxiating.
- The killing traversed a large expanse of *relational distance* (0 = victim non-stranger, 1 = victim stranger). Non-strangers include acquaintances and current or former intimates.

The movement of vertical time is greater if:

- The victim was *vulnerable* (0 = not vulnerable, 1 = vulnerable). Vulnerable victims include children (ages zero to twelve), adolescents (ages thirteen to eighteen), the elderly (ages sixty and above), the mentally and physically disabled, and women.
- The murder was *predatory* (0 = moralistic, 1 = predatory). Moralistic murders involve conflicts (arguments and disputes), while predatory murders involve the unprovoked exploitation of the victims.
- The *devastation* extends to multiple victims (0 = one victim, 1 = multiple victims). Victims who survived are not counted.

To create a composite measure of the heinousness of the murder, we summed the values of the seven dichotomous indicators for relational time and vertical time. The composite measure ranges from zero to six. The larger the composite score, the greater the movement of social time; the greater the movement of social time, the more atrocious the murder.

Moving beyond the theoretical measures, we draw on NRE data to control for several potentially confounding variables.¹¹⁸ Specifically, we control for the race of the defendant (white versus non-white), the age of the defendant at the time of the crime (teen versus adult), the gender of the defendant (female versus male), and the location of the crime (inside versus out of Illinois). This particular detail is significant because the

C. BALDUS ET AL., EQUAL JUSTICE AND THE DEATH PENALTY: A LEGAL AND EMPIRICAL ANALYSIS (1990); see also Scott Phillips, *Legal Disparities in the Capital of Capital Punishment*, 99 J. CRIM. L. & CRIMINOLOGY 717, 731-39 (2009); Scott Phillips, *Racial Disparities in the Capital of Capital Punishment*, 45 HOUS. L. REV. 807, 814-16 (2008); Scott Phillips, *Status Disparities in the Capital of Capital Punishment*, 43 LAW & SOC'Y REV. 807, 807-10, 823-26 (2009). Because the components of torture are subjective, examples are helpful to illustrate our coding. The methodical infliction of pain involved tormenting the victim in a slow and deliberate manner; for instance, one offender dripped hot wax on the victim's labia as he masturbated. Mental anguish involved the terror of a prolonged death, for instance, the offender abducted or kidnapped the victim. Brutal beatings involved massive injuries, for instance, a child whose skull, ribs, and legs were crushed and broken, or methods that shocked the conscience, such as one offender repeatedly stomping the victim's head into a concrete curb, or both. Because any beating that results in death is brutal by definition, this component was coded in a conservative manner. Violation of the victim's corpse involved desecration, for instance, raping, mutilating, or running over the corpse with a car. Finally, killing a parent in the presence of his or her children is self-explanatory.

118. For measurement strategies and descriptive statistics, see *infra* Table 1.

Chicago police tortured suspects to elicit confessions. Interrogators would burn, shock, beat, and even play Russian roulette with defendants during the 1970s and 1980s.¹¹⁹ As the scandal has come to light, so have the false confessions that were a result of the modern “third degree.”¹²⁰

TABLE 1: MEASUREMENT STRATEGIES AND DESCRIPTIVE STATISTICS

<i>Panel A: Exonerations from the General Prison Population (n = 1418)</i>			
Variable	Codes	Mean	Valid Cases
Murder	0 = no murder 1 = murder	.38	1418
White Defendant	0 = non-white 1 = white	.41	1417
Teen Defendant	0 = adult 1 = teen	.19	1409
Female Defendant	0 = male 1 = female	.09	1418
Illinois	0 = other state 1 = Illinois	.09	1418
<i>Panel B: Exonerations from Death Row (n = 111)</i>			
Variable	Codes	Mean	Valid Cases
Rape	0 = victim not raped 1 = victim raped	.25	110
Torture	0 = victim not tortured 1 = victim tortured	.31	111
Brutality	0 = victim killed without physical contact (shot) 1 = victim killed by physical contact	.56	110
Relational Distance	0 = victim is not a stranger 1 = victim is a stranger	.63	111
Vulnerability	0 = victim not vulnerable 1 = victim vulnerable	.65	111
Predation	0 = moralistic murder 1 = predatory murder	.87	111
Devastation	0 = single victim 1 = multiple victims	.32	111
White Defendant	0 = non-white 1 = white	.36	111
Teen Defendant	0 = adult 1 = teen	.15	111
Female Defendant	0 = male 1 = female	.01	111
Illinois	0 = other state 1 = Illinois	.16	111

