

## ABSTRACT

TUTTLE, JAMES ARTHUR. Explaining Longitudinal and Cross-National Variation in Homicide: Towards a Theory of Institutional Legitimacy. (Under the direction of Patricia L. McCall and Steve McDonald).

Macro-criminological theory has lagged behind its micro-level counterpart, leaving criminologists ill-prepared to explain variation in crime rates across nations and over time. Despite a major step forward in 'institutional anomie theory,' significant questions remain about its central premise, empirical falsifiability and theoretical scope. To address limitations in macro-criminology theory, the current study builds on LaFree's (1998) *Losing Legitimacy* hypothesis, which stresses institutional control of crime. To extend this framework, the causal mechanisms connecting institutional legitimacy and reductions in violent crime are outlined, including (1) a reduction in conflict, (2) peaceful resolution of conflict and (3) the strengthening of existing social control mechanisms. Two cross-national studies assessing the empirical validity of this 'institutional legitimacy theory' (in Chapters 3 and 4) provide support for its tenets, as homicide rates are inversely associated with political, economic, familial and religious institutional legitimacy. Chapter 5 addresses declining rates of homicide across Western democracies, noting that declines in political legitimacy are associated with increasingly repressive forms of social control, including increasing rates of incarceration. Overall, there is evidence that institutional legitimacy assists in reducing rates of homicide. However, waning political legitimacy may also contribute to increasingly repressive forms of social control imposed by the state, partially counter-balancing the criminogenic impact of waning political legitimacy. Further research is needed to clarify the theoretical mechanisms outlined in this study.

© Copyright 2018 by James Arthur Tuttle

All Rights Reserved

Explaining Longitudinal and Cross-National Variation in Homicide: Towards a Theory of  
Institutional Legitimacy

by  
James Arthur Tuttle

A dissertation submitted to the Graduate Faculty of  
North Carolina State University  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy

Sociology

Raleigh, North Carolina

2018

APPROVED BY:

---

Patricia L. McCall  
Committee Co-Chair

---

Steve McDonald  
Committee Co-Chair

---

Charles R. Tittle

---

Virginia M. Aldigé

## **DEDICATION**

To Jen, for her suffering.

## BIOGRAPHY

James Tuttle was raised in rural Southeast Nebraska, in and near the village of Lewiston. He attended McPherson College, graduating *summa cum laude* with a degree in psychology and sociology. After finishing his bachelor's degree, James went on to study at North Carolina State University, earning his master's degree in sociology in 2013. His current research interests include the development of macro-criminological theory, explaining cross-national variation in violent crime and issues of social control. James will be joining the faculty at the University of Saint Francis in the Fall of 2018.

## ACKNOWLEDGMENTS

There are many people who made this dissertation possible. My wife Jen has been supportive throughout my college career. She has encouraged me when I had doubts, been flexible in her career plans to support my own and accompanied me on several trips to less-than-exciting professional conferences. She sacrificed to accommodate my initial move to complete my graduate education and our upcoming relocation for my new position. My mother and father have also been very supportive, despite my move across the country and calling home (too) infrequently.

Patty McCall has been instrumental in my completion of this dissertation. Even through personal tragedy and retirement, Patty was always available to discuss anything, from informal expectations of the profession to estimating advanced statistical models. I greatly appreciate all the time and effort she has devoted to guiding me in my research, job search and overall professional development. It is an understatement to say she went “above and beyond” her role as advisor and mentor. It is hard to imagine my education at NC State without her.

I would also like to thank the other members of my committee, Steve McDonald, Charles Tittle and Virginia Aldigé. Not only have all my committee members provided valuable feedback on the dissertation but have also written letters of recommendations on my behalf for my multi-year job search. I benefited from Dr. McDonald’s methodological acumen, as he assisted me in navigating the unique challenges of imputing and analyzing longitudinal data. I appreciate Dr. Tittle’s insights on theoretical issues on this project, pushing me to carefully consider the accuracy of theoretical mechanisms I initially proposed. Dr. Aldigé also shaped this project considerably, highlighting logical inconsistencies in my

work and cautioning about the quality of cross-national data. I appreciate the time and effort each member of my committee has devoted to this dissertation and in the assistance in my professional development and recent job search. Thank you!

## TABLE OF CONTENTS

LIST OF TABLES .....	ix
LIST OF FIGURES .....	x
CHAPTER 1. INTRODUCTION .....	1
1.1 Prologue: The Necessity of Macro-Criminological Theory.....	1
1.2 Focusing on “The Big Picture” .....	5
1.3 Institutional Anomie Theory: Promise and Limitations.....	8
1.4 Towards a Theory of Institutional Legitimacy.....	12
CHAPTER 2. TOWARDS AN INTEGRATED THEORY OF INSTITUTIONAL LEGITIMACY .....	15
2.1 Introduction .....	15
2.2 LaFree’s (1998) <i>Losing Legitimacy</i> .....	16
2.3 Clarification of Theoretical Mechanisms .....	18
Mechanism #1: Institutional Legitimacy and a Reduction of Conflict .....	20
<i>Material Conflict</i> .....	20
<i>Status Conflict</i> .....	21
<i>Moral Conflict</i> .....	23
Mechanism #2: Conflict Resolution.....	25
Mechanism #3: Strengthening Community Control Mechanisms .....	26
2.4 Crises in Institutional Legitimacy .....	29
Political Legitimacy and State Repression .....	30
The Efficacy of State Repression .....	33
2.5 Summary .....	37
CHAPTER 3. A CROSS-NATIONAL TEST OF INSTITUTIONAL LEGITIMACY THEORY ACROSS 108 NATIONS, CIRCA 2012.....	39
3.1 Introduction .....	39
3.2 Literature Review .....	41
Murder in the Shadows: The Shadow Economy .....	43
3.3 Hypothesis .....	44
3.4 Data and Methods.....	45
Dependent Variable .....	46



Independent Variables .....	46
Control Variables.....	49
Preliminary Analysis .....	50
3.5 Results .....	51
Supplemental Analyses .....	53
3.6 Discussion and Conclusions .....	54
<b>CHAPTER 4. A CROSS-NATIONAL ANALYSIS OF LAFREE'S <i>LOSING</i></b>	
<b><i>LEGITIMACY</i> THESIS, 1962-2005.....</b>	<b>59</b>
4.1 Introduction .....	59
4.2 Crime Trends in Relation to Institutional Legitimacy in the United States .....	60
4.3 Protest, Political Legitimacy and Violent Crime.....	63
4.4 Previous Research .....	67
4.5 Hypothesis .....	68
4.6 Data and Methods.....	69
Sample .....	69
Dependent Variable .....	70
Independent Variables .....	71
Control Variables.....	74
Preliminary Analyses.....	75
4.7 Results .....	78
Supplemental Analyses .....	80
4.8 Discussion and Conclusion .....	81
<b>CHAPTER 5. THE DECLINE IN HOMICIDE RATES FROM 1993 TO 2005:</b>	
<b>EXAMINING THE ROLE OF STATE REPRESSION.....</b>	<b>88</b>
5.1 Introduction .....	88
5.2 The Rise of Crime and Incarceration .....	90
5.3 The Incarceration Binge and the Great Crime Decline .....	94
5.4 Previous Cross-National Research .....	97
5.5 The Current Study .....	100
5.6 Data and Methods.....	100
Sample .....	100
Data.....	101

Preliminary Analyses.....	105
5.7 Results .....	107
Specificity Analyses .....	108
5.8 Discussion and Conclusion .....	110
CHAPTER 6. CONCLUSIONS .....	115
6.1 Summary of Findings .....	115
6.2 Limitations and Directions for Future Research .....	117
6.3 Epilogue .....	120
REFERENCES .....	123
APPENDICES .....	171
Appendix A .....	172
Appendix B .....	173

## LIST OF TABLES

Table 1: Descriptive Statistics of 108 Nations, Circa 2012 .....	152
Table 2: Bivariate Correlations of 108 Nations, Circa 2012 .....	153
Table 3: Ordinary Least Squares Regression Coefficients Estimating Institutional Legitimacy on the Natural Homicide Rates of 108 Nations, Circa 2012 .....	154
Table 4: Supplemental Analyses: Regression Coefficients Estimating Institutional Legitimacy on the Natural Logarithm of Homicide Rates, Circa 2012 .....	155
Table 5: Descriptive Statistics 22 OECD Nations, 1962-2005 .....	156
Table 6: Bivariate Correlations of 22 OECD Nations, 1962-2005 .....	157
Table 7: Pooled Ordinary Least Squares Regression Fixed Effects Coefficients on Homicide Rates of 22 OECD Nations, 1962-2005 .....	158
Table 8: Pooled Ordinary Least Squares Regression Fixed-Effects Coefficients on Homicide Rates of 20 OECD Nations During Three Periods, 1962-2005 .....	159
Table 9: Descriptive Statistics of 27 OECD Nations, 1993-2005 .....	160
Table 10: Bivariate Correlations of 27 OECD Nations, 1993-2005 .....	161
Table 11: Pooled Ordinary Least Squares Regression Fixed-Effects Coefficients on the Natural Logarithm of Homicide Rates of 27 OECD Nations 1993-2005 .....	163

**LIST OF FIGURES**

Figure 1: Theoretical Mechanisms Connecting Institutional Legitimacy to Reductions in Violent Crime .....	164
Figure 2: Relationship between Political Legitimacy, State Repression and Violent Crime.....	165
Figure 3: Temporal Relationship between Waning Political Legitimacy, Rates of Violent Crime and State Repression.....	166
Figure 4: Full Theoretical Model of Institutional Legitimacy Theory .....	167
Figure 5: Homicide Rates across 22 OECD Nations, 1962-2005 .....	168
Figure 6: Protests per 1,000,000 across 22 OECD Nations, 1962-2005 .....	169
Figure 7: Percent Increase in Repression Index Across 27 OECD Nations, 1992-2004.....	170

## CHAPTER 1. INTRODUCTION

### 1.1 Prologue: The Necessity of Macro-Criminological Theory

Although the dominant theories in criminology are designed to explain individual variation in criminality, public interest is largely fixated on rates of crime within a population (Rosenfeld 2011). In popular culture, stories of serial killers, gruesome crimes and courtroom dramas are used as fodder for entertainment. However, our real-life concerns about crime are almost exclusively with the amount of criminal predation within a geographical area.

Prospective home buyers seek local crime statistics before purchasing property to assure they are moving into a “safe” neighborhood. Police carefully examine changes in offending rates within the communities they serve to determine the efficacy of strategic interventions.

Politicians use “tough on crime” platforms to entice voters with the promise of safety and social order within their neighborhood, state or country. Stories of particularly gruesome or novel crimes may make for good entertainment, but information pertaining to aggregate rates of crime shapes our lives in a much more profound way.

The importance of understanding variation in aggregate-level crime rates necessitates further development of macro-criminological theory. The lack of effective macro-criminological theory became painfully apparent during the second half of the 20<sup>th</sup> century. In *Thinking About Crime*, James Q. Wilson (1975) highlights the apparent contradiction between the prosperity of the United States during the 1960s and the rapidly increasing rate of violence and theft. Wilson (1975) notes that conventional wisdom and empirical evidence link poverty with higher rates of crime and economic prosperity with lower rates of crime. Given the rate of economic growth in the United States during the 1960s and anti-poverty programs initiated by President Lyndon Johnson, many experts expected crime rates to

decline (Cohen and Felson 1979; Wilson 1975). However, the opposite occurred during the 1960s; violent crime increased at an unprecedented rate. In the span of less than 20 years between the early 1960s and 1980, the homicide rate in the United States doubled (Zahn and McCall 1999), while rates of robbery, burglary, aggravated assault and rape kept pace (Cohen and Felson 1979).

Not only did criminologists fail to anticipate the sudden surge in crime that plagued the nation during the 1960s and 1970s but were surprised again by the sudden crime decline during the 1990s. In fact, during the early to mid-1990s some prominent social scientists, including Wilson (1995), predicted a crime “boom” amidst a crime “bust” (Dilulio 1995; Fox 1996; Wilson 1995). Dilulio (1995) and his associates (Bennett, Dilulio and Walters 1996) went so far as to warn the American public of a burgeoning group of adolescent “super-predators.” These youths purportedly lacked remorse, impulse control and mercy, wreaking havoc on the public through increasingly violent and depraved acts. Fortunately, the era of super-predators and increasing rates of violent crime did not materialize in the 1990s. Instead, rates of all street crimes declined throughout the 1990s, almost as rapidly as they had increased during the 1960s and early 1970s (Zimring 2007).

Although it is inaccurate to claim that social scientists were completely in the dark concerning fluctuating crime rates, their track-record is decidedly mixed. The use of demographic data documenting the relative proportion of the population aged in peak offending years (ages 14 to 24) produced several fairly accurate forecasts of the overall change in the rate of crime post-1980 (Blumstein, Cohen and Miller 1980; Land and Cohen 1987; Land and McCall 2001; Steffensmeier and Harer 1987). However, the success of these predictions is eclipsed by the aforementioned panicked forecast of increasing rates of crime

in the 1990s that drew inferences using similar demographic data (Bennett et al. 1996; Fox 1996). Even the “successful” demographic predictions failed to anticipate the abrupt rise of adolescent and young adult homicide spanning from the mid-1980s to the mid-1990s (Blumstein and Rosenfeld 1998; Cook and Laub 1998, 2002). Accurate prediction of long term trends in violent crime still eludes modern social scientists, as continuity bias and the complexity of large social systems make predictions spanning more than a few years difficult at best and wildly inaccurate at worst (Land and McCall 2001).

However, even if social scientists cannot predict long-term trends in homicide rates, mere post-hoc explanation of crime trends continues to elude criminologists. No definitive explanation of the rise and fall of crime during the second half of the 20<sup>th</sup> century exists, leading to an intellectual void filled by partial, often atheoretical accounts. No fewer than a dozen distinct explanations were put forth by scholars of the so-called great crime decline of the 1990s. These explanations include an aging population (Fox 2006; Fox and Piquero 2003), innovative police strategies (Kelling and Bratton 1998; Zimring 2007), increases in the number of police (Levitt 2004; Zimring 2007), increased use of incarceration (Levitt 1996, 2004; Spelman 2006), the rise and fall of new users in crack-cocaine markets (Blumstein and Rosenfeld 1998; Cook and Laub 1998; Fagan and Chin 1990; Johnson, Golub and Dunlap 2006), the legalization of abortion in 1973 (Donohue and Levitt 2001; Levitt 2004), the increase and decrease of environmental lead exposure in children (Nevin 2000, 2007), improving economic conditions throughout the 1990s (McCall, Parker and McDonald 2008; Rosenfeld and Messner 2009), the decline in firearm use in crack cocaine markets (Blumstein and Rosenfeld 1998; Cook and Laub 1998; Wintemute 2006), an increase in firearm ownership (Lott 2013), a “decivilizing” process in the 1960s followed by

a subsequent continuation of the “civilizing” process in the 1990s (Pinker 2011) and a routine activities theory explanation of “target-hardening” and a reduction of criminal opportunities for crime (Cohen and Felson 1979; Van Dijk, Tseloni and Farrell 2012). Although attempts have been made to adjudicate between these disparate perspectives (Baumer 2008; LaFree 1999a; Levitt 2004), we are left without a definitive explanation of crime trends during the second half of the 20<sup>th</sup> century.

This cacophony of partial, often atheoretical arguments illustrates two major limitations of modern criminological theory: (1) the relative under-emphasis on developing macro-theoretical perspectives designed to explain crime rates within a population (Rosenfeld 2011) and (2) relatively few macro-criminological perspectives offering propositions predicting why crime rates vary over time (LaFree 1999a). A theory of social systems is beyond the scope of many of our current theories of crime, as the “core” criminological theories implicate social-psychological processes influencing variation in individual criminality (Cullen, Wright and Blevins 2006), often focusing on minor offenses committed by juveniles rather than violent crimes (Cullen 2011). With the notable exception of social disorganization theory and its variants (Sampson 2012; Sampson and Groves 1989; Shaw and McKay 1969), the dominant theories in criminology are best suited to explain why one individual commits crime while others refrain. Yet, the link between individual differences in antisocial behavior and aggregate crime rates is remains evasive (Rosenfeld 2011).



## 1.2 Focusing on “The Big Picture”

There are significant challenges facing theorists attempting to examine large scale variation in violent crime. Adequate data are often lacking, especially (reliable) data on rates of violent crime over time (LaFree 1999a). Even when scholars manage to piece together a time series for more than a few decades, only one country (Gurr 1981; Roth 2009) or a few wealthy nations (Eisner 2001, 2008) have available homicide data. Any conclusions based on these data must be applied with extreme caution outside of Western Europe and the United States. Additionally, cross-national research conducted during the past few decades is largely limited to cross-sectional design and variation in (mostly) wealthy Western democracies (LaFree 1999a; Nivette 2011). Despite the considerable challenges posed by a lack of macro-historical data, there are three distinct grand perspectives that provide interpretations of observed trends in homicide rates: the “civilizing,” conflict and modernization perspectives (LaFree and Tseloni 2006).

The most far-ranging perspective, referred to as the “civilizing” perspective, is associated with the theoretical work of Hobbes (1999) and Elias (2000). Elias (2000) tracked changing sensibilities concerning public manners during the Renaissance and Enlightenment in Western Europe, arguing that increasing rates of self-control and a monopoly of legitimate violence held by the state contributed to lower rates of violence (see also: Hobbes 1999). Elias (2000) presents no empirical evidence to back his claims, but subsequent scholars note that the historical decline in homicide rates fits a general pattern of decline during the 17<sup>th</sup>, 18<sup>th</sup> and 19<sup>th</sup> centuries (Eisner 2001, 2008; Gurr 1981; Pinker 2011). Additionally, backed by a modern theory of self-control and criminality (Gottfredson and Hirschi 1990; Pratt and Cullen 2000), this perspective has considerable appeal.

Yet, the civilizing perspective is less able to explain reversals in homicide trends (LaFree and Tseloni 2006). Those defending the civilizing perspective suggest a “decivilizing process” occurs during periods of crime rate increases (Pinker 2011). However, this defense seems at odds with the slow and gradual process described in Elias’ (2000) theory, especially when focusing on a stable personal characteristic such as self-control (Gottfredson and Hirschi 1990). Additionally, some have challenged this perspective on empirical grounds, as medical improvements may have contributed to a reduction of death by assault (Harris, Thomas, Fischer and Hirsch 2002). Instead of marking a decline in interpersonal violence, the apparent historical decline in homicide rates may be due to fewer people dying as a result of injuries suffered during an assault because victims have more ready access to effective emergency medical treatment (Roth 2009).

In comparison with the civilizing perspective, the conflict perspective predicts the opposite temporal trend in homicide rates (LaFree and Tseloni 2006). Scholars have argued that the rise of capitalism has contributed to higher rates of crime over time (Bonger 1916; Quinney 1977). Bonger (1916) argues that capitalism has a criminogenic impact on the temperament and psychology of the population, reducing feelings of empathy towards others due to the push toward competition. Fostering selfishness and “de-moralization,” rates of all types of violent crime are hypothesized to increase in capitalist nations. While this perspective has received limited support in a recent cross-sectional analysis (Antonaccio and Tittle 2007), the trends in violent crime during the 20<sup>th</sup> century in capitalist nations do not indicate an uninterrupted increase in violent crime. In fact, most highly-developed capitalist nations experienced a remarkable decline in homicide rates over recent decades (LaFree and Tseloni 2006).

The modernization perspective, associated with the work of Durkheim (1947), argues that crime rates initially rise during times of societal transition, but decline again as new societal roles become fully institutionalized. Unlike the civilizing or conflict perspectives, the modernization perspective does not necessarily imply a sustained direction in violent crime. This perspective can be applied to multiple periods in time, not only describing the transition from traditional to modern society (Durkheim 1947), but also shifts in government organization (from autocracy to democracy) (LaFree and Tseloni 2006), economic relations (from communism to capitalism) (Kim and Pridemore 2005) and moral beliefs and values (LaFree 1998). Cross-sectional research has not been supportive of the modernization perspective (for a review, see LaFree 1999b), but modernization implies a process that occurs over time (LaFree and Drass 2002) rather than stable differences between nations measured in cross-sectional analysis. During the past 50 years, this perspective fits observed homicide trends quite well (LaFree and Tseloni 2006). Several wealthy Western democracies experienced both an increase and decrease in violent crime in the post-World War II period, marked by a sudden societal transition (Fukuyama 1999). Less developed nations also experienced spikes in homicide rates during the transition from autocracy to democracy (Chu and Tsalem 2013; LaFree and Tseloni 2006; Neumayer 2003).

Overall, the evidence supporting each perspective is somewhat incomplete or contradictory. The modernization perspective appears to more closely fit recent evidence than the other two grand perspectives (civilizing and conflict) (LaFree and Drass 2006). However, the predictions of these grand perspectives are somewhat vague and imprecise. For this reason, scholars have suggested limiting theoretical scope (Nivette 2014), more closely resembling theories of the “middle range” (Merton 1967). Therefore, most scholars studying

cross-national variation in crime have turned their attention toward significant, but more modest theoretical endeavors, such as Messner and Rosenfeld's (1994) "institutional anomie theory."

### **1.3 Institutional Anomie Theory: Promise and Limitations**

Messner and Rosenfeld's (1994) institutional anomie theory (IAT) is arguably the most prominent cross-national theory of crime. IAT implicitly draws on both the critical and modernization theoretical paradigms outlined above. By using the concept of "anomie," a term Merton (1938) borrows from Durkheim (1951), Messner and Rosenfeld (1994) examine the role of institutional norms in restraining criminal behavior. But, Messner and Rosenfeld (1994) also draw on critical perspectives critiquing capitalism's impact on crime (i.e. Bonger 1916), by arguing that the capitalist-inspired goals of the "American Dream" motivate individuals to commit crime.

Messner and Rosenfeld (1994) draw on Merton's (1938) use of the term "anomie," describing a mismatch between the cultural goals of the American Dream and the structural capacity to meet these economic demands. Merton (1938) claims that American culture pressures individuals to strive for material wealth while failing to provide the legitimate opportunities (or "means") sufficient for all citizens to accomplish this goal. Messner and Rosenfeld (1994) retain the basic ideas central to Merton's (1938) theory but argue that Merton (1938) erred in not including a more "comprehensive theory of institutional structure and functioning" (Messner and Rosenfeld 1994: 63).

To rectify this lack of attention to institutional structure, Messner and Rosenfeld (1994) contend that the American Dream simultaneously provides the impetus for

economically motivated crime and the cultural basis for an imbalance between economic and noneconomic institutions. The authors argue that “the dominant ethos of the American Dream stimulates wants and desires that are difficult to satisfy within the confines of legally permissible behavior while at the same time promoting weak normative environment (anomie)” (Messner and Rosenfeld 1994: 84). This over-emphasis on economic achievement causes a devaluation of noneconomic institutions (polity, education and family), forcing these institutions to accommodate to economic requirements and norms. For example, when gaining wealth takes precedence over the family, child supervision and socialization may suffer while both parents spend more time working to earn higher incomes. The imbalance between economic and noneconomic institutions weakens institutional engagement and institutional social control mechanisms, leading to higher rates of crime.

Conversely, if polities promote institutional balance through “decommodification” (see Esping-Andersen 1990), citizens will have a stronger attachment and commitment to noneconomic institutions. By protecting individuals from the “vicissitudes” of the capitalist market, polities promote non-economic institutional strength by providing social welfare benefits (Messner and Rosenfeld 1997). Overall, Messner and Rosenfeld (1994) delineate a complex theory of cultural, structural and institutional inter-relationships which enjoys a fair amount of support in empirical tests (Baumer and Gustafson 2007; Bjerregaard and Cochran 2008; Chamlin and Cochran 1995; Cochran and Bjerregaard 2012; Hughes, Schaible and Gibbs 2015; Kim and Pridemore 2005; Maume and Lee 2003; McCall and Brauer 2014; Messner and Rosenfeld 1997, 2006; Nivette 2011; Pratt and Cullen 2005; Pratt and Godsey 2003; Savolainen 2000).

Juxtaposed to the sophistication and empirical support of IAT are significant doubts concerning its central premise, empirical falsifiability and applicability. First, the basic premise that underlies both the work of Merton (1938) and Messner and Rosenfeld (1994) is that United States is an aberration in terms of its cultural values, namely, the insatiable economic desires stimulated by the American Dream. This premise is contradicted by World Values Survey data, as several national cultures appear to stress monetary gain more than the United States (Chamlin and Cochran 2007; Jensen 2002). If American values are not excessively materialistic, IAT offers little explanation as to what motivates Americans to commit excessive rates of violent and serious crime.

Second, utilizing this questionable cultural assumption about the American Dream, Messner and Rosenfeld (1994) argue that the values of individualism, achievement and materialism create an imbalance between economic and noneconomic institutions, weakening institutional control. Messner and Rosenfeld (1997) suggest that when there is a balance of power between the polity and the economy, crime rates decline as citizens are less prone to potential hardships (i.e. unemployment, declines in income, etc.) of capitalist markets. Although indirect evidence can assist in addressing this claim (i.e. Pratt and Godsey 2003; McCall and Brauer 2014), the concept of “institutional imbalance” is difficult to subject to a direct empirical examination (Chamlin and Cochran 2007), threatening its falsifiability.

Third, because IAT is designed to explain why the United States differs from other advanced societies, it holds less explanatory power in less-developed and developing nations (Chamlin and Cochran 2007; Dolliver 2015; Messner and Rosenfeld 1994; Messner, Thome and Rosenfeld 2008). While the logic of the theory can be applied to both sub-national aggregates (Baumer and Gustafson 2007; Chamlin and Cochran 1995; Kim and Pridemore

2005; Maume and Lee 2003) and (hypothetically) to all nations (Chamlin and Cochran 2007), the focus of the theory is to explain the relatively minor difference in homicide rates between the United States (4.7 homicides per 100,000) and Western Europe (~1.0 homicide per 100,000) rather of the chasm between Honduras (90 homicides per 100,000) and Japan (0.3 homicides per 100,000) (UNODC 2013). In some respects, IAT begins with the assumption that relatively strong institutions are weakened by excessive emphasis on economic demands. However, if institutions are already weak, the relative balance between them may be irrelevant to controlling crime. This point is best illustrated by recent events in Venezuela, where efforts toward de-commodification (Epsing-Andersen 1990) through increased social expenditures and reductions in poverty and inequality have corresponded with increases in homicide, largely attributed to chronic political instability and institutional illegitimacy (Tremaria 2016).

Finally, pertinent to the previous discussion on the fluctuation of crime rates over time, IAT lacks the ability to explain sudden spikes or declines in crime. It is implausible that American cultural dimensions change quickly enough to explain the rapid increase of crime rates in the 1960s and early 1970s and the subsequent decline in the 1990s. In fact, the shifts in crime rates over the last few decades seem to dispute the central ideas of IAT. Social expenditures increased (Tanzi and Schuknecht 1997) and economic conditions improved throughout the 1960s and early 1970s during a rise in violent crime (Wilson 1975), which contradicts the idea that economic strain was the cause of rapidly rising rates of crime (LaFree 1998). Subsequently, during crime decline of the 1990s, cultural shifts toward individualism and privatization of the wealth suggest an exacerbation of institutional anomie. The progression of “neo-liberalism,” hypothesized to emphasize de-regulation of the

economy, is traced to the period from the mid-to-late 1970s to the present day (Centeno and Cohen 2012). Neo-liberal expansion during the 1980s and 1990s coincided with one of the largest and most abrupt declines in homicide in recent American history. Considering these trends, Messner and Rosenfeld (1994) are silent as to what would cause crime rates to fluctuate dramatically over time. The only potential explanation of temporal variation in crime consistent with the IAT framework is through fluctuation in social expenditures (McCall and Brauer 2014).

#### **1.4 Towards a Theory of Institutional Legitimacy**

Because of the limitations of IAT (Messner and Rosenfeld 1994), we must turn to a related, but less prominent, macro-criminological theory placing a similar emphasis on the role of social institutions in controlling crime, which I refer to as “institutional legitimacy theory.” Institutional legitimacy theory retains the emphasis on institutional control of crime but draws on social control theoretical assumptions (see Kornhauser 1978). While there is overlap between evidence supportive of both IAT and institutional legitimacy theory (Bjerregaard and Cochran 2008; Chamlin and Cochran 1995; Cochran and Bjerregaard 2012), institutional legitimacy theory provides several new avenues for inquiry. Unlike IAT, institutional legitimacy theory provides: (1) a plausible explanation of dramatic temporal variation in rates of crime, (2) avenues for an investigation of economic legitimacy (previously excluded from research on IAT due to assumptions concerning the cause of institutional imbalance), (3) the ability of explaining variation in crime across all nations (a greater theoretical scope) and (4) applications to micro-level perceptions of procedural justice within (Kirk and Matsuda 2011; Kirk and Papachristos 2011; Tyler 2011).



To further develop a burgeoning institutional legitimacy theory (ILT), over the next four chapters I outline and test hypotheses derived from ILT. In Chapter 2, the foundation of ILT is explicated. I draw upon the work of LaFree (1998) as a point of departure, incorporating related observations from other theorists (Black 1983; Bottoms and Tankebe 2012; Gould 2003; Nivette 2014; Tyler 2006). By clarifying theoretical mechanisms and elaborating the theory using the concept of repression/coercion (Colvin, Cullen and Vander Ven 2002) and the punitive turn in criminal justice administration (Garland 2001; Pratt 2007), this theoretical account provides new avenues for further macro-theoretical development and empirical research.

In Chapter 3, hypotheses generated from ILT are outlined and tested. Using a large cross-sectional sample of 108 nations, this analysis expands upon the typical small samples utilized in cross-national research of homicide (Nivette 2011). Examining the role of four institutional domains (polity, economy, family and religion), this study demonstrates that institutional legitimacy can effectively reduce homicide rates across a diverse set of nations. Included in this analysis is a novel measure of the informal economy, representing (the waning of) economic institutional legitimacy. Consistent with theory and research by Black (1983) and Rosenfeld (2014), larger “shadow economies,” where parties exchange goods and services outside of the official economy, are associated with higher rates of homicide.

Chapter 4 contains a longitudinal test of ILT, focusing specifically on the claims of LaFree (1998) in *Losing Legitimacy*. Extending LaFree’s (1998) argument about the sudden increase in rates of street crime in the United States to other highly-developed nations, the role of political protest (an indicator of waning political legitimacy), increasing rates of divorce (waning legitimacy of the patriarchal family) and inflation and income inequality

(waning economic legitimacy) are examined in a sample of 22 nations over more than four decades – from 1962 through 2005. Despite the plausibility of LaFree's (1998) claims, this study represents one of the few longitudinal, cross-national examinations of the "losing legitimacy" thesis (Messner, Pearson-Nelson, Rafflovich and Miner 2011) and the first to assess temporal crises in political legitimacy across nations in relation to homicide rates.

Chapter 5 is a supplemental analysis of Chapter 4's analysis of the period between 1993 and 2005, a period when homicide rates fell precipitously across Western democracies. This decline in homicide rates was not due to increasing institutional legitimacy, as political legitimacy fell during this period (see Dalton 2005). Instead, increasingly repressive forms of the administration of justice arguably contributed to a decline in homicide rates, often taking the form of rising rates of incarceration. Consistent with the theoretical statements of Garland (2001) and Pratt (2007), incarceration rates increased during this period despite declining rates of crime. This study demonstrates that the punitive turn in the administration of justice contributed to a decline in homicide rates across the 27 Organization of Economic Co-operation and Development (OECD) nations during this period.

Finally, in Chapter 6, the empirical support for ILT is assessed in relation to the findings of these studies. Overall, ILT appears to assist in the explanation of both large-scale variation in violent crime across nations and shifts in violent crime rates over time. Implications for future research and theoretical development are outlined in this final chapter.

## CHAPTER 2. TOWARDS AN INTEGRATED THEORY OF INSTITUTIONAL LEGITIMACY

### 2.1 Introduction

This chapter presents an integrated theory of institutional legitimacy, labeled “institutional legitimacy theory.” The framework utilizes LaFree’s (1998) insights as a point of departure. LaFree (1998) outlines some initial connections between institutional legitimacy and social control, but subsequent theoretical developments and research provide additional insights (e.g. Nivette 2014; Sampson and Bartusch 1998; Roth 2009). This chapter clarifies the mechanisms connecting institutional legitimacy and the control of violent crime. After clarifying these theoretical mechanisms, the inter-relationship between political legitimacy and state repression is explored, linking losses in political legitimacy to both an increase in violent crime (LaFree 1998; Nivette 2014; Roth 2009) and increases in repressive forms of social control (Garland 2001; Pratt 2007). The central claim of institutional legitimacy theory (ILT) is that institutional legitimacy reduces violent crime, but when voluntary cooperation with social norms and laws cannot be achieved, the state will adjust by using more repressive forms of social control. These repressive forms of social control can contribute to temporal declines in crime, but also may undermine efforts at gaining political legitimacy, especially among alienated or marginalized groups.

This chapter unfolds in three distinct sections. First, LaFree’s (1998) arguments are briefly outlined, providing insight into the initial claims of ILT. Second, the theoretical mechanisms connecting institutional legitimacy with lower rates of violent crime are discussed, anchoring ILT in Black’s (1983) conceptualization of unilateral violence as a form of conflict resolution. Finally, state repression is integrated into ILT, drawing on accounts of

the recent punitive turn in the administration of justice across Western democracies (Garland 2001; Pratt 2007). Overall the rise in violent crime in the 1960s and 1970s in wealthy democracies is attributed to waning institutional legitimacy, which culminated in more repressive crime control measures in the 1980s and 1990s, providing the impetus for the decline in violent crime wealthy democracies. The next section provides an overview of LaFree's (1998) initial observations connecting declines in institutional legitimacy to rising rates of crime in the United States.

## **2.2 LaFree's (1998) *Losing Legitimacy***

In an attempt to explain the dramatic patterns in street crime in the United States during the post-World War II period, LaFree (1998) highlights the importance of institutional legitimacy. After more than a decade of apparent tranquility during the 1950s, rates of both violent and property crime rose suddenly during the 1960s and 1970s, peaking around 1980 (Cohen and Felson 1979; Zahn and McCall 1999). Beginning with political institutions, LaFree (1998) notes that trust in government began to decline precipitously beginning in the early 1960s. Marred by civil unrest and a string of political scandals, citizens began to withdraw trust and support from political institutions. Additionally, economic institutions began to lose legitimacy as well, as rates of income inequality and inflation in consumer prices increased during this period (1960s through 1970s). As the official economy seemed less fair and less able to fulfill people's needs, LaFree (1998) hypothesized that people were more willing to turn to criminal activities to support themselves. Finally, noting rising rates of divorce in the 1970s, LaFree (1998) argues that the patriarchal family lost legitimacy as women (and some men) began to question the unequal nature of gender relations within the

family and American society. The confluence of the waning political, economic and familial legitimacy contributed to three-decades of rising or elevated rates of street crime (LaFree 1998).

LaFree (1998) offers a few insights linking institutional legitimacy to lower rates of crime. Drawing on Berger (1963), LaFree (1998) argues that institutions serve as the “grooves” that channel human behavior; as the grooves widen when institutional legitimacy wanes, people are more prone to deviant behavior. Referring specifically to the three aforementioned institutions (polity, economy and family), each institutional domain serves a specific purpose in controlling crime. Political institutions, when perceived to be fair and just, motivate people to follow the rules (see also: Tyler 2006). Economic institutions provide necessary resources to limit criminal motivation and stakes in conformity (see also: Hirschi 1969). Finally, familial institutions provide social control of juveniles through supervision as well as socialization, imparting the desire to follow pre-established rules (LaFree 1988).

LaFree (1998) implicates the moral and normative dimensions of crime and crime control, as a sudden shift in norms and moral values corresponded with declines in institutional control. After enjoying a great deal of support during the 1950s, social institutions suffered a crisis of legitimacy as they “lost their moral validity” (LaFree, 1998: 95). As institutions were exposed as racist, sexist, corrupt and/or unjust, people withdrew their support and informal social control was undermined, leading to higher rates of crime. By highlighting racial disparities in offending rates, LaFree (1998) provides a convincing argument that populations that had the most reason to distrust mainstream political and economic institutions in the United States (African-Americans) experienced the greatest increase in criminal offending. Overall, reflecting the recent institutional “turn” in

criminology (Karstede 2010), LaFree (1998) argues that this crisis in institutional legitimacy explains the increase in violent crime during the 1960s and 1970s in the United States.

### 2.3 Clarification of Theoretical Mechanisms

While LaFree (1998) provides a compelling account of the increase in crime during the 1960s and 1970s, he is somewhat vague and inconsistent in outlining the theoretical assumptions and mechanisms of his framework. LaFree does not directly address the theoretical assumptions that undergird his institutional legitimacy theory of crime. Instead, he highlights the moral dimensions of institutions that compel individuals to comport their behavior according to normative expectations, including socialization of the next generation. While the moral dimensions of LaFree's framework are retained, the role of conflict (Black 1983; Nivette 2014), status (Gould 2003; Roth 2009) and community sanctions (Sampson 2012; Sampson and Bartusch 1998) are added to the theoretical framework. Below, I clarify mechanisms connecting institutional legitimacy to (lower) rates of violent crime.

To begin, we must first address the theoretical assumptions and micro-mechanisms connecting institutional legitimacy to reductions in violent crime.<sup>1</sup> ILT is conceptualized as a social control theory, because populations are assumed to be equally motivated toward crime (Kornhauser 1978). Effort is not necessary to explain why there is crime; social control theories attempt to explain why there is not *more* crime (Hirschi 1969). Anchoring ILT in Black's (1983) conceptualization of crime as unilateral social control, the central assumption of ILT is that *violent crime is the result of conflict*. Because conflict is ubiquitous in human societies, it requires no special explanation.

Instead, peaceful resolution of conflict is central to understanding the role of institutional legitimacy in reducing crime (Black 1983; Nivette 2014). Thus, societies that have established mechanisms to reduce and resolve conflict peaceably should have lower rates of violent crime. In general, both individual-level perspectives on compliance with the law (Tyler 2006) and macro-perspectives on institutional legitimacy (LaFree 1998) are consistent with the idea that *if people believe in the rules of society, they will follow them*. Agreement concerning the values, rules and norms will reduce conflict and provide agreed upon avenues for non-violent conflict resolution.

Beginning with this central claim, the remainder of this section is devoted to explicating specific theoretical mechanisms that connect institutional legitimacy to a reduction of conflict and the use of unilateral to resolve disputes and impose social control (Black 1983). In most cases, conflict does not culminate in violent crime, as there is a multitude of ways in which conflict can be managed without violence (Black 1990). Additionally, “moral filtering” may prevent individuals from even considering unilateral violence as a response to a grievance (see Wikström 2006; Brauer and Tittle 2017). However, there are several types of conflict that contribute to violent crime. Three primary mechanisms connect institutional legitimacy to a reduction in conflict and violent crime. First, a higher degree of institutional legitimacy reduces the occurrence of conflict associated with interpersonal violence. Second, when people have faith in political and criminal justice institutions, they are more likely to call upon the state to resolve disputes rather than resorting to violent vigilante justice. Finally, institutional legitimacy strengthens existing

---

<sup>1</sup> The definition of “violent crime,” the dependent variable of this theory, is defined as *the non-consensual use of force, infliction of bodily harm or imminent threat thereof*. The exception to this definition is the use of force by agents of the state, which is conceptualized as “state repression” for purposes of this theoretical model.

social control efforts within communities. The mechanisms connecting institutional legitimacy to a reduction in unilateral violence are depicted in Figure 1.

### **Mechanism #1: Institutional Legitimacy Reduces Conflict**

As a set of shared “rules, laws, norms, values, roles, and organizations that define and regulate human conduct” (LaFree 1998: 6), legitimate institutions assist in coordinating human activities and thereby, reducing conflict. By providing agreed upon norms, social roles and expectations, *legitimate institutions reduce conflict*. When there is a relatively high degree of agreement concerning the appropriate behavior of all parties involved in an interaction, there will be little motivation to use violence to impose unilateral social control (Black 1983). While conflict usually does not usually lead to violent crime (Black 1990), a reduction in certain types of conflict assists in reducing potentially deadly confrontations.

### *Material Conflict*

A major source of conflict originates from disputes over power or material possessions. Possibly the most consequential type of conflict (in relation to violence) is contested political power. The state is based on a monopoly of legitimate use of violence (Weber 2009). When political power is actively contested, violence may be directed at political actors and even result in open warfare, revolution, genocide and other acts of violence. Conflict over political power is evident in nations with an extraordinary amount of violence. In Central and South America, the contestation of political power is a central feature of high rates of violence within the region, as frequent coup d'états (Lehoucq and Perez-Linan 2014) and violence perpetrated by organized crime to gain political or economic



power (Arana 2005) plague the region. When the state fails to maintain legitimacy, contests over political power can directly or indirectly contribute to increased rates of violent death.

In addition to political power, an obvious source of violent crime is the desire for material gain, including money, food, shelter or other valued items. Violence can be the result of direct conflict where two people desire the same item. Material conflict, however, is often more abstract, analogous to the insatiable desires produced by the so-called “American Dream” (Merton 1938; Messner and Rosenfeld 1994) where individuals may desire items not readily available to them, putting them in conflict with the economic and political system. This type of conflict between an individual’s felt needs/desires and availability of these goods and services within the current economic/political system may provoke individuals to commit burglary, robbery, fraud or any other number of related crimes to gain material rewards not allocated to them. This type of material conflict is abstract as there is not necessarily any direct animosity toward the individual that may be robbed, but the victim is a representative of an economic or political system that is perceived to not sufficiently provide for all citizens. Conversely, if individuals perceive economic institutions as providing satisfactory rewards, there is little reason to use unilateral force or violence for monetary gain (LaFree 1998).

### *Status Conflict*

In addition to material disputes over wealth and power, conflict concerning relative social status is also a significant source of violent crime. As Gould (2003) argues, symbolic status concerns often motivate the perpetration of violence. Gould (2003) analyzes conflict across a wide range of societal contexts in his theoretical work on violence, highlighting the

similarities between violent confrontations across time and space. Gould (2003) argues that human beings have an overarching concern with dominance and subordination in relationships with others (see also: Tittle 1995). This (often sublimated) attention to status causes individuals to focus on the relative deference allotted to themselves by subordinate others or paid to dominant others. According to this viewpoint, when there is uncertainty concerning deference and dominance, interpersonal violence becomes more likely. Gould's (2003) position does not exclude conflict over material concerns but stresses the symbolic desires and status concerns of individuals that engage in violent conflict.

Several scholars stress the importance of status considerations in the perpetration of violence. Concurring with Gould's (2003) hypotheses concerning a lack of a defined status hierarchy and violence, Roth (2009) argues that eras of American history marked by higher rates of homicide are characterized by a prevailing sense that one's place within the social hierarchy is contested or unsatisfactory. The belief that violence is necessary to command the respect of others contributes to increases in the rate of homicide (Roth 2009). Additionally, Luckenbill (1977) describes the events leading to homicide as character contests in which individuals attempt to "save face" in the face of challenges to their integrity, sexual prowess, family, friends, self or status. These character contests are often de-escalated before they turn violent, but contribute to a significant proportion of homicides (Katz 1988; Wolfgang 1957). Young men put forth considerable effort and often put themselves at risk of harm to gain social status (Wilson and Daly 1985).

Concern with social status is also echoed in Anderson's (1999) account of the "code of the streets." Due to racial inequality and subordination, young Black men are disproportionately denied the conventional means to achieving respect. Denied a path to a

respectable position within society, often achieved through education and other institutionalized signifiers of accomplishment, these young men “campaign for respect” by showcasing toughness and the willingness to resort to violence. Young men who are either weakly attached to mainstream social institutions or denied access to these means of respect are theorized to be more likely to use violence to defend their reputation against a perceived attack on their identity (Felson and Steadman 1983).

Status also plays a role in crimes with a clear pecuniary payoff. Items are often stolen to confer status upon the thief. Male thieves report feeling pressure to uphold a version of masculinity in which the goods stolen during a robbery give the appearance of self-sufficiency, assisting poor or jobless men to accomplish positively valued masculine status goals of independence, conspicuous consumption and provision for dependents (Miller 1998). Conversely, when individuals perceive institutions to be legitimate and invest their identities in institutionally recognized achievement, there should be less motivation to quarrel over relative social status.

### *Moral Conflict*

In addition to status and material concerns, several theorists have highlighted the moral intentions of violent offenders. Katz’s (1988) account of “righteous slaughter,” echoing research by Wolfgang (1957), links an attempt to uphold morality through violence and even murder. The “morality” of violence implied by Katz (1988) is a largely spontaneous and unplanned enforcement of unwritten rules of conduct. In the case of “righteous slaughter,” the eventual killer is defending his or her own version of “the good” after an initial violation of an unwritten moral code by the victim. In a blind rage, the offender’s goal

is to mark or morally pollute the initial aggressor/victim to reduce his/her status after a transgression that humiliates the offender. Recent theory in psychology, referred to as virtuous violence theory, presents a parallel account of homicide. Fiske and Rai (2015) argue that violence is motivated by attempts to sustain, end, honor or create relationships with others. In an even more expansive statement on the morality of violence than Katz (1988), Fiske and Rai (2015) claim that in most cases, people perceive their own actions as justified, even when committing homicide.

To defend waning institutional norms, individuals feel compelled to use violence against those who violate normative conventions. This type of violent defense of “the good” (Katz 1988) has been used to defend the institutions of patriarchy and marriage. When women violate the social norms that comprise patriarchal institutions, defenders of these norms may feel compelled to kill violators, such as in the case of so-called “honor killings” of women perceived to have brought dishonor to the family by violating norms concerning sexuality (Hasan 2002). These acts of violence, perceived to be justified in the eyes of the offender, also include the slaying of unfaithful spouses (Daly and Wilson 1988; Katz 1988). Overall, disagreements about appropriate moral behavior can contribute to fights or attacks culminating in violent crime. Sudden shifts in societal practices, such as women’s liberation, have been linked to “backlash,” when men use violence to enforce/regain their social status vis-à-vis women (Avakame 1999). Conversely, if all parties agree upon moral rules, there is little motivation to use unilateral violence to because moral rules will rarely be violated. Therefore, institutional legitimacy should reduce violent crime by reducing conflict over material, status, moral and normative concerns.

## **Mechanism #2: Conflict Resolution**

In addition to reducing conflict, *legitimate institutions assist in reducing violence by providing non-violent means of conflict resolution*. When citizens trust their government and the criminal justice system, they are hypothesized to utilize lawful means of resolving disputes (Nivette 2014). The use of third-party intervention resolves conflict without the use of violence. The choice to call upon legal intervention may be rational and deliberate, but people may also acquiesce to the power of the state. Over time, the inclination and ability to unilaterally resolve disputes may decline under the rule of a legitimate state, forming a culture where individuals acquiesce to outside intervention into personal grievances (Campbell and Manning 2014). Trust in institutional redress or acquiescence to a strong government will increase the likelihood of legal resolution of dispute and a decline in the use of unilateral violence to resolve disputes.

When the legitimacy of political (and economic) institutions wanes, parties are more likely to enforce a personal brand of justice through vengeance, as is common in “stateless” locations (Black 1983). When mainstream institutions lack legitimacy, individuals feel they lack institutional redress for perceived slights and the predation of others. In these relatively stateless locations, individuals often perceive the need to demonstrate toughness and credible deterrence, quickly enacting vengeance on those who would try to test them so as not be perceived to be an easy mark (Anderson 1999). Both qualitative and quantitative research demonstrates the (often) retaliatory nature of homicide, which is more evident in structurally disadvantaged neighborhoods where distrust of the criminal justice system is prevalent (Kubrin and Weitzer 2003; Papachristos 2009; Mullins, Wright and Jacobs 2004). As Papachristos (2009) writes about gang violence:

My findings suggest that gangs are not groups of murderers per se, but rather embedded social networks in which violence ricochets back and forth...What begins as a single murder soon generates a dozen more as it diffuses through these murder networks. (p. 76)

In these stateless locations, parties are quick to threaten violence to favorably resolve disputes. Subsequently, violence begets violence, as state actors are not trusted to intervene to deliver justice.

The reduction of violence through institutional redress is also apparent in economic disputes. Legitimate business operations have ready access to (non-violent) redress when there is a disagreement between parties. However, if access to courts, arbitration or the criminal justice system is limited, violence is sometimes used to enforce business transactions. For example, the inability of crack cocaine dealers to use formal contracts to settle business disputes, enforce organizational discipline and mediate territorial disputes has led to the use of violence as a means of social control (Fagan and Chin 1990; Goldstein 1985). The rise and fall of the crack cocaine market (Johnson, Golub and Dunlap 2006), with its apparent connection to gun violence (Wintemute 2006), corresponds with patterns of violent crime, especially pronounced in structurally disadvantaged neighborhoods (Ousey and Lee 2002). Conversely, shared trust in political and economic institutions provides avenues for non-violent conflict resolution, reducing the rate of violent crime.

### **Mechanism #3: Strengthening Community Control Mechanisms**

In addition to providing pathways to settle disputes in a non-violent manner, *legitimate institutions strengthen existing community social control mechanisms*. Apparent in Hirschi's (1969) classic work, strong social bonds reduce the temptation to adjudicate disputes using violence through (1) rational investment or stakes in conformity and (2)

emotional attachment to conforming significant others who may disapprove of criminal behavior. When individuals are enmeshed within social roles and expectations of legitimate institutions, they do not wish to risk disappointing significant others or losing their position within the community by engaging in violent or predatory actions (Hirschi 1969). These informal sanctions enhance the effects of formal sanctions (Sherman et al. 1992). Recent empirical evidence demonstrates that juveniles and young adults enmeshed in social institutions tend to engage in crime at a lower rate than their peers with relatively fewer institutional attachments (McCall, Land, Dollar and Parker 2013; Dollar, McCall, Land and Fink 2017).

In addition to promoting individual-level social control mechanisms, legitimate social institutions promote community control of violent crime. To effectively reduce violent crime committed by those in the “legitimation gap” (individuals who perceive institutions to be illegitimate), the community at large must cooperate in the enforcement of formal and informal sanctions. In local neighborhoods, residents must cooperate with authorities to assist in the apprehension of offenders to exert effective social control. In communities that perceive the criminal justice system to be legitimate, this is not an issue; if a dispute arises or a crime is committed, community members will intervene, often by contacting the police in an attempt to apprehend the offender(s) (Sampson 2012; Sampson and Groves 1989).

However, scholars propose that communities suffering from “legal cynicism” will undermine community social control mechanisms (Carr, Napolitano and Keating 2007; Kirk and Papachristos 2011; Sampson and Bartusch 1998). In explicating their hypothesis on legal cynicism, Sampson and Bartusch (1998) highlight a paradox within structurally disadvantaged communities: the residents have a strong commitment to conventional values

yet suffer from chronic violence within their local neighborhood. This paradox is clarified by distrust of police, pervasive within many disadvantaged communities, especially among racial and ethnic minorities. In structurally disadvantaged neighborhoods the police are not contacted in most cases where citizens witness crime and violence (Carr et al. 2007). As Sampson and Bartusch (1998) argue, distrust in the police and indifference to deviant behavior become a “cognitive landscapes” or a normative orientation. Kirk and Papachristos (2011) make a similar argument, hypothesizing that legal cynicism becomes a cultural frame when social disadvantage is spatially concentrated, as citizens share their negative interactions with the police with other community members. This distrust of police allows conflict to boil over into further (potentially preventable) violent crime and provides a haven for people who use violence with impunity to assert dominance and/or victimize others. Conversely, when the police are called upon to resolve disputes and arrest offenders, violent crime is reduced.

In summary, institutional legitimacy assists in reducing violent crime through three distinct mechanisms. Legitimate institutions reduce conflict, assist in (non-violent) conflict resolution and strengthen community social control mechanisms. The relationship between legitimate institutions and violent crime is empirically examined in Chapter 3, which assesses whether societies that enjoy a greater degree of institutional legitimacy have lower rates of homicide. The next section outlines the dynamic portion of ILT, addressing the impact of crises in institutional legitimacy on rates of violent crime and efforts by the state to impose social control.



## 2.4 Crises in Institutional Legitimacy

Now that the mechanisms connecting institutional legitimacy have been outlined, variation in institutional legitimacy needs to be discussed. Institutional legitimacy may wane for several reasons, causing the social control mechanisms outlined above to weaken. According to LaFree (1998: 6), institutional legitimacy is “the ease or difficulty with which institutions are able to get societal members to follow mutually shared rules, laws, and norms.” In general, scholars have asserted that people feel compelled to follow institutionalized norms and laws when they align with their own personal values (LaFree 1998; Tyler 2006) and are enforced in an even-handed manner (Sherman, 1993; Tyler, 2006). Perceptions of social injustice (Blau and Blau 1982) and disrespectful (Sherman 1993) or racially unjust practices (Sunshine and Tyler 2003; Tyler 2006) reduce the legitimacy of institutional actors.

Additionally, scholars have long argued that rapid social change weakens prevailing social norms (Durkheim 1951). During eras of rapid social change, “collective sentiments” are challenged; as new social practices become prevalent, the old norms lose their relevancy (Kim and Pridemore 2005; Pridemore and Kim 2006; Stamatel 2009). Elevated rates of crime have been noted under conditions of political and economic transition (Chu and Tusalem 2013; LaFree and Tseloni 2006; Zhao and Cao 2010) as well as eras of social unrest such as the Civil Rights era (LaFree 1998; LaFree and Drass 1997).

The decline in legitimacy across institutional domains may be due to related, but distinct social shifts. The decline in the legitimacy of the patriarchal family in the United States has been attributed to unrealistic expectations of the family (Coontz 1992), shifts toward an egalitarian gender ideology pushed by the women’s movement (LaFree 1998) and

changes in the economic conditions necessary to support the family on a single income (Messner et al. 2011). Shifting economic conditions during the 1960s and 1970s, including rising rates of income inequality and consumer inflation, also contributed to an increase in economically-motivated crimes. As the official economy was less able to fulfill citizen needs and began to be perceived to be unfair, people withdrew support from the official economy (LaFree 1998; Rosenfeld 2014). While the exact mechanisms causing institutions to lose legitimacy may differ across institutional domains, changing social values, perceptions of injustice and/or institutional ineffectiveness cause losses in institutional legitimacy. When institutions are perceived to be unjust, ineffective or irrelevant, individuals no longer feel bound by societal rules and norms.

### **Political Legitimacy and State Repression**

Focusing specifically on political institutions, political theory has long emphasized rule based on the consent of the governed (Locke 1948). Governments put forth considerable effort to foster legitimacy by attempting to be perceived as impartial and fostering belief in the law and political authority (Weber 1964). Political institutions gain legitimacy when they act within their predefined role, with the consent of the citizenry, by exercising power in a manner justifiable to all parties involved (Beetham 2013; Gilley 2006).

In addition to following established rules and making claims concerning the moral “rightness” of their actions, governments must account for the perceptions of the public (Bottoms and Tankebe 2012). Even in cases where governments are operating within their proscribed role, there is an interplay between the claim-makers (government officials) and the audience of these claims (citizens) that can cause power-holders to “put forward a revised

claim to legitimacy, which in turn might well require adjustment in their own understanding of their right to rule” (Bottoms and Tankebe 2012: 152). In this sense, claims to the legitimate exercise of power are “dialogical” in that the audience of the claim to legitimate rule by a power-holder can be rejected, requiring a negotiation of sorts between the claims of governments and acceptance by citizens (Bottoms and Tankebe 2012).

This argument about political legitimacy leads to an important question: What if political actors are unable to make successful claims of legitimacy? Of course, based upon the theoretical statements outlined above, we would expect rising rates of violent crime during crises in political legitimacy. However, as a balancing mechanism of sorts, *political legitimacy varies inversely with state repression*. As political institutions lose their ability to gain compliance through consent (legitimacy), political actors will seek to impose social control by other means, including state repression.

State repression can take many forms, but the general concept is *the use of excessive surveillance, constraint or violence by the state in an effort to monitor, incapacitate or otherwise prevent citizens from committing crime and other acts of disorder*. The evaluation that governmental actions are “excessive” can be subjective, based upon the perceptions of citizens. However, repression is also represented in the disproportionate severity of punishment for relatively minor criminal offenses, increases in the severity of sanctions for criminal offenses or the disproportionate use of force or sanctions against a specific group. Sharp increases in incarceration, monikered as “mass incarceration” in the United States, have been identified as a form of state repression (i.e. Alexander 2012), especially in relation to falling rates of crime (i.e. Zimring 2007).

It is somewhat of a truism that weak states are prone to the use of more punitive sanctions (Garland 1996). To maintain control, governments will sometimes use violence to effectively terrorize citizens into compliance. Recent theoretical statements have also linked declines in political legitimacy with greater state repression across Western democracies. For example, Garland (2001) claims that a crisis in political legitimacy in the United States and the United Kingdom contributed to the era of mass imprisonment. As rates of crime increased and trust in political authorities has declined (Dalton 2005), citizens were more apt to call for, and successfully receive, harsher criminal sanctions against criminal offenders (Pratt 2007). Increasing rates of incarceration was an appeasement of a citizenry that distrusted more moderate approaches to crime control suggested by politicians and experts, thereby leading to a decline in the rehabilitative ideal of the penitentiary (Garland 2001; Pratt 2007). Initial empirical evidence supports these contentions, as nations with better governance and greater political legitimacy hold fewer prisoners (Lappi-Seppälä 2011). Regardless of whether declines in political legitimacy contributed to more repressive impulses by government actors or desires for punitive sanctions by citizens due to rising rates of crime, political legitimacy is hypothesized to be inversely associated with state repression (see Figure 2).

Based on previous theory, the impact of state repression on crime is moderated by the consistency of the application of repressive techniques. Instead of producing conformity, state repression is often ineffective in reducing violent crime if perceived to be unjust. In fact, inconsistent coercive treatment may produce anger (Colvin, Cullen and Vander Ven 2002), defiance (Tittle 1995) and a rejection of legal authority (Sherman 1993). Recent research suggests that after contact with the criminal justice system, felons will actively

avoid contact with “the system,” to prevent possible surveillance efforts by legal authorities, even forgoing medical care, educational opportunities and employment in the formal labor market (Brayne 2014). Combined with findings on the role of incarceration in increased recidivism (Lipsey and Cullen 2007), previous theory and research suggest that some forms of state repression decrease institutional legitimacy/attachment and increase criminal involvement if applied sporadically or unfairly (Colvin et al. 2002; Sherman 1993).

Ultimately, the effect of state actions and political legitimacy is based upon perceptions of whether the government is acting within its pre-defined role (Beetham 2013; Gilley 2006). For example, enacting harsh policies against crime in response to public calls for severe punishment (i.e. Pratt 2007) could improve perceptions of political institutions. If repressive state actions are perceived to be lawful, necessary and within the domain of state responsibilities, repressive treatment of some citizens may lead to improved political trust across large segments of the population. However, if citizens perceive actions by the state to be overly repressive, perceptions of political legitimacy will be undermined. Consistent with previous theory on institutional legitimacy (Sherman 1993), perceptions of state repression will undermine political legitimacy, especially among populations repressed by police or other actors in the criminal justice system. Overall, as depicted in Figure 2, waning political institutional legitimacy will lead to greater state repression, which may subsequently undermine political legitimacy under some circumstances.

### **The Efficacy of State Repression**

Also outlined in Figure 2, *an increase in state repression is hypothesized to reduce crime*. This theorized relationship, however, is subject to several caveats. First, this

relationship is moderated by “coercive capacity.” The success of the state in reducing violent crime through repression is largely dependent upon the resources the state possesses to devote to (repressive) social control. Governments able to hire large police forces, imprison a significant proportion of their citizenry and use surveillance to observe the potential deviant behavior of the population will be more successful using repressive techniques to reduce violent crime. A government with more resources at its disposal to repress its citizens, labeled in Figure 2 as “coercive capacity” (Cole 2017; Mann 1984), should be able to more effectively use repression to reduce violent crime. In the case of incarceration, the mechanism reducing crime is similar to selective incapacitation (Blumstein, Cohen and Farrington 1988), whereby individuals who have propensities toward crime are incapacitated. If the state is inconsistent in its application of repressive or coercive actions, the effectiveness of its crime-control efforts may wane (Colvin et al. 2002).

Under most circumstances, increasing the (perceived) cost of crime (Becker 1968; Gibbs 1975), incapacitating individuals (Blumstein et al. 1988), closely surveilling citizens or using extra-judicial violence can deter or prevent crime. Individuals in the “legitimation gap,” who are alienated from societal institutions and possibly more prone to criminal involvement (Anderson 1999; Dollar et al. 2017; McCall et al. 2013; Hirschi 1969), can sometimes be deterred or incapacitated through the threat of punishment or violence. State repression should pose deterrent and incapacitative effects as the threat of (excessively) harsh punishment or the long-term incapacitation of offenders should reduce rates of violent crime.

However, state repression will be somewhat less effective at reducing violent crime than achieving and maintaining political legitimacy. Although political power is based on a monopoly of the legitimate use of violence, governments put forth a great deal of effort to

achieve legitimacy (Weber 1964). It is easier to maintain order when citizens agree with the moral basis of the law and obey the law regardless of the threat of punishment (Tyler 2006). Significant challenges to legal authority are not only costly to repress but may also undermine perceptions of political legitimacy if the force used by the state is perceived to be excessive by the populace.

Institutional legitimacy and state repression should provide an explanation of why violent crime varies across time and social space, but with caveats. While these theoretical relationships may hold for the entire population, repression is typically employed as a strategy to control socially marginalized populations (Beckett and Western 2001). In research on imprisonment, scholars have noted elevated rates of incarceration among minority populations in the United States (Alexander 2012) as well as in other nations (Tonry 1997; Wacquant 1999a). Majority populations sometimes support state repression, as in the case of “racial threat” (Blalock 1967). Higher rates of offending (LaFree 1998) coupled with racialized perceptions of disorder (Sampson 2012) or economic or political racial threat (Blalock 1967) will attract repressive actions by the state toward minority communities, which further undermines perceptions of legitimacy of the criminal justice system and its actors (Kane 2005; Kirk and Papachristos 2011; Kubrin and Weitzer 2003). However, citizens unaffected by (or even supportive of) the repressive actions of the state may perceive force to be warranted, thereby increasing political legitimacy. In societies with significant issues with racial and economic inequality, political repression against “marginal” citizens may not affect perceptions of legitimacy/illegitimacy across the entire population.

It should also be noted that declines in political legitimacy do not necessarily have an immediate impact on state repression. In some cases, social unrest may provoke an

immediate repressive response from state actors. In other cases, it may be several years or even decades after initial declines in political legitimacy before governments enact more repressive policies. In the case of the United States, declines in political legitimacy did not contribute to a shift in more repressive government policies for more than a decade. In the period between the initial decline in political legitimacy and increase in state repression, crime rates rose dramatically. As more police were deployed and more people were incarcerated, crime rates began to level-off and decline (LaFree 1998). The crucial period for increases in violent crime is after initial declines in institutional legitimacy and before the enactment of more repressive state actions.

This theoretical framework may assist in the explaining patterns of violent crime in the post-World War II period across Western democracies. The initial increase in violent crime during the 1960s and 1970s was the result of declining institutional legitimacy (LaFree 1998; Roth 2009). As crime rates increased, citizens' fear of crime victimization and cynicism toward political institutions increased as well, contributing to increasingly repressive administration of justice (Garland 2001; Pratt 2007). Government attempts to re-exert social control through a more repressive administration of justice during the 1980s and 1990s contributed to declines in violent crime, as an increasing number of citizens were incapacitated through mass imprisonment. Figure 3 provides a visual depiction of the operation of the relationship between waning political legitimacy, crime rates and state repression.



## 2.5 Summary

Overall, the current chapter provides an updated and integrated version of ILT. This chapter builds on LaFree's (1998) initial articulation of ILT by more clearly outlining the causal mechanisms connecting institutional legitimacy to lower rates of violent crime. To explicate these causal mechanisms, this iteration of ILT is grounded in Black's (1983) conceptualization of violence as unilateral conflict resolution. By examining violent crime as one possible outcome of conflict, this chapter also articulates the role of subsequent theoretical developments on reductions in conflict, peaceful resolution of conflict and the strengthening of community control mechanisms (Anderson 1999; Gould 2003; Nivette 2014; Sampson and Bartusch 1998; Roth 2009) hypothesized to reduce violent crime in ILT.

Additionally, this chapter integrates observations on the recent punitive turn in the administration of justice into ILT. Following scholars examining the causes of the prison expansion across Western democracies (Garland 2001; Pratt 2007), this theoretical framework accounts for state repression resulting from waning political legitimacy. While rates of violent crime are hypothesized to rise as political legitimacy wanes, states are also hypothesized to become more repressive due to declining institutional trust. The inverse association between political legitimacy and state repression may be due to an attempt to re-exert social control as rule by the consent of the governed (Locke 1948) fails, but may also be driven by distrust of experts, political operatives and rehabilitation as well as fears of rising crime (Garland 2001; Pratt 2007). The recent punitive turn in the administration of justice across Western democracies, referred to in this chapter as "state repression," acts as a balancing mechanism to declines in political legitimacy, leading to temporal declines in crime under some conditions.

In summary, nations enjoying greater institutional legitimacy are hypothesized to have lower rates of violent crime. Crises in institutional legitimacy should contribute to increases in rates of violent crime. However, crises in political legitimacy may eventually trigger a repressive response by the state, which is hypothesized to lead to a decline in rates of violent crime if the state has sufficient coercive capacity. However, rates of violent crime will remain elevated in nations with lower political institutional legitimacy in comparison to nations with higher political institutional legitimacy as maintaining institutional legitimacy is hypothesized to be more effective than state coercion in reducing crime. See Figure 4 for the full theoretical model.

In the next chapter (Chapter 3), the empirical validity of a portion of this theoretical framework is examined. Specifically, the following chapter provides evidence that the legitimacy of four institutions (political, economic, familial and religious) assists in the control of homicide rates across 108 nations.

## **CHAPTER 3. A CROSS-NATIONAL TEST OF INSTITUTIONAL LEGITIMACY THEORY ACROSS 108 NATIONS, CIRCA 2012**

### **3.1 Introduction**

The current study addresses the empirical validity of institutional legitimacy theory (ILT) across a sample of 108 nations. As outlined in Chapter 2 (see Figures 1 and 4), institutional legitimacy is hypothesized to reduce violent crime through three basic mechanisms. First, institutional legitimacy is hypothesized to reduce conflict as agreement about the moral values, rules and norms of these institutions should reduce the need to impose (violent) unilateral social control on others. Second, political and economic institutional legitimacy are hypothesized to assist in reducing homicide rates as parities are hypothesized to call upon institutional rules, norms and actors to resolve conflict (Black 1983; Nivette 2014). Finally, institutional legitimacy is hypothesized to strengthen community sanctions. Unfortunately, without multilevel data, this study is unable to assess all aspects of the theory. However, this study provides some initial support for the hypothesis that institutional legitimacy is negatively associated with violent crime. Previous research on institutional control of crime is briefly reviewed below.

Previous iterations of ILT have rarely been examined in the empirical literature (cf. Messner et al. 2011; Nivette and Eisner 2013), providing few direct guidelines on how to empirically examine evidence supporting its tenets. However, several scholars have examined institutional anomie theory (IAT), which similarly emphasizes the institutional control of crime. Scholars testing IAT, following the language and logic of its framers (Messner and Rosenfeld 1994), have examined non-economic institutional “strength” rather than institutional “legitimacy” (as stressed in ILT). Theoretically, these concepts are arguably

distinct, as institutional strength could refer to the relative importance of institutional norms in relation to competing institutional norms while institutional legitimacy is conceptualized as the belief in the morality of institutional norms and actors. Empirically, however, there is not an established distinction between the concepts of institutional strength and legitimacy in aggregate-level research, as available measures remain imprecise. Therefore, the following literature review will draw on research examining both institutional *strength* (in relation to IAT) and institutional *legitimacy* (in relation to ILT).

Following previous researchers examining the impact of institutional strength on crime (Bjerregaard and Cochran 2008; Chamlin and Cochran 1995; Kim and Pridemore 2005; Maume and Lee 2003), the analysis in this chapter accounts for the impact of specific institutional domains. In this study, the effect of political, economic, familial and religious institutions is assessed in relation to variation in national homicide rates. This chapter contributes to the extant literature on institutional control of violent crime, which is limited to sub-national examinations (Chamlin and Cochran 1995; Kim and Pridemore 2005; Maume and Lee 2003) or has failed to account for the legitimacy of economic institutions (Bjerregaard and Cochran 2008; Nivette and Eisner 2013). This study employs a unique measure of economic institutional legitimacy by utilizing an estimate of the size of the “shadow economy” produced by economists (Schneider, Buehn and Montenegro 2010). Consistent with ILT, this study provides evidence supporting the claim that underground economies, operating in the shadows, produce with higher rates of homicide.

### 3.2 Literature Review

Previous cross-national and aggregate-level research provides limited and partial support for the underlying causal arguments of ILT. The most pertinent research addresses cross-national variation in perceptions of political legitimacy. Utilizing an integrated measure of legitimacy prepared by Gilley (2006), Nivette and Eisner (2013) find that political legitimacy is negatively associated with homicide rates across a cross-national sample of 65 nations. The negative association between political legitimacy and homicide rates persisted after accounting for several control variables. Nivette (2012) confirms this finding across a smaller sample of European nations. Antonaccio and Tittle (2007) also find indirect support for the negative association between political legitimacy and homicide rates. The authors find a negative relationship between homicide rates and measures of corruption, their proxy of “de-moralization” (e.g. Bonger 1916). Supporting the arguments of ILT, corruption is also linked to waning political legitimacy (Seligson 2002).

This limited cross-national support for ILT is buoyed by the apparent relationship between trust in government and rates of violent crime. Both LaFree (1998) and Roth (2009) utilize public polling data collected in the United States to support the argument that as people lost trust in political institutions, there was an abrupt spike in homicide rates. Neither author uses multivariate statistical techniques to eliminate the possibility that this apparent connection is due to unmeasured forces, but these findings bolster the argument that variation in political legitimacy at the national level can have a profound impact on rates of violent crime. Elevated rates of crime have also been noted during political and economic transitions (Chu and Tusalem 2013; Kim and Pridemore 2005; LaFree and Tseloni 2006) as well as eras of social unrest (LaFree 1998; LaFree and Drass 1997).

A growing body of literature, examining the empirical validity of IAT, has examined the association between non-economic institutions and rates of crime within aggregate-level research. Following Messner and Rosenfeld (1994), researchers assessing the relative merits of IAT have provided indirect support for ILT by examining institutional strength in relation to rates of crime. A few scholars have focused on the impact of institutional strength within nations, including the United States (Baumer and Gustafson 2007; Chamlin and Cochran 1995; Maume and Lee 2003) and Russia (Kim and Pridemore 2005; Pridemore and Kim 2006). Research using measures of institutional strength such as voter participation, church membership, family structure, time spent with the family and expenditures on education within the United States have found moderate support for the relationship between institutional strength and (lower) rates of crime. Engaged church adherence (religious institutions) and family structure/participation (familial institutions) are negatively associated with crime whereas voting behavior (political institutions) shows inconsistent associations with crime (Baumer and Gustafson 2007; Chamlin and Cochran 1995; Maume and Lee 2003). In a Russian sample, strong family and political institutions protected citizens from the criminogenic impact of the abrupt societal transition during the dissolutions of the Soviet Union, resulting in lower homicide rates (Kim and Pridemore 2005).

Research on institutional strength in the context of IAT has extended to cross-national samples with mixed results (Bjerregaard and Cochran 2008; Cochran and Bjerregaard 2012). Depending on model specification and type of crime analyzed (homicide or theft), the strength of family, political, and educational institutions suppresses rates of crime. However, measures of educational institutions (expenditures) are positively related with homicide rates (Cochran and Bjerregaard 2012), the opposite of the expected direction. Also, while some of

the interactions between institutional strength and economic deprivation show support for the mitigation of poverty/inequality on crime by strong non-economic institutions, other findings show an aggravating effect on crime, including higher rates of crime associated with stronger voter turn-out, the proxy measure used for the strength of the polity in a cross-national sample (Bjerregaard and Cochran 2008).

### **Murder in the Shadows: The Shadow Economy**

The impact of economic institutional legitimacy has not been assessed in previous research. Due to the exclusive focus on the strength of *non-economic* institutions in IAT, previous scholarship on rates of violent crime has largely avoided the crime-reducing impact of economic institutions. In the case of economic institutional legitimacy, the official (state sanctioned) economy loses support if it is perceived to be unjust or fails to provide sufficient opportunities (LaFree 1998). As the official economy loses legitimacy, people may opt to do business in the shadow economy, increasing the likelihood that individuals resort to “self-help” due to the unavailability of the police and courts to resolve disputes (Black 1983; Goldstein 1985). The “shadow economy,” also known as the informal economy, underground economy or black market, refers to the trade of goods and services outside of government regulation. Violence is a noted feature in the shadow economy, manifested in the rise of homicide rates associated with the prohibition of alcohol (Jensen 2000) as well as the use of violence by gang members to resolve territorial disputes and enforce organizational orders while selling illicit narcotics (Goldstein 1985; Venkatesh 2008).

The official economy loses (or gains) legitimacy largely due to the policies and behavior of the state. According to economists, businesses flee the government-sanctioned

marketplace due to policies perceived to be onerous, such as excessive regulations or high rates of taxation (Schneider et al. 2010). Some governments are predatory in nature (Evans 1995) and the demand for bribes by government officials may cause businesses to move underground to operate outside of the view of the state (Marcouiller and Young 1995). In this way, the legitimacy of the official economy is intimately tied to the legitimacy of the polity, as it is (largely) government actions that cause the shadow economy to expand or contract.

Additional theory on the relation between individual behavior and economic conditions suggests that financial downturns, rising rates of income inequality and inflation may cause individuals to supplement their income by alternative, sometimes criminal, means (LaFree 1998; Rosenfeld 2014). Whether it is the lack of redress in the underground economy or the lack of economic institutional effectiveness in providing a satisfactory income, the legitimacy of economic institutions is hypothesized to be negatively associated with violent crime. These arguments support the introduction of the shadow economy as an indicator of (waning) economic institutional legitimacy.

### **3.3 Hypothesis**

Based on the theoretical statements outlined in Chapter 2, the overall hypothesis tested in this chapter is *the rate of violent crime varies inversely with institutional legitimacy*. Conceptualized as a macro-theory, the empirical test below addresses whether nations with greater institutional legitimacy have lower rates of violent crime, measured in this study as homicide rates. Following previous research (Baumer and Gustafson 2007; Bjerregaard and Cochran 2008; Chamlin and Cochran 1995; Maume and Lee 2003), the role of specific institutional domains is assessed, including political, economic, familial and religious



institutions. Therefore, the sub-hypotheses tested in this chapter are that violent crime varies inversely with (1) political, (2) economic, (3) familial and (4) religious institutional legitimacy.<sup>2</sup>

### 3.4 Data and Methods

To test the hypotheses outlined above, this study utilizes a sample representing all nations and political territories with sufficient data on the dependent variable (homicide rates) and key predictors (measures of institutional legitimacy). Cases without sufficient data are eliminated, resulting in a sample of 108 nations and political territories. In a cross-national literature dominated by samples of less than 50 nations (Nivette 2011), it is important to expand sample size to ensure a more representative sample, both in terms of geography and economic development. Although a disproportionate number of the nations in this sample are drawn from Europe (41), 25 African nations, including five nations with less than \$1,000 gross domestic product (GDP) per capita (Burundi, Liberia, Malawi, Mozambique and Niger) and 30 nations (in total) with less than \$5,000 GDP per capita are included. Data for these analyses are compiled from several sources. These sources are all publicly available and include the World Bank, the United Nations Statistical Yearbook, the United Nations Office of Drugs and Crime, the United Nations Department of Economic and Social Affairs and Transparency International. Appendix A provides a list of the nations and political territories comprised within the sample.<sup>3</sup>

---

<sup>2</sup> Educational institutions were also considered in preliminary analyses, but lack of quality data severely limited the sample size when measures of educational institutional legitimacy (enrollment) were considered.

<sup>3</sup> While analyzing Cook's Distance statistics, it became apparent that Haiti is an influential outlier. Haiti is excluded from the final analysis (originally, there were 109 nations in the sample).

## **Dependent Variable**

Due to measurement limitations of certain types of violent crime (e.g. assault, rape and robbery), homicide rates are the preferred dependent variable among scholars studying variation in crime across nations (Neapolitan 1997a). The current study uses homicide data compiled by the United Nations Office of Drugs and Crime (UNODC 2013) for the year 2012 (the most recent year with relatively complete data).<sup>4</sup> Nearly 200 nations and political territories are represented in the UNODC (2013) report, providing a significant advantage in coverage over World Health Organization (WHO 2015) raw mortality data, which includes homicide estimates for fewer than 80 nations in 2012. Traditionally, WHO estimates have been preferred in cross-national research due to the use of official mortality statistics relatively free of bias by political influence or differences in police reporting procedures (LaFree 1999b; Neapolitan 1997a). However, scholars have used UNODC (2013) data in recent research on homicide (Antonaccio and Tittle 2007; Chu and Tusalem 2013) and data derived from the UNODC (2013) and WHO (2015) share a strong correlation among complete observations ( $r = .96$ ). In this sample, there is a wide range of homicide rates across nations, spanning from less than one homicide per 100,000 population in Japan and Singapore to over 90 homicides per 100,000 in Honduras. The mean for the sample is 7.8 homicides per 100,000 (See Table 1).

## **Independent Variables**

To address the hypothesis that violent crime varies inversely with institutional legitimacy, this study includes measures representing the legitimacy of four social

---

<sup>4</sup> To maximize sample size, observations missing for 2012 are imputed using estimates of 2011 and 2010.

institutions: the economy, the polity, the family and religion. Ideally, data on perceptions of these institutions would be employed, but the proxy measures used in this study represent behavioral or cultural dynamics that attempt to capture institutional legitimacy (or the lack thereof). Beginning with the concept of economic institutional legitimacy, research conducted by Schneider and colleagues (2010) to determine the size of the shadow economy is utilized. The most recent estimates, representing the years 2006 and 2007 are employed, with higher figures representing a higher percentage of the trade of goods and services in the shadow economy (as a percentage of total GDP). To compute this measure, Schneider and colleagues (2010: 9-10) analyze the relationship among “unobserved variables” in structural equation modeling by utilizing a set of observed measures associated with the shadow economy. These variables include monetary indicators (additional use of cash in transactions), labor force participation, labor force growth rate and gross domestic product (GDP) per capita. While there are concerns with accuracy in estimating the size of the informal economy, a review of methods of estimation suggests that the model-based approach employed by Schneider and colleagues (2010) is the most promising; model-based estimates have largely been confirmed by direct survey measures of informality (Andrews, Sanchez and Johansson 2011). The size of the shadow economy (as a percent of GDP) is the measure of the inverse of economic institutional legitimacy.

To assess political legitimacy, estimates provided by Transparency International (2012) are utilized, capturing “expert” perceptions of corruption within the public sector (for the year 2012). Following previous research referencing this measure (Antonaccio and Tittle 2007), the variable is reverse coded as the untransformed estimates capture how “clean” a nation’s government appears to be (the absence of corruption). After reverse coding, greater

values represent a higher level of corruption (on a scale of -100 to 0). Greater amounts of corruption (approaching 0) indicate less political institutional legitimacy.

Following LaFree (1998) and Messner and colleagues (2011), the loss of legitimacy in the “patriarchal family” is indicated by higher rates of divorce. Accordingly, the measure utilized to estimate (the waning of) familial institutional legitimacy is a divorce-to-marriage ratio, which accounts for the population at risk for divorce (married people). These estimates are derived from survey data compiled by the United Nations (2015) Department of Economic and Social Affairs. Survey observations representing five-year age intervals are combined to calculate the percentage of adults between the ages of 20 and 44 who are married or divorced, using population data (United Nations 2014) to account for the relative size of each five-year age group. Data represent the year 2012 or the most recent observed data point preceding 2012 within a five-year period.<sup>5</sup>

Finally, religious institutions are accounted for in this study. Following scholars noting lower rates of homicide in nations with more Muslim adherents (Neapolitan 1997b) and nations with a predominant Eastern religion (Antonaccio and Tittle 2007), a dummy variable is used to indicate an Eastern religion (Islam, Buddhism, Confucianism or Hinduism), coded as “1” for nations with a minimum of a 70% majority. This is not a measure of legitimacy per se, as it does not capture strength or commitment to religious

---

<sup>5</sup> Traditionally, scholars have drawn upon the United Nations (2014) Demographic Yearbook for divorce and marriage statistics (Greenstein and Davis 2006). However, these data have very limited coverage in developing nations, especially in Africa. For this reason, the survey data outlined above are utilized. When different estimates for the same year are available, surveys conducted directly by the United Nations are utilized. For Albania, Malaysia, Myanmar, and Vietnam, estimates of a total of ‘divorced’ and ‘separated’ (combined) are the only divorce data available, but are included nevertheless to avoid losing cases. Estimates for 2013 are used for Sierra Leone and Turkey as older measures were either incomplete or exceeded a five-year window preceding 2012. While this may appear to violate time ordering of the independent and dependent variables, the imputation of 2013 data is conducted under the assumption that divorce and marriage rates are relatively stable annually and the goal of this study is to capture stable differences between nations in institutional legitimacy and homicide. Substantive results are largely the same without the inclusion of these two cases.

norms/practices, but Eastern religions are hypothesized to play a more central role in imposing behavioral demands of its adherents than their non-Eastern religious counterparts, promoting traditional norms and shared values (Neapolitan 1997b). LaFree (1998) argues that institutions serve as the “grooves” that guide human behavior: Eastern religions are hypothesized to provide a greater amount of behavioral guidance, which makes this measure a suitable proxy for the conceptual arguments underlying ILT. Data on religious belief are derived from the Central Intelligence Agency’s (2015) *World Factbook*.

### **Control Variables**

Additional variables established as important predictors of homicide in the extant literature are included for statistical control in these analyses. Two measures are used to assess relative affluence and deprivation. As a strong, consistent predictor of homicide in cross-national research, income inequality (LaFree 1999a; Nivette 2011) is captured by using an estimate of the income share of the top quintile of income earners divided by the share of the bottom quintile. This use of this estimate is consistent with previous cross-national research utilizing the United Nations University – World Institute for Development Economics Research (2015) database (Nivette and Eisner 2013). Although there are fairly complete data for 2012, estimates for preceding years (up to ten years) were used in cases of missing data, as rates of income inequality tend to change slowly over time (Messner, Raffalovich, and Shrock 2002).<sup>6</sup> The 2012 human development index compiled by the United Nations Development Program (2012) is also drawn upon as a commonly used measure of a

---

<sup>6</sup> Where available, estimates of income shares based upon disposable income were used to maintain consistency between nations. In 53 cases, disposable income statistics are utilized, while 49 cases represent consumption income results. The remaining six cases are of miscellaneous definitions (gross, primary income and “other”).

nation's relative affluence within cross-national homicide research (Antonaccio and Tittle 2007; Messner and Rosenfeld 1997).

Population composition is captured in these analyses, including the relative size of the male adolescent and young adult population within the society. Because young men in their late teens and early 20s exhibit the highest rate of criminal involvement (Hirschi and Gottfredson 1983), the percent of the population of that is male aged 15 to 29 is featured as a statistical control (UN 2014). To account for potentially conflictual ethnic divisions within society, estimates derived from research by Alensia and colleagues (2003) is used to account for ethnic fractionalization, another factor found in prior research to be related to crime rates (Nivette 2011). The descriptive statistics are presented in Table 1.

### **Preliminary Analysis**

Ordinary least squares (OLS) multiple regression analysis with robust standard errors is the statistical technique used in this study. Because the distribution of homicide rates is skewed, the natural logarithm of the homicide rate is used as the dependent variable to approximate a normal distribution and reduce heteroscedasticity. After making this transformation, examination of a Cook-Weisberg test and residual scatterplots indicate no problem associated with heteroscedasticity in the model(s).

Another potential issue with using OLS regression analysis is collinearity, especially in aggregate-level analyses (Land, McCall and Cohen 1990). Although there is no agreement on the exact cut-off point at which collinearity becomes problematic (O'Brien 2007), issues with multicollinearity (Land, et al. 1990) and the partialling fallacy (Gordon 1968) can lead to erroneous inferences – typically caused when statistically significant and meaningful

relationships appear insignificant. Bivariate correlations, displayed in Table 2, provide evidence of issues with collinearity. Correlations that warrant closer scrutiny include the relationship between the human development index (HDI) and corruption ( $r = -.73$ ) as well corruption and the size of the shadow economy ( $r = .68$ ), providing reason for caution in estimating these predictors simultaneously in the model and erroneously interpreting a finding of non-significance.

Due to these relatively high bivariate correlations among independent and control variables, OLS regression models are estimated as nested models to examine changes in coefficients across different model specifications for evidence of collinearity. Additionally, variance inflation factors (VIF) are scrutinized in these models. In none of these models did the VIF exceed four, indicating that there is no serious issue with multicollinearity. In the final model, HDI (which shares moderately strong bivariate correlations with several variables) is eliminated from the model to examine the robustness of the results for the variables of central focus: the shadow economy and other measures of institutional legitimacy.

### **3.5 Results**

Overall, four OLS multiple regression models, located in Table 3, are estimated and examined. Beginning with the major contribution of this study, Model 1 simply includes the shadow economy as a predictor of the natural logarithm of homicide rates. The size of the shadow economy is a significant (positive) predictor of homicide rates, explaining approximately 38% of the variation in the dependent variable. In Model 2, the control variables are included in addition to the shadow economy. The shadow economy remains a

statistically significant predictor of homicide after controlling for income inequality (positive and significant), percentage of the populations that is male between the ages of 15 and 29 (positive and significant), HDI (not significant) and ethnic fractionalization (not significant).

In the full model, Model 3, all control and independent variables are included in the OLS regression analysis. The shadow economy (positive), corruption (positive), the divorce-to-marriage ratio (positive) and the Eastern religion dummy (negative) are all significantly associated with