THE INFLUENCE OF PERSONAL FACTORS

ON WRONGFUL CONVICTIONS

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ABSTRACT

Previous work has identified factors that influence the likelihood of wrongful conviction. However, fewer efforts have been made to examine how these factors influence the amount of time between wrongful conviction and exoneration. This is crucial to the expansion of innocence research and the contextualization of wrongful convictions within the criminal justice system. This study employs negative binomial regression to analyze data collected by the National Registry of Exonerations (NRE). Using a sample of 2,349 cases in which the most severe conviction was murder, sexual assault, child sexual abuse, or drug possession, I examine the influence of an exoneree's age, race, and biological sex on time to exoneration while controlling for worst crime, number of crimes, and the number of causes for wrongful conviction. Findings demonstrate the effects of age, biological sex, race, number of causes, and severity of conviction on the amount of time lost due to wrongful convictions.

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CHAPTER I

INTRODUCTION

A wrongful conviction is a significant injustice that causes considerable harm to the innocent individual who pays the price for the system's failure. In the aftermath of these errors, exonerees experience adverse health outcomes (Alexander-Bloch et al., 2020; Caitlin & Redlich, 2023; Kukucka et al., 2022), while also facing challenges related to housing (Scherr & Normile, 2022; Zannella et al., 2020), employment (Kukucka et al., 2020; Scherr & Normile, 2022), and financial compensation (Cohen, 2021; Kukucka & Evelo, 2019). Additionally, wrongful convictions generate public distrust in the legal system (Norris & Mullinix, 2020). The potential for a factually innocent individual to be falsely convicted in the United States criminal justice system is a profoundly troubling issue with major implications for the entire system's legitimacy.

Beliefs related to the ability of the courts to administer justice are related to opinions about and support for other criminal justice policies. For example, the perceived frequency with which wrongful convictions occur is negatively associated with support for capital punishment (Wu, 2021). Further, Norris and Mullinix (2020) demonstrated that narrative accounts of wrongful convictions can weaken trust in the system. While the courts may deliver wrongful convictions, the causes and consequences are present in policing and correctional institutions as well. Research has demonstrated the contribution of police misconduct to wrongful convictions (Drummond & Mills, 2020), as well as the degree of physical, psychological, and behavioral effects associated with incarcerating factually innocent persons (Alexander-Bloch et al., 2020;

Caitlin & Redlich, 2023; Shlosberg et al., 2018). The legitimacy of all three branches of the criminal justice system (i.e., police, courts, and corrections) is therefore called into question as a result of wrongful convictions. Given the importance of public opinion in policy development, wrongful conviction research is necessary to identify and promote effective preventative measures and solutions. Thus, the purpose of this study is to advance current understandings of the consequences associated with wrongful convictions by exploring the influence of individual characteristics on the amount of time lost by exonerees.

In wrongful conviction research, factual innocence is typically measured using exonerations as a proxy (Leo, 2017). A conviction may be deemed wrongful based on either factual or legal innocence. A wrongfully convicted individual who is factually innocent did not commit the crime for which they were convicted, nor did they commit any lesser included offense or engage in any other criminal activity in connection with the charge. In contrast, a person is considered legally innocent if there is insufficient evidence available to prove their guilt beyond a reasonable doubt, regardless of whether they are responsible for the allegations. For example, a wrongful first-degree murder conviction may be overturned and sent back to the lower court for retrial, where the defendant is convicted of voluntary manslaughter, which is a lesser included offense. In this case, the defendant is legally innocent of first-degree murder, but they would not be considered factually innocent given their culpability for the victim's death. The distinction between factual and legal innocence is essential, as research on wrongful convictions tends to focus on factual innocence, excluding exonerations based on legal innocence from the data (Gross & O'Brien, 2008).

DNA can provide compelling evidence of factual innocence to support exoneration. The first DNA exoneration occurred in 1989 (Innocence Project, 2023). Since then, DNA has been

used to free hundreds of wrongfully convicted individuals, with the Innocence Project reporting 375 DNA exonerations as of 2020 (Innocence Project, 2023). The post-conviction use of DNA to establish factual innocence revolutionized exonerations, drawing back the curtain on the criminal justice system and the accuracy of its convictions (Leo, 2017). The frequency with which wrongful convictions occur is difficult to estimate. Still, the thousands of exonerations documented by the National Registry of Exonerations (NRE) demonstrate that these devastating mistakes are not as rare as one would hope. As of September 27, 2023, the NRE has recorded 3,385 DNA and non-DNA exonerations in the United States since 1989 (NRE, 2023).

While the breakthrough of DNA exoneration left the public disenchanted with the justice system by exposing fallibilities in criminal procedure (Norris, 2017), scholarly awareness of the potential for an innocent individual to be falsely convicted can be traced back to the early twentieth century. Mistaken eyewitness identification, perjury, and circumstantial evidence were identified as significant predictors of wrongful criminal convictions by Edwin Borchard and his research assistant, Russell Lutz, in 1932. Borchard and Lutz (1932) presented narrative accounts of 65 cases in which innocent men were wrongfully convicted, demonstrating the administrative failures that precipitate such miscarriages of justice.

Now that the phenomenon is widely known, it inspires an entire genre filled with books (e.g., *Junk Science and the American Criminal Justice System* by M. Chris Fabricant, 2022; *The Innocent Man* by John Grisham, 2006), documentaries (e.g., *The Confession Tapes* and *How to Fix a Drug Scandal*), and podcasts (e.g., *Proof* and *Serial*) that delve into individual cases, fictional and non-fictional, as well as the factors that lead to erroneous convictions (Leo, 2017). The popularity of this topic, and the documented effect of narrative accounts of wrongful convictions on public trust in the justice system (Norris & Mullinix, 2020) highlight the

importance of enhancing scholarly and public knowledge surrounding the cases and consequences of wrongful convictions. Organizations such as the NRE are valuable in this regard, facilitating research efforts to advance social scientific knowledge surrounding wrongful convictions to identify practical implications capable of reducing the frequency of wrongful convictions in addition to providing reliable solutions for when they do occur (NRE, 2023).

CHAPTER II

LITERATURE REVIEW

Forced Reaction Theory

Several scholars have called attention to the fact that the bulk of the research on wrongful conviction is not grounded in theory. Specifically, Leo (2017) encourages scholars to embrace psychological, sociological, and organizational theories to examine the big picture of decision-making and subsequent outcomes at every stage of the criminal justice process. While arguing that criminal justice theory has always been implicit in innocence literature, Norris and Bonventre (2015) also emphasize the importance of a broad theoretical approach to promote the development of scientific knowledge and discussion surrounding the phenomenon of wrongful conviction.

The current study is framed by Kraska and Brent's (2011) description of forced reaction theory. According to this theory, society reacts to heightened crime and security issues, real or perceived, by expanding its instrument of social control: the criminal justice system. The theoretical simplicity of this perspective provides an objective framework for contextualizing unfavorable outcomes, such as wrongful convictions, within the criminal justice system (Kraska & Brent, 2011; Norris & Bonventre, 2015). Similar to the works of Cesare Beccaria (1764) and Ernest van den Haag (1975), forced reaction theorizing adheres to the philosophies of the social contract and utilitarianism (Kraska & Brent, 2011). Under the social contract, citizens trust the government enough to tolerate the restriction of their rights and freedoms to the extent necessary

to enforce legal controls that maintain the safety of society. In other words, the government's ability to maintain public safety is contingent upon its ability to maintain public trust. Therefore, the government must emphasize the greatest good without arbitrarily exercising its power. The conviction and punishment of an innocent individual represent perhaps the most devastating exercise of arbitrary government power.

The underlying philosophies of forced reaction theory (the social contract and utilitarianism) allow for the acknowledgment that generally, wrongful convictions, while preventable, are accidents (Gross & O'Brien, 2008). This is *not* to say that all the causes of wrongful convictions can be described as accidental – misconduct is, of course, intentional. However, the assumption that police or prosecutorial misconduct is committed with the explicit intention to wrongfully convict an innocent defendant does not align with the raison d'être of the criminal justice system, which is to establish laws designed to protect citizens from disorder and punish any who violate these laws (Van den Haag, 1975). Therefore, it is counterintuitive and reductive to assume that every incident of misconduct occurs in furtherance of a conspiracy to wrongfully convict an innocent person and allow the actual perpetrator to remain free. For example, a police officer may be willing to lie under oath to secure a conviction if they genuinely believe that the defendant is guilty. Here, the officer intends to lie on the stand, not to knowingly frame a factually innocent individual for a crime they did not commit. Such misconduct stems from an occupational culture that supports noble-cause corruption. This is a utilitarian concept that rationalizes unethical behavior for the sake of crime control (Pollock, 2019), thereby increasing the likelihood of wrongful convictions.

To reiterate, official misconduct is indeed intentional, not accidental. Borrowing a phrase from the medical community, wrongful convictions may be more accurately thought of as "never

events," which "are serious incidents considered wholly preventable" because of "systemic protective barriers" (Olivarius-McAllister et al., 2021) (p. 1616). The concept of never events emphasizes the importance of learning from serious incidents when they occur, preventing re-occurrence, and increasing accountability without promoting blame culture (National Health Services, 2018; Patient Safety Network, 2019). As discussed by Sangero (2019), accidents are a fact of life, but a high rate of accidents is neither inevitable nor acceptable. Like the healthcare field, the criminal justice system is and always will be subject to human error. Accordingly, forced reaction theory proposes a criminal justice system operated by rational individuals whose decisions are informed by the goal of maintaining the safety of society. This may lead them to make decisions that ultimately contribute to a wrongful conviction. Exercises of power in the name of criminal justice occur in response to the belief that there is a growing crime problem. Still, they hinge on the moral legitimacy of enforcement and punishment (Kraska & Brent, 2011). While Norris and Bonventre (2015) claim that forced reaction theorists may view wrongful convictions as "simply an unfortunate, but not particularly egregious" (p. 935) consequence of protecting society by increasing crime control, I argue that under this perspective, a wrongful conviction represents a significant threat to the moral legitimacy of government power.

Exoneration

Once a wrongful conviction is discovered, it must be exonerated. Exoneration is the official reversal of a conviction after establishing innocence during the appellate process (Bonventre, 2020; NRE, 2023). Previous research on false convictions has relied on data collected by the National Registry of Exonerations (NRE) and the Innocence Project, with

exonerations serving as a proxy for factual innocence (Bonventre, 2020; Drummond & Mills, 2020; Mogavero et al., 2022; Norris & Mullinix, 2020; Rafail & Mahoney, 2019; Vick et al., 2021). Due to the high burden of proof required to establish one's innocence legally, exoneration data provides an unbiased measurement of factual innocence (Leo, 2017; Loeffler et al., 2019). Using data on known exonerations allows researchers to study the regularity of wrongful convictions and the factors that lead to the conviction of an innocent defendant (Leo, 2017). The data collected by these organizations include the total number of exonerations and the circumstances surrounding wrongful convictions (Innocence Project, 2023; NRE, 2023).

The collection of data on exonerations has facilitated a variety of significant contributions to the literature on wrongful convictions, such as the factors that cause them (Berube et al., 2022) and estimates of the frequency with which they occur (Gross et al., 2014; Roman et al., 2012). Regarding causal factors, research has identified six "canonical" causes of wrongful convictions, including eyewitness misidentification, false confessions, perjury/false accusation, forensic error, official misconduct, and ineffective counsel (Berube et al., 2022; Leo, 2017; NRE, 2023). Estimates of the frequency of wrongful convictions vary from scholar to scholar. Examining data collected from the Virginia Department of Forensic Sciences (DFS), Roman and colleagues (2012) found a 5% wrongful conviction rate among homicide and sexual assault convictions (n = 715). For sexual assault convictions alone (n = 422), the rate of wrongful convictions increased to 8%. These cases involved offenses that occurred between 1973 and 1987 for which there was physical evidence in the form of DNA collected between 2009 and 2011 (Roman et al., 2012). Gross and colleagues (2014) used survival analysis to examine a sample of 7,482 defendants who were sentenced to death between 1973 and 2004. They placed the wrongful conviction rate in capital cases at 4.1%. Interestingly, a recent study by Loeffler and colleagues (2019)

demonstrated the potential of self-report data in estimating the dark figure of wrongful convictions (i.e., the number of false convictions that have not been discovered). Their analysis of self-report data collected from a Pennsylvania state prison showed that 6% of inmates were wrongfully convicted, with false or implausible claims of innocence occurring in an estimated 2% of cases (Loeffler et al., 2019).

Causes of Wrongful Convictions

As previously stated, the factors that contribute to wrongful conviction include eyewitness misidentification, false confessions, perjury/false accusation, forensic error, official misconduct, and ineffective counsel (Berube et al., 2022; Campbell, 2018; Gross, 2017; Gross et al., 2017; Leo, 2017; NRE, 2023). Further, an analysis of data collected from the Preventing Wrongful Convictions Project (PWCP) demonstrated that state punitiveness increases the likelihood that a case will end in a false conviction (Hail-Jares et al., 2020). Typically, a wrongful conviction results from a combination of factors (Berube et al., 2022; Jackson et al., 2022). Exonerees are 1.8 times more likely to make a false confession when official misconduct is involved (Vick et al., 2021). Failure to disclose exculpatory evidence is the most common form of prosecutorial misconduct, while misconduct involving interrogation techniques is the most common among police (Drummond & Mills, 2020). Neither the frequency of these issues nor the associated effects on case outcomes are uniform across demographic variables such as race and gender.

The circumstances surrounding the factors that contribute to wrongful convictions have also been studied. For example, Scherr and Dror (2021) found that forensic experts incorrectly associated their work with more exonerations than wrongful convictions. These perceptions,

among others, demonstrate ingroup biases that may include forensic analysis, potentially affecting judgments of evidence and ultimate decisions (Scherr & Dror, 2021). In addition to ingroup biases in forensic analysis, evidence suggests that the severity of the crime is positively associated with levels of confidence in jurors' and practitioners' judgments regarding a defendant's guilt (Pearson et al., 2018).

Time Lost

While substantial research examines the process through which a wrongful conviction occurs and the factors that influence that process, less attention has been paid to the aftermath of a wrongful conviction. In addition to losing their freedom, wrongfully convicted individuals may also suffer losses in terms of their quality of life (Kukucka et al., 2022), money they would have earned if not for their incarceration (Cohen, 2021), future employment potential (Kukucka et al., 2020; Scherr & Normile, 2022), and even life expectancy (Caitlin & Redlich, 2023). The severity of negative outcomes associated with incarceration may be related to the variable under examination in the current study: time. According to the NRE (2023) database, the average number of years lost per case is 8.6. This figure represents years spent in prison and does not include the time lost in jail awaiting trial (NRE, 2022).

Previous studies have employed different methods for measuring time lost. Several scholars measure time lost as the average length of time between conviction and exoneration (Caitlin & Redlich, 2023; Cousino et al., 2018; Hail-Jares et al., 2020; Olney & Bonn, 2015; Rafail & Mahoney, 2019; Shermer & Mannes, 2021). On the other hand, Scherr and Normile (2022) distinguished between release and exoneration, recognizing that wrongfully convicted individuals may be released before they are officially exonerated. This allowed them to examine

the amount of time between release and exoneration (Scherr & Normile, 2022). Itskovich and colleagues (2023) also employed a different method, measuring time lost relative to the sentence imposed. To calculate relative prison time, the authors divided the number of days between conviction and exoneration by the number of days in the imposed sentence (Itskovich et al., 2023). The current study measures time lost as the difference in years between exoneration and conviction.

Evidence suggests that the amount of time lost varies according to several factors, such as the specific cause of the wrongful conviction. For example, Redlich and colleagues (2023) reported that cases involving false guilty pleas (FGPs) had shorter periods between conviction and exoneration (2.22 years) than those that went to trial (11.64 years). This may be due to the shorter length of sentences handed down in FGP cases, relieving defendants of the burden of fighting to prove their innocence from behind bars (Redlich et al., 2023). The length of the exoneration process in FGP cases may also be accelerated due to avoiding trial, leaving fewer records to review before a conviction can be overturned (Redlich et al., 2023). Other factors that contribute to wrongful conviction have also been linked to increases in time lost. These include inadequate legal defense (Itskovich et al., 2023), official misconduct, mistaken eyewitness identification, and false confessions (Shermer & Mannes, 2021).

Researchers have established that an individual's risk of being wrongfully convicted varies by factors including gender, age, race, and type of crime (Bjerk & Helland, 2017; Gould et al., 2014; Gross et al., 2017). Recently, scholars have begun to question the extent to which these factors influence the consequences associated with wrongful conviction, such as the amount of time an innocent individual spends in prison. Shermer and Mannes (2021) found that many variables that predict whether an individual will be exonerated can also predict how long it will

take. Itskovich and colleagues (2023) also evaluated the influence of several variables on the amount of time served by wrongfully convicted individuals. They measured time lost in two ways: time lost as the square root of relative prison sentence and time lost using absolute prison time. Shermer and Mannes (2021) calculated time lost by subtracting the year of conviction from the year of exoneration. Both studies demonstrate that race, age, type of crime, and the introduction of DNA evidence during the exoneration process increased the length of the exoneration process (Itskovich et al., 2023; Shermer & Mannes, 2021). Unlike Itskovich and colleagues (2023), Shermer and Mannes (2021) found a statistically significant difference in exoneration timing between men and women, with men taking nearly twice as long as women to be exonerated.

The results of the study by Itskovich and colleagues (2023) show that the length of the exoneration process varies by race, with wrongfully convicted Whites serving 31.64% of their sentence and wrongfully convicted non-Whites serving 34.47% (Itskovich et al., 2023). This is consistent with previous findings regarding the effect of race on the exoneration process. For example, Rafail and Mahoney (2019) found that Black defendants are exonerated more slowly than White defendants. Specifically, the average number of years between conviction and exoneration is 9.4 for White exonerees and 12.48 for Black exonerees (Rafail & Mahoney, 2019). Similarly, Shermer and Mannes (2021) reported averages of 12.96 years to exoneration for Black individuals and 9.57 years for other races. Further, their results demonstrated that being under the age of 30, Black, and male increases time to exoneration considerably. The exoneration process for young Black men in their sample was 3.5 years longer compared to the entire sample, which had an average of 11.28 years to exoneration (Shermer & Mannes, 2021).

Regarding the type of crime and DNA evidence, Shermer and Mannes (2021) found that time to exoneration increases with both the severity of the crime and DNA testing. Comparatively, Itskovich and colleagues (2023) found that exonerees who were falsely convicted of murder served less time relative to their sentence than those who were convicted of other crimes, including child sexual abuse, drug possession, and sexual assault. Tests of the relationship between DNA and time lost have yielded mixed results, with some researchers finding that the use of DNA evidence slows down the exoneration process (Gould & Leo, 2015; Itskovich et al., 2023; Shermer & Mannes, 2021), and others finding the opposite (Olney & Bonn, 2015). Rafail and Mahoney (2019) have suggested the importance of time-varying measures for accurately estimating the effect of DNA on exoneration.

Exoneree Characteristics

The demographic characteristics of exonerees reflect the portion of the population most severely affected by wrongful convictions. Over half (53%) of all exonerees in the NRE database are Black (NRE, 2023), and this has led innocence literature to pay particular attention to race and the racial disparity in wrongful convictions and exonerations. Compared to innocent White defendants, the likelihood of receiving a false murder conviction is seven times greater for innocent Black defendants, and Black people in prison for murder are 50% more likely to be innocent than other prisoners with murder convictions (Gross et al., 2017).

Racial disparities also exist in the investigatory phase. For example, Black exonerees wrongly accused in homicide cases involving female victims, false/misleading forensic evidence, and official misconduct are more likely to have falsely confessed during interrogation (Vick et al., 2021). Further, in cases involving a witness who is not the same race as the suspect, the

likelihood of mistaken identification is 1.56 times greater than in cases involving a witness and suspect of the same race (Meissner & Brigham, 2001). This phenomenon, known as "own-race bias" or the "other-race effect," is well-established and continues to be demonstrated in experimental psychological research (Herzmann et al., 2021; McKone et al., 2023). However, recent research has suggested that the other-race effect may have less to do with wrongful convictions than previously believed. Katzman and Kovera (2023) conducted a meta-analytic assessment of the explanatory power of own-race bias regarding racial disparities in wrongful convictions caused by eyewitness misidentification. They found that identification accuracy rates increase for White suspects and decrease for Black suspects, regardless of the race of the witness (Katzman & Kovera, 2023). The researchers concluded that mistaken eyewitness identification caused by own-race bias is not the main reason most exonerees convicted based on misidentification are Black. Rather, Katzman and Kovera (2023) pointed to systemic racism in police identification procedures – indicated by the amount of evidence acquired before the suspect is brought in for an identification procedure – and emphasized the necessity of evidence-based suspicion requirements.

Compared to race, fewer research efforts have focused on the influences of age and gender in wrongful convictions. Regarding the age of the exoneree at the time of the conviction, Gross et al. (2014) found that older defendants are less likely to be wrongfully convicted. Scholars have noted that men are exonerated at higher rates than women, with Lewis and Sommervold (2015) suggesting that this may be because DNA evidence is more frequently available in crimes typically committed by men (e.g., sexual assault). In contrast, women may be more likely to be prosecuted in cases involving crimes for which less objective evidence, such as a child's testimony, is available (NRE, 2023). Interestingly, women are more likely to be falsely

convicted for crimes, both violent and nonviolent, that never actually took place (i.e., "no-crime" cases). Female exonerees make up 9% of all cases recorded by the NRE but 16% of no-crime cases (NRE, 2023). Jackson and colleagues (2022) found that over 70% of female exonerees' convictions were no-crime cases, compared to 33.8% of male exonerees. Of these cases, a disproportionate number involved homicides that never occurred, and most were the product of false, misleading, or misinterpreted evidence (Jackson et al., 2022).

Further, 86% of female exonerees whose convictions involved a child victim were no-crime cases (NRE, 2023). The overrepresentation of women in no-crime exonerations may be the product of gender stereotypes, providing a basis for decision-making by criminal justice professionals who may expect women to be mothers and caregivers (Henry, 2020; NRE, 2023). These outcomes, combined with possible factors affecting the quality of evidence available in the crimes for which women are prosecuted, may explain the prevalence of no-crime exonerations among women (NRE, 2023).

Type of Crime

Several of the wrongful conviction trends that have been documented reflect the type of crime in terms of its severity. Serious crimes, such as rape and murder, are predisposed toward factors that have been found to contribute to wrongful convictions (Gross, 2017; Gross et al., 2017; Pearson et al., 2018). Violent crimes represent the majority of exonerations but less than 20% of felony convictions. While misdemeanors make up 80% of all criminal convictions, they represent 4% of exonerations recorded by the NRE (Gross, 2017). Findings from a study by Pearson and colleagues (2018) suggest systematic bias related to the type of crime among jurors and prosecutors, with confidence in a defendant's guilt depending heavily on the type of crime.

The more serious the crime, the more confident jurors and prosecutors are in the defendant's culpability, regardless of the evidence (Pearson et al., 2018). This finding could explain why wrongful convictions are documented more frequently in violent crime cases.

Wrongful murder convictions account for 36% of exonerations since 1989 (NRE, 2023). According to one study, exonerees who were wrongfully convicted of murder served less time relative to their sentences than those who were convicted of other crimes, including child sex abuse (9% of exonerations), drug possession (17% of exonerations), and sexual assault (11% of exonerations), among others (Itskovich et al., 2023; NRE, 2023). Wrongful conviction cases most likely to have gone to trial include murder, sexual assault, and crimes against children. In contrast, false guilty pleas are more prevalent in wrongful convictions for less serious crimes, such as drug-related offenses (Redlich et al., 2023).

Current Study

The review of the literature demonstrates that the amount of time it takes to exonerate a wrongfully convicted individual may be influenced by the same characteristics that contribute to the risk of wrongful convictions (Gould & Leo, 2015; Itskovich et al., 2023; Rafail & Mahoney, 2019; Redlich et al., 2023; Shermer & Mannes, 2021). This study seeks to advance current understandings of the harm associated with wrongful convictions. By focusing on the factors that influence the amount of time lost due to these miscarriages of justice, this research offers insights that may help to accurately conceptualize the consequences of false convictions, which is necessary for the development of evidence-based policies and practices designed to provide meaningful solutions for exonerees. Accordingly, the current study examined the following

research question: *To what extent are demographic and case characteristics related to the amount of time it takes to exonerate an individual who has been wrongfully convicted?*

Previous studies have yielded evidence to suggest relationships between demographic characteristics (i.e., race, age, gender) and the amount of time between wrongful conviction and exoneration. Specifically, Itskovich et al. (2023), Rafail and Mahoney (2019), and Shermer and Mannes (2021) have identified race and age as indicators of the amount of time it will take to exonerate a wrongfully convicted person. Rafail and Mahoney (2019) found a significant difference in time to exoneration between Black and White individuals, with Black exonerees remaining in wrongful incarceration for more years than White exonerees. Further, Shermer and Mannes (2021) highlighted the combined impact of race, age, and gender on the exoneration process, with young Black men suffering more years between conviction and exoneration than the rest of the sample. Together, these studies inform the following hypotheses:

Hypothesis 1: Racially/ethnically marginalized exonerees will suffer more time lost compared to White exonerees.

Hypothesis 2: Exonerees wrongfully convicted at a younger age will suffer more time lost than those older at the time of their conviction.

Hypothesis 3: The amount of time lost will vary by gender, with men losing more time than women.

There is also evidence to suggest relationships between case characteristics and time lost due to wrongful conviction. For example, Shermer and Mannes (2021) reported an increase in time to exoneration for more severe crimes. The severity of the crime may influence the likelihood of official misconduct, as law enforcement officers and prosecutors may feel more pressure to secure convictions through any means necessary when working on these cases. Vick

and colleagues (2021) found a higher likelihood of false confession as a result of official misconduct. Their finding demonstrates how multiple causes of wrongful conviction – here, false confessions and official misconduct – can become involved in a particular case, which may affect the exoneration process. This provides a basis for the following hypotheses:

Hypothesis 4: The amount of time lost will increase with the severity of the crime and/or the number of criminal convictions.

Hypothesis 5: The amount of time lost will increase with the number of factors that contributed to the wrongful conviction.

Analyzing data collected by the NRE, I examined the relationship between the absolute amount of time an exoneree loses due to a wrongful conviction in relation to their individual characteristics while controlling for worst crime, number of crimes, and number of causes for wrongful conviction. Only cases in which the most severe conviction was murder, sexual assault, child sexual abuse, or drug possession are included in the sample. Individual case characteristics are expected to influence the amount of time lost due to a wrongful conviction, with more severe wrongful convictions resulting in more time lost by exonerees.

CHAPTER III

RESEARCH METHODOLOGY

Data and Sample

This study used publicly available data from the National Registry of Exonerations (NRE) data. These data contain all exonerations in the United States since 1989. As of January 9, 2023, there were 3,355 cases in the database. These cases represent convictions rendered between 1956 and 2020 and exonerated between the years 1989 and 2022. The NRE (2023) collects only publicly available information about known exonerations. Exonerations are identified according to whether the convicted individual was declared factually innocent by a government official or agency or if a pardon, dismissal, or acquittal occurred in response to new evidence of innocence (NRE, 2023). Details regarding exonerees, the most severe crime with which they were charged, their conviction, and their exoneration are provided in the NRE database. For the current study, analysis was restricted to the 2,349 cases in which the most severe conviction was murder, sexual assault, child sexual abuse, and drug possession.

Outcome Measure

The dependent variable, time lost, was a continuous measure of the amount of time, in years, the individual spent wrongfully convicted. While others have studied time lost with various measures, this study follows that of Shermer and Mannes (2021). To create this variable,

the year of conviction was subtracted from the year of exoneration. As shown in Table 1, the average exoneree lost 13.68 years due to wrongful conviction, with a range of 0 to 58 years.

Independent Variables

In accordance with the literature, I examined several exoneree and case characteristics that might be expected to influence time lost following a wrongful conviction (see Table 1). Exoneree characteristics included age, biological sex, and race. The age of the individual is measured in years at the time of conviction. Among the 2,349 individuals included in the analysis, the average age at the time of conviction was 27.55, ranging from 11 to 69. Biological sex was included and coded by the NRE as a binary measure (e.g., male = 0; female = 1). The overwhelming majority (92.3%) of cases included in the sample were male exonerees (n = 2,167), while female exonerees accounted for 7.7% (n = 182) of the sample.

Table 1 Summary Statistics (N=2,349)

Variable	Mean	Range	*N*	%
Time Lost	13.68	0-58		
Age	27.55	11-69		
Sex[a]				
Male			2,167	92.30
Female			182	7.70
Race/Ethnicity[b]				
Black			1,329	56.60
White			724	30.80
Hispanic			261	11.10
# of Convictions				
One offense			1,398	59.51
More than one offense			951	40.49
# of Causes for Wrong Conviction				
One Cause			521	24.18
More than one cause			1,828	77.82
Most Serious Offense[c]				
Murder			1,178	50.10
Drug Possession			506	21.50
Sexual Assault			354	15.10
Child Sex Abuse			311	13.20

Note. [a] Male is reference category. [b] White is referent. [c] Murder is referent.

The NRE provides seven categories for the race/ethnicity of exonerees: *Asian, Black, Hispanic, Native American/Alaska Native, White, Other,* and *Don't Know.* Due to low representation, the *Asian, Native American/Alaska Native, Other,* and *Don't Know* categories were removed. When combined, they comprised less than 3.5% of the sample. The final model

included three categories: *White, Black,* and *Hispanic.* Of these exonerees, the majority were Black (56.6%), 30.8% were White (reference group), and 11.1% were Hispanic.

Case characteristics included binary indicators of whether the exoneree had been convicted of multiple crimes and if multiple causes were involved in their wrongful conviction.[1,2] Many exonerees (40.49%) had been convicted of multiple offenses. Further, 77.82% of the wrongful convictions involved more than one cause (e.g., official misconduct, perjury/false accusation, witness misidentification, false confession, etc.). Given my interest in determining the unique influence of the seriousness of conviction on time lost, I included binary indicators of each exoneree's most serious conviction as categorized by the NRE.[3] For this, the four highest convictions were measured: murder (reference group), sexual assault, sexual abuse of a child, or drug possession. In most of the cases in the sample, murder (50.1%) was the most serious conviction, followed by drug possession (21.5%), and sexual abuse of a child (13.2%).

Analytic Strategy

Consistent with Osgood's (2000) recommendations for aggregated count data, I used a Poisson-based estimator to predict variation in counts of time lost in years across the sample of exonerees. The standard Poisson model assumes equidispersion between the mean of an outcome measure and its variance. However, data used in criminological research are often overdispersed. Overdispersion indicates violations of distributional assumptions and can cause nonsignificant

[1] 1398 exonerees (59.5%) were convicted of a single offense, 563 (24%) were convicted of two offenses, 263 (11.2%) were convicted of 3 offenses, 94 (4%) were convicted of 4 offenses, 11 (0.9%) were convicted of 5 offenses, 6 (0.3%) were convicted of 6 offenses, and 3 (0.1%) were convicted of 7 offenses.

[2] 521 (22.2%) cases involved a single cause, 987 (42%) involved 2 causes, 540 (23%) involved 3 causes, 241 (10.3%) involved 4 causes, 57 (2.4%) involved 5 causes, and 3 (0.1%) involved 6 causes.

[3] Exoneree most serious crime was coded by the NRE as the "single worst crime for which the exoneree was convicted of or pled guilty to." (NRE Coding Manual for Public Spreadsheet, p. 3).

predictor variables to appear significant (Hilbe, 2011). Preliminary analysis indicated that the dependent variable, time lost, was overdispersed, with the variance (95.585) exceeding the mean (13.68). This finding, confirmed via post-Poisson goodness of fit tests Long and Freese (2006) suggested the need for a negative binomial estimator that allowed for the introduction of an error term. Further, robust standard errors were used to address concerns of potential non-independence between observations.

CHAPTER IV

RESULTS

Results of the negative binomial analysis of variation in time lost due to wrongful conviction are displayed in Table 2. Compared to White exonerees, Black exonerees lost an average of 23.1% more years.[4] On average, Hispanic exonerees lost 8.5% fewer years than White exonerees, though this relationship achieved only marginal statistical significance. Supportive of hypotheses 2 and 3, each standard deviation in age (9.56 years) was associated with a 13.4% decrease in time lost, indicating that exonerees convicted at a younger age lost significantly more time. The impact of biological sex and race was also apparent. Female exonerees lost, on average, 18.7% less time than their fellow male exonerees.

[4] Percent change interpretations are obtained by multiplying a raw coefficient by the standard deviation of that predictor, exponentiating the product, subtracting 1, and multiplying the result by 100 ([exp (B1 * SD1) - 1] * 100).

Table 2 Negative Binomial Regression (N=2,349)

Variable	*Coefficient*	*RSE*	*N*	%
Age	-0.0151***	0.0016		
Sex: Female	-0.2072***	0.0606		
Race: Black	0.2080***	0.0332		
Race: Hispanic	-0.0889†	0.0501	2,167	92.30
Multiple Offenses	0.0496	0.0310	182	7.70
Multiple Causes	0.3508***	0.0391		
Drug Possession	-0.6733***	0.0417	1,329	56.60
Sexual Assault	-0.0574	0.0399	724	30.80
Child Sex Abuse	0.1708***	0.0497	261	11.10
Constant	2.7491***	0.0639		

Note. † $p \leq .10$, * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$.

The impact of case characteristics was less consistent. Being convicted of multiple offenses had no statistically significant impact on years lost. However, cases involving multiple causes of wrongful conviction (e.g., false confession, mistaken eyewitness identification, official misconduct, etc.) also involved an average of 46.5% more years lost, as expected in hypothesis 5. This inconsistency extended to the seriousness of conviction. In comparison to exonerees wrongfully convicted of murder, those wrongfully convicted of child sexual assault lost an average of 15.7% less time. Comparatively, those convicted of drug possession lost an average of 49% less time than those wrongfully convicted of murder. Interestingly, there was no statistically

significant difference in the average amount of time between those wrongfully convicted of sexual assault and those wrongfully convicted of murder.

CHAPTER V

DISCUSSION

Forced reaction theory argues that the criminal justice system exercises greater power in response to real or perceived threats posed by crime and criminal offenders (Kraska & Brent, 2011). Drawing from the philosophies of utilitarianism and the social contract, this perspective suggests that for some criminal justice professionals, "the ends justify the means" when it comes to protecting society from crime. This attitude is not conducive to the administration of justice, especially since perceptions of threat are likely to be biased. In the context of wrongful convictions, forced reaction theory may shed light upon the behavioral and decision-making processes that increase both the likelihood of wrongful convictions and the consequences (Norris & Bonventre, 2015). The objective of this study was to examine the extent to which the amount of time an exoneree loses due to wrongful conviction is related to individual demographic and case characteristics while controlling for worst crime, number of offenses, and number of contributing factors. My results demonstrate the effects of race, age, gender, type of crime, and number of contributing factors. The findings align with previous works (Itskovich et al., 2023; Rafail & Mahoney, 2019; Shermer & Mannes, 2021) and suggest that both demographic and case characteristics influence the number of years an exoneree loses.

Hypotheses 1, 2, and 3 asserted the expectation that time lost would vary based on personal factors. Specifically, racial minorities, males, and younger persons would lose more

time due to wrongful conviction. Under the forced reaction perspective, certain demographic characteristics may increase the perceived threat posed by the defendant, reflecting several biases that may inform behavior and decisions made during the investigation, charging, trial, and sentencing phases. The results of the analyses support these expectations.

First, Black exonerees in this study lost more time than both White and Hispanic exonerees, with Hispanic exonerees losing the least amount of time due to wrongful conviction. However, in contrast to Hypothesis 1, Hispanic exonerees lost significantly *less* time than White exonerees. My results mirror those of Rafail and Mahoney (2019), who found that wrongfully convicted Black individuals had to wait an average of 12.48 years between conviction and exoneration, while White exonerees and exonerees of other races waited an average of 9.40 and 8.42 years, respectively. Similarly, Itskovich and colleagues (2023) found that racially marginalized minority (*Black/Hispanic/Asian/Native American*) exonerees served 8.55% more of their sentence before being exonerated than White exonerees. These findings, along with others, demonstrate the unique ways in which racial discrimination exacerbates the impact of the wrongful conviction phenomenon for Black individuals. In addition to facing a greater risk of wrongful conviction (Bjerk & Helland, 2017; Gross et al., 2017), the fight to prove their innocence is also greater and longer for wrongfully convicted Black individuals than it is for other races (Itskovich et al., 2023; Rafail & Mahoney, 2019; Shermer & Mannes, 2021). Rafail and Mahoney (2019) attribute this to racial disparities in policing and sentencing practices in conjunction with higher levels of poverty and concentrated disadvantage among Black communities. This combination places Black individuals at a higher risk of being wrongfully convicted while also depriving them of the resources necessary to get their convictions overturned (Rafail & Mahoney, 2019). Framed within the context of forced reaction theory, the

influence of race on the risk of and consequences associated with wrongful convictions may indicate that, when faced with Black suspects or defendants, criminal justice professionals react to a threat that has been manufactured and exaggerated by racial prejudices.

Second, the current study yields findings consistent with previous studies regarding the effect of age on time lost (Itskovich et al., 2023; Rafail & Mahoney, 2019; Shermer & Mannes, 2021). Specifically, my results demonstrate a negative association between age and time lost, with exonerees who were convicted at a younger age losing significantly more time than exonerees who were older at the time of conviction. In other words, the younger an individual was at the time of the wrongful conviction, the more time they lost, aligning with the expectations of hypothesis 2. Criminal justice professionals may presume that youths are not only more likely to offend, but also to continue offending. This presumption may lead them to respond by being harsher and less forgiving with younger suspects or defendants, regardless of whether they are factually guilty.

Third, the results of the analyses support hypothesis 3, as they demonstrate that, on average, female exonerees lost an average of 18.7% less time than male exonerees. This is consistent with previous work showing the differences in time lost between male and female exonerees. Specifically, Shermer and Mannes (2021) found that male exonerees lost nearly twice as much time as women. Like the effects of race and age, gender may influence criminal justice professionals' perceptions of the degree to which a suspect or defendant threatens the safety and order of society.

Turning to case characteristics, the results of the current study suggest that exonerees convicted of less serious offenses may lose less time, which is supportive of hypothesis 4. This aligns with Shermer and Mannes's (2021) finding that time to exoneration increases with the

severity of the crime. Both findings are consistent with the utilitarian underpinnings of forced reaction theory, as more serious offenses provoke more severe responses by the criminal justice system for the sake of promoting the greatest good through the proportionate punishment of offenders. In contrast, Itskovich and colleagues (2023) found that exonerees wrongfully convicted of drug possession/sale serve more of their sentences than those wrongfully convicted of murder. However, the current study measured time lost differently and found that a wrongful drug possession conviction was associated with less time lost compared to a wrongful murder conviction. While I measured time lost as the difference in years between conviction and exoneration, Itskovich and colleagues (2023) divided the number of days between conviction and exoneration by the sentence imposed to calculate relative prison time. It should be noted that their results did not change when they ran the analysis measuring the dependent variable as absolute prison time (Itskovich et al., 2023).

Finally, the results support hypothesis 5, demonstrating that the amount of time lost increases when multiple causes of wrongful conviction (e.g., false confession, mistaken eyewitness identification, official misconduct, etc.) are present. Specifically, cases in which multiple causes of wrongful conviction were identified lost an average of 46.5% more years than cases involving only one cause of wrongful conviction. This is concerning when considered alongside the significant association between official misconduct and false confession reported by Vick and colleagues (2021), who found that the presence of official misconduct increased the probability of the exoneree having falsely confessed by over 80%. Under forced reaction theory, it may be surmised that acts of official misconduct may be committed as a form of noble-cause corruption in which a professional in the criminal justice system rationalizes unethical behavior

(e.g., withholding exculpatory evidence, lying under oath, etc.) by prioritizing the goal of catching criminals over the means (Pollock, 2019).

Limitations

The current study is not without limitations, particularly regarding spuriousness and omitted variable bias. While known exonerations provide a reliable and valid measurement of wrongful convictions, the data do not provide enough information to allow researchers to control for certain demographic characteristics such as the socioeconomic status of exonerees and victim race/ethnicity. As a result, researchers cannot assess the effects of the victim's race or the defendant's socioeconomic status using NRE data. Further, the data do not allow comparisons across case outcomes such as dismissals, acquittals, and convictions based on factual guilt (Hail-Jares et al., 2020). These limitations restrict researchers' ability to quantify the influence of certain factors on case outcomes. Finally, exoneration data only represent known wrongful convictions (Hail-Jares et al., 2020; Leo, 2017; Vick et al., 2021). Therefore, findings cannot be generalized to innocent individuals who have been convicted but not exonerated (Vick et al., 2021). Research on wrongful convictions benefits from efforts to expand upon Loeffler and colleagues' (2019) findings, which demonstrate the potential of self-report data to uncover the dark figure of wrongful convictions.

Implications

Research on time lost due to wrongful conviction promotes policy and practical implications addressing compensation, reentry, accountability, and prevention. Regarding compensation, there are several states across the U.S that have not adopted compensation

statutes. Federal law provides $50,000 per year of wrongful incarceration as compensation for claimants who are able to establish their innocence by a preponderance of evidence (Innocence Project, 2022). Additionally, 38 states and the District of Columbia have adopted statutes providing compensation for wrongful conviction (NRE, 2022). Of these, 25 states and D.C. provide at least $50,000 per year for eligible claimants (Innocence Project, 2022). The remaining 12 states do not provide exonerees with a means of obtaining compensation. The results of the current study may be used to support the development of new compensation laws in these states, as well as improvements for existing laws. Turning to prevention, the current study provides empirical evidence to support policies and practices that seek to prevent wrongful convictions from occurring or offer solutions to wrongful convictions when they do occur. In general, prevention efforts should seek to minimize the likelihood of wrongful convictions by promoting evidence-based practices in police investigations, forensic analysis, prosecutorial decision-making, and court procedures.

It is vital to emphasize research and policy initiatives that seek to prevent wrongful convictions. It is also necessary to acknowledge that human beings operate the criminal justice system and are subject to human error. Thus, research and reform efforts must strive to ensure that any criminal justice professionals whose actions or biases contributed to a wrongful conviction are held accountable. These efforts may benefit by taking cues from research on the concept of "never events," which focuses on creating a safer system and reducing the frequency of preventable errors (Institute of Medicine, 2000; Olivarius-McAllister et al., 2021; Zaslow et al., 2022). Further, researchers and policymakers need to continue to work toward the establishment of fair compensation standards for individuals who have been wrongfully incarcerated. Finally, exonerees would benefit from reentry resources that cater to the unique

experiences and consequences associated with being wrongfully accused, convicted, and incarcerated.

As previously discussed, wrongful convictions carry undeniably egregious consequences (Gross & O'Brien, 2008; Sangero, 2019). These errors occur due to several decisions and factors throughout the criminal justice process (Berube et al., 2022; Jackson et al., 2022). While it is rare for these decisions to be made in a deliberate attempt to convict and punish an innocent individual, the criminal justice professionals responsible for making the decisions that ultimately lead to wrongful conviction must be held accountable. The lack of malicious intention does not absolve the system or those who operate it from the duty to take meaningful measures to prevent these accidents and respond appropriately to any that occur.

CHAPTER VI

CONCLUSION

In closing, the current study adds to the existing literature on wrongful convictions by offering additional insight into the factors that influence the amount of time lost by exonerees. While it is important to determine the extent to which certain individual and case characteristics influence the likelihood of wrongful convictions, it is also important to understand the impact of these factors on the consequences associated with these outcomes. The adverse effects of wrongful conviction on the innocent individual may be exacerbated by longer periods of false incarceration. Therefore, the amount of time lost due to wrongful convictions can aid in conceptualizing the cost of wrongful convictions and inform policy initiatives seeking to reduce such costs.

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VITA

Ellee Jackson was born in Fort Lauderdale, Florida to parents Sharron and Lee Jackson. She is the youngest of three children, with an older sister named Helen and an older brother named Cutter. Following her graduation from Girls' Preparatory School in 2018, Ellee attended the University of Tennessee at Chattanooga and received her Bachelor of Science in Criminal Justice in the Spring of 2022. Ellee continued her education, enrolling in the Criminal Justice Master's program at UTC and working as a graduate research and teaching assistant. Her coursework and assistantship allowed her to participate in research, assist in conducting online and face-to-face courses, and instruct an Introduction to Criminal Justice course. Ellee has accepted a Graduate Merit Award from the Justice, Law, and Criminology PhD program. She will begin working toward her PhD in Fall 2024 at American University in Washington, DC.