119. See, e.g., JOHN CONROY, UNSPEAKABLE ACTS, ORDINARY PEOPLE: THE DYNAMICS OF TORTURE 68-72 (2000).

120. Illinois had more heinous crimes and more false confessions than the rest of the states. Specifically, Illinois had a higher percentage of murders, “high heinous” murders, and false confessions. Drizin & Leo, *supra* note 13, at 945-46; *Illinois Crime Rates 1960–2015*, DISASTER CTR., <http://www.disastercenter.com/crime/ilcrime.htm> (last visited Dec. 31, 2016). Failing to control for whether the crime occurred in Illinois would thus lead to overestimating the magnitude of the relationship between the seriousness of the crime and the chance of false confession.

Unfortunately, we are not able to control for some key variables that influence false confession. Research suggests that certain people are more susceptible to psychological interrogation, including those who are highly suggestible or compliant, those who are cognitively impaired, the developmentally disabled, and the mentally ill.¹²¹ But the absence of such controls is not a fatal flaw for two reasons: (1) the absence of such controls would only influence our findings if such people were also more (or less) apt to commit the most heinous murders; and (2) seventy percent of the people who falsely confess are mentally normal.¹²²

Cross-tabulation and logistic regression were used to examine the relationship between the seriousness of the crime and false confession (0 = no false confession; 1 = false confession). After examining false confession, we expand our analysis to include perjury, untruthful snitches, government misconduct, bad science, and eyewitness error.

V. FINDINGS

To begin, we examine the relationship between the seriousness of a crime and false confession among defendants who were exonerated from the general prison population. Table 2, Panel A, reveals that twenty-one percent (114/541) of those who were convicted of murder confessed, compared to seven percent (58/877) of those who were convicted of non-murder ($p < .001$).¹²³ Thus, exonerees who were accused of murder were three times more likely to confess. Controlling for potential confounders does not change the substantive pattern. Table 2, Panel B, reveals that the odds of a false confession are three times greater in a murder case than a non-murder case even after accounting for the race, age, and gender of the defendant, as well as the location of the crime ($p < .001$).¹²⁴ The substantive findings remain the same if the sample is restricted to the 390 exonerations from the regular prison population that included DNA evidence.¹²⁵ Among DNA exonerations, forty-one percent (64/155) of those who were convicted of murder confessed, compared to eight percent (18/235) of those who were convicted of non-murder ($p < .001$).¹²⁶ Indeed, the odds of a false confession were seven times greater in a murder case than a non-murder case ($p < .001$).¹²⁷

121. See, e.g., Kassin & Gudjonsson, *supra* note 25, at 51-53; Leo, *supra* note 44, at 335-36.

122. Leo, *supra* note 44, at 337.

123. See *infra* Table 2, Panel A.

124. See *infra* Table 2, Panel B.

125. Further information regarding these findings is available from the authors upon request.

126. See *supra* note 125.

127. Among the 111 exonerations from death row, only twenty-five included DNA. Thus, we cannot replicate the same analysis for the death row exonerations.

Turning to the patterns for the control variables in Table 2, the findings are both expected and unexpected. Scholars have argued that teens are more vulnerable to psychological interrogation than adults, as the logistic regression model confirms.¹²⁸ The fact that defendants in Illinois were more apt to confess is also not surprising given the “third degree” scandal mentioned earlier.¹²⁹ But the patterns for race and gender are perhaps unexpected—white defendants and female defendants were more apt to confess.¹³⁰ Perhaps, black defendants and male defendants are less apt to confess because they have more experience with the criminal justice system and know the police “playbook.”¹³¹

*TABLE 2: BIVARIATE AND MULTIVARIATE RELATIONSHIP
BETWEEN CRIME SERIOUSNESS AND FALSE CONFESSION:
EXONERATIONS FROM THE GENERAL PRISON
POPULATION (N=1418)*

<i>Panel A: Cross-Tabulation of False Confession by Crime Seriousness</i>	False Confession	(n)
Non-Murder	7%	877
Murder	21%	541
Chi Square = 65.63 (1df); significant at $p \leq .001$.		
<i>Panel B: Odds Ratios from the Logistic Regression of False Confession on Crime Seriousness</i>	Model 1 (n = 1418)	Model 2 (n = 1408)
Murder	3.77***	3.00***
White Defendant		1.72**
Teen Defendant		3.06***
Female Defendant		2.03**
Illinois		4.88***
Notes: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$		

Do the same findings hold true for the 111 defendants who were exonerated from death row? Recall that we created a composite measure of the movement of social time for such cases. The composite measure is based on the premise that some murders are even worse than other

128. See, e.g., Feld, *supra* note 13 at 24-26; Kassin et al., *supra* note 25, at 19-20; see also *infra* Table 2, Panel B.

129. See *supra* notes 119-20 and accompanying text and *infra* Table 2, Panel B.

130. See *infra* Table 2, Panel B.

131. Whether more experience is a product of disproportionate participation in crime, biased policing, or a combination of both is beyond the scope of the current research. The gender pattern might also be explained by the fact that women tend to be exonerated for very different types of alleged crimes than men. GROSS & SHAFFER, *supra* note 5, at 29-30, 29 tbl.5.

murders. Specifically, the most vicious murders include: rape; torture; killing through brute physical force; killing a stranger; killing a vulnerable victim; killing without provocation; and killing multiple victims. In Table 3, Panel A, we explore the relationship between the egregiousness of the murder and false confession.¹³² Interestingly, the pattern is roughly linear—as the heinousness of the murder moves from level zero to level six, the percentage of defendants who falsely confessed increases steadily (albeit imperfectly).¹³³

Although we could model the effect of the composite measure of heinousness on the odds of a false confession, we do not because the distribution of cases becomes sparse within levels.¹³⁴ Instead, we divide the cases into two groups: “low heinous” (cases from level zero to level four) and “high heinous” (cases from level five to level six). Such cases are greater than one standard deviation above the mean on the composite measure. To be clear, the terms low heinous and high heinous are only used in a relative sense—all murders are dire. Dichotomizing the cases reveals a stark pattern. Table 3, Panel B, reveals that thirty-nine percent (14/36) of those who were convicted of high heinous murders confessed, compared to seven percent (5/73) of those who were convicted of low heinous murders ($p < .001$).¹³⁵ Remarkably, then, exonerees who were accused of high heinous murders were five times more likely to falsely confess.¹³⁶ Once again, controlling for potential confounders does not change the conclusion—the odds of a false confession remain 8.2 times greater in high heinous murders ($p < .001$). However, some of the findings for the control variables do change. While teens and defendants in Illinois are still more apt to falsely confess, there is no longer a difference between white defendants and non-white defendants.¹³⁷ Given the inconsistent pattern for race, we urge caution in drawing any conclusion about its influence.

132. See *infra* Table 3, Panel A.

133. See *infra* Table 3, Panel A.

134. The substantive findings are the same regardless. See *supra* note 125.

135. See *infra* Table 3, Panel B.

136. See *infra* Table 3, Panel B.

137. See *infra* Table 3, Panel C. Gender is not included in the model because only one woman was exonerated from death row.

**TABLE 3: BIVARIATE AND MULTIVARIATE RELATIONSHIP
BETWEEN CRIME SERIOUSNESS AND FALSE CONFESSION:
EXONERATIONS FROM DEATH ROW (N = 111)**

<i>Panel A: Cross-Tabulation of False Confession by Level of Heinousness</i>	False Confession	(n)
Heinous: Level 0	0%	1
Heinous: Level 1	9%	11
Heinous: Level 2	5%	20
Heinous: Level 3	0%	17
Heinous: Level 4	13%	24
Heinous: Level 5	25%	24
Heinous: Level 6	67%	12
<i>Panel B: Cross-Tabulation of False Confession by Crime Seriousness</i>		
Low Heinous (level 0 to 4)	7%	73
High Heinous (level 5 to 6)	39%	36
Chi Square = 17.20 (1df); significant at $p \leq .001$		
<i>Panel C: Odds Ratios from the Logistic Regression of False Confession on Crime Seriousness</i>		
	Model 1 (n = 109)	Model 2 (n = 109)
High Heinous	8.66***	8.16***
White Defendant		.84
Teen Defendant		6.09*
Illinois		8.46**
Notes: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$		

To extend our main argument, we also examined the relationship between the seriousness of a crime and perjury, untruthful snitches, government misconduct, bad science, and eyewitness error. Unfortunately, we cannot examine such outcomes for defendants who were exonerated from the general prison population due to substantial missing data in the NRE. But we can examine such outcomes for defendants who were exonerated from death row, as there are no missing data. The findings, presented in Table 4, suggest that the heinousness of the crime does not influence the chance of perjury or eyewitness error.¹³⁸ But heinousness does predict the government's reliance on an untruthful snitch, government misconduct, and bad science. The state relied on a snitch who was fingering the wrong suspect in forty-two percent of high heinous murders, compared to fifteen percent of low heinous murders ($p < .01$).¹³⁹ The government committed misconduct in eighty-six percent of high heinous murders, compared to sixty-six percent of low heinous murders ($p < .05$).¹⁴⁰ Bad science was presented in thirty-nine percent of high heinous murders, compared to twenty-three percent of

138. See *infra* Table 4, Panels A, E.

139. See *infra* Table 4, Panel B.

140. See *infra* Table 4, Panel C.

low heinous murders ($p < .10$).¹⁴¹ Panel F reveals that such relationships hold after controlling for potential confounders.¹⁴²

TABLE 4: BIVARIATE AND MULTIVARIATE RELATIONSHIP BETWEEN CRIME SERIOUSNESS AND EYEWITNESS ERROR, PERJURY, SNITCH, GOVERNMENT MISCONDUCT, AND BAD SCIENCE—EXONERATIONS FROM DEATH ROW (N = 111)

<i>Panel A: Cross-Tabulation of Perjury by Crime Seriousness</i>	Perjury	(n)	
Low Heinous (level 0 to 4)	53%	73	
High Heinous (level 5 to 6)	39%	36	
Chi Square = 2.04 (1df); not significant			
<i>Panel B: Cross-Tabulation of Jailhouse Snitch by Crime Seriousness</i>	Snitch	(n)	
Low Heinous (level 0 to 4)	15%	73	
High Heinous (level 5 to 6)	42%	36	
Chi Square = 9.39 (1df); significant at $p \leq .01$			
<i>Panel C: Cross-Tabulation of Government Misconduct by Crime Seriousness</i>	Government Misconduct	(n)	
Low Heinous (level 0 to 4)	66%	73	
High Heinous (level 5 to 6)	86%	36	
Chi Square = 5.01 (1df); significant at $p \leq .05$			
<i>Panel D: Cross-Tabulation of Bad Science by Crime Seriousness</i>	Bad Science	(n)	
Low Heinous (level 0 to 4)	23%	73	
High Heinous (level 5 to 6)	39%	36	
Chi Square = 2.88 (1df); significant at $p \leq .10$			
<i>Panel E: Cross-Tabulation of Eyewitness Error by Crime Seriousness</i>	Eyewitness Error	(n)	
Low Heinous (level 0 to 4)	22%	73	
High Heinous (level 5 to 6)	22%	36	
Chi Square = .00 (1df); not significant			
<i>Panel F: Odds Ratios from the Logistic Regression of Snitch, Government Misconduct, and Bad Science on Crime Seriousness</i>	Model 1: Snitch (n = 109)	Model 2: Government Misconduct (n = 109)	Model 3: Bad Science (n = 109)
High Heinous	3.58**	3.21*	2.57*
White Defendant	1.61	.93	2.09
Teen Defendant	1.03	1.25	.12*
Illinois	2.05	1.06	.38
Notes: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$			

141. See *infra* Table 4, Panel D.

142. See *infra* Table 4, Panel F. Gross and Shaffer reach the same conclusion regarding the relationship between crime seriousness and the use of untruthful snitches. GROSS & SHAFFER, *supra* note 5, at 55.

Examining the issue from a slightly different angle, we ask whether the seriousness of a crime drives the overall number of evidentiary problems in a case. To do so, we use a summative scale comprised of false confession, perjury, untruthful snitches, government misconduct, bad science, and eyewitness error. Table 5, Panel A, demonstrates that high heinous murders have an average of 2.64 evidentiary problems, compared to an average of 1.86 evidentiary problems in low heinous murders ($p < .001$).¹⁴³ The mean difference—an additional .78 evidentiary problems in high heinous cases—does not budge after controlling for potential confounders in Table 5, Panel B.¹⁴⁴

TABLE 5: BIVARIATE AND MULTIVARIATE RELATIONSHIP BETWEEN CRIME SERIOUSNESS AND THE NUMBER OF EVIDENTIARY PROBLEMS IN A CASE: EXONERATIONS FROM DEATH ROW (N = 111)

<i>Panel A: Mean Number of Evidentiary Problems by Crime Seriousness (independent sample t-test)</i>	Mean	(n)
Low Heinous Murders	1.86	73
High Heinous Murders	2.64	36
t = 4.38 (107df); significant at $p \leq .001$ Note: The number of evidentiary problems in a case represents a sum of all six possibilities. However, the high end of the scale was recoded to four or more because the distribution becomes sparse.		
<i>Panel B: Coefficients from the Ordinary Least Squares Regression of Number of Evidentiary Problems on Crime Seriousness</i>	Model (n = 109)	
High Heinous Murders	.74***	
White Defendant	-.23	
Teen Defendant	-.04	
Illinois	.27	
Notes: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$		

Finally, we pose a different question. What are the consequences of erroneous evidence? Does the number of evidentiary problems in a case shape the number of years that a person spends in prison before being exonerated? Among exonerees whose cases had one form of erroneous evidence, the average time from conviction to exoneration was eleven years.¹⁴⁵ But two or three forms of erroneous evidence raised the

143. See *infra* Table 5, Panel A.

144. Because the count data are not over-dispersed, we used an ordinary least-squares model rather than a negative binomial model. However, the substantive findings are the same in a negative binomial model.

145. See *infra* Table 6.

average to fifteen years, and four (or more) forms of erroneous evidence raised the average to seventeen years.¹⁴⁶ As Table 6 demonstrates, controlling for potential confounders in a negative binomial regression model does not change the pattern (here, the count data are over-dispersed). Specifically, each unit increase in the number of evidentiary problems increases the expected count of years in prison by twenty percent ($p < .01$).

TABLE 6: MULTIVARIATE RELATIONSHIP BETWEEN NUMBER OF EVIDENTIARY PROBLEMS AND NUMBER OF YEARS INCARCERATED—EXONERATIONS FROM DEATH ROW (N = 111)

<i>Exponentiated Coefficients from the Negative Binomial Regression of Number of Years Incarcerated on Number of Evidentiary Problems</i>	Model (n = 111)
Number of Evidentiary Problems	1.20**
White Defendant	.89
Teen Defendant	1.10
Illinois	.81
High Heinous	.82
Notes: * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$	

VI. CONCLUSION

In 2005, Richard Leo argued that the study of wrongful conviction was “theoretically impoverished,” positing that scholars do not know the root causes of wrongful conviction.¹⁴⁷ Leo notes the following:

First, the literature on miscarriages of justice speaks with an almost unified voice about the causes of wrongful conviction[:] . . . eyewitness misidentification, coercive interrogation and police-induced false confession, the withholding of exculpatory information, the perjured testimony of informants and jailhouse testimony, the erroneous or perjured testimony of other types of witnesses, forensic or scientific fraud, police and prosecutorial misconduct, ineffective assistance of counsel, and judicial or juror error. The unexamined assumption in virtually all miscarriages writing and scholarship is that these are actual causes, and once they are identified, we will know how and why the problem of wrongful conviction occurs.

This unexamined assumption is simplistic, if not misleading. This list of causes has impeded our theoretical understanding and development of the deeper psychological, sociological, and

146. See *infra* Table 6.

147. Richard A. Leo, *Rethinking the Study of Miscarriages of Justice: Developing a Criminology of Wrongful Conviction*, 21 J. CONTEMP. CRIM. JUST. 201, 213 (2005).

institutional causes of wrongful conviction. It is superficial, and to some extent simply inaccurate, to say that eyewitness misidentification or false confession or police and prosecutorial misconduct caused either individually or in combination an innocent person to be wrongfully convicted. Eyewitness misidentification, false confession, and police and prosecutorial misconduct are not actual *root* causes. By identifying them as causes, we beg the obvious, deeper causal questions: What are the causes of eyewitness misidentification? What are the causes of police-induced false confession? What are the causes of police and prosecutorial misconduct?¹⁴⁸

Gross submits that one of the root causes of wrongful conviction is the seriousness of the crime: police and prosecutors are under pressure to pursue serious crimes even if the evidence is questionable, and serious crimes often produce questionable evidence.¹⁴⁹ Drawing on data from the NRE, and using Black's theoretical model of moral time to measure the seriousness of a crime, we test the latter portion of Gross's argument—the idea that the worst crimes produce the worst evidence. The empirical patterns are stark. As the seriousness of a crime increases, so, too, does the chance of false confession, untruthful snitches, government misconduct, and bad science. Interestingly, then, the relationship between the heinousness of a crime and erroneous evidence appears to be contingent; seriousness matters when state actors play a central role in the production of the evidence. Such a finding is perhaps not surprising. It is understandable that police officers, prosecutors, and state crime labs shift into overdrive in response to horrendous crimes. How could state actors not be moved by the rape, torture, and strangulation of an elderly woman who was out for an evening stroll? How could state actors not be moved by the annihilation of an entire family with small children just to rob the home of a few dollars? Such massive movements of social time do not produce dispassionate responses—even from grizzled veterans. But shifting into overdrive can lead to a high-speed crash. High-speed crashes also cause more damage and take longer to repair, as each additional evidentiary problem prolongs the time that a defendant spends behind bars before being exonerated.

Despite the strength of the empirical patterns, two limitations of the research should be noted. First, whether exonerations are representative of wrongful convictions remains unknown and unknowable. Still, the fit between wrongful conviction and exoneration is closer in death row

148. *Id.* at 212-13.

149. Gross, *The Risks of Death*, *supra* note 6, at 476, 478, 489-90.

cases than in the general prison population, as lawyers work tirelessly to keep the innocent from being executed.¹⁵⁰ Such efforts cannot change the fact that innocents are inevitably executed or have yet to be exonerated. But the fit between wrongful conviction and exoneration in death row cases—the main data examined here—is arguably the best fit available to researchers. Although it is possible that wrongful convictions which result in exoneration are different from wrongful convictions that do not result in exoneration, and it is possible that if we had data on all wrongful convictions the findings would be different, such a scenario seems doubtful. After all, a fundamental element of human nature appears to be at play: ends are often used to justify means. Second, even if the most serious crimes produce the most erroneous evidence, it is still possible that the rate of wrongful conviction is actually higher in minor crimes. Innocent defendants accused of minor crimes have a major incentive to accept a plea bargain to avoid the risk of a much longer sentence at trial.¹⁵¹ Thus, the functional form of the relationship between the heinousness of a crime and the chance of a wrongful conviction could be positive (serious crimes must be pursued even if the evidence is problematic, and serious crimes produce the most problematic evidence);¹⁵² negative (innocent defendants who are accused of minor crimes often accept a plea bargain to avoid the risk of trial and are therefore rarely exonerated, so the frequency of such wrongful convictions remains hidden);¹⁵³ or curvilinear (the most serious crimes and the least serious crimes both have the highest rate of wrongful conviction, albeit for different reasons).¹⁵⁴ It is also possible that there is no relationship between the seriousness of a crime and the risk of a wrongful conviction (meaning, the risk is the same at each level of seriousness). Determining the functional form of the relationship must await further research.

Returning to the central focus of our research, it is important to consider what can be done to reduce false confessions. Scholars have proposed several ideas, such as: recording police interrogations to create an objective record that can be reviewed; placing time limits on interrogations; not allowing the police to fabricate evidence during an interrogation; training police about the reality of false confession; and providing experts who can educate jurors about the reality of false

150. Samuel R. Gross et al., *Rate of False Conviction of Criminal Defendants Who Are Sentenced to Death*, 111 PROC. NAT'L ACAD. SCI. U.S. 7230, 7230-31, 7235 (2014).

151. Alexandra Natapoff, *Misdemeanors*, 85 S. CAL. L. REV. 1313, 1338, 1346 (2012).

152. *Id.* at 1338, 1356.

153. *Id.* at 1332, 1347-48, 1350.

154. *See id.* at 1356.

confession.¹⁵⁵ Our research does not add to the existing list of recommendations, but it does suggest that changes which are made should be mandatory. After all, discretionary changes are probably most likely to be circumvented in the aftermath of a horrendous crime.

To advance the current research, scholars could investigate the causal mechanisms that link heinous crimes and false confessions. We have assumed that the police use the twin psychological interrogation techniques of maximization and minimization more aggressively in response to horrific crimes. But perhaps the causal mechanisms are more nuanced. Rather than simply using the same tools with more vigor—turning up the standard heat—police might employ slightly different tactics. Perhaps police lean more on minimization than maximization, or more on maximization than minimization. Or police might lean on particular aspects of maximization, such as the fabricated evidence ploy. Examining the relationship between the egregiousness of the crime and detectives' strategies in the interrogation room could shed important light on the subject, explaining the intervening link between vile crimes and false confessions.¹⁵⁶

Although we have much more to learn, our findings arguably provide new insights into the death penalty. The types of vile crimes in which the state is most apt to seek the death penalty are the same crimes in which the state is most apt to participate in the production of erroneous evidence. Thus, the “worst of the worst crimes” appear to produce the “worst of the worst evidence,” from false confession to untruthful snitches, government misconduct, and bad science. If true, then innocent suspects charged with egregious crimes face a disquieting irony: evidence might actually be least reliable when the stakes are the highest.

155. Leo, *supra* note 44, at 342.

156. For a potential experimental strategy for conducting such research, see Fadia M. Narchet et al., *Modeling the Influence of Investigator Bias on the Elicitation of True and False Confessions*, 35 *LAW & HUM. BEHAV.* 452, 456-58 (2011) and Melissa B. Russano et al., *Investigating True and False Confessions Within a Novel Experimental Paradigm*, 16 *PSYCHOL. SCI.* 481, 483-84 (2005).

APPENDIX

NATIONAL REGISTRY OF EXONERATIONS (NRE)
TERMS AND DEFINITIONS

<i>NRE Term</i>	<i>Term Used in Article</i>	<i>NRE Definition of Term</i>
False Confession	False Confession	The exoneree falsely confessed if (1) he or she made a false statement to authorities which was treated as a confession, (2) the authorities claimed that the exoneree made such a statement but the exoneree denied it, or (3) the exoneree made a statement that was not an admission of guilt, but was misinterpreted as such by the authorities.
Perjury or False Accusation	Perjury	A person other than the exoneree falsely accused the exoneree of committing the crime for which the exoneree was later exonerated, either in sworn testimony or otherwise.
Jailhouse Informant	Snitch	A witness who was incarcerated with the exoneree testified or reported that the exoneree confessed to him or her.
Official Misconduct	Government Misconduct	Police, prosecutors, or other government officials significantly abused their authority or the judicial process in a manner that contributed to the exoneree's conviction.
False or Misleading Forensic Evidence	Bad Science	Exoneree's conviction was based at least in part on forensic information that was (1) caused by errors in forensic testing, (2) based on unreliable or unproven methods, (3) expressed with exaggerated and misleading confidence, or (4) fraudulent.
Mistaken Witness Identification	Eyewitness Error	At least one witness mistakenly identified the exoneree as a person the witness saw commit the crime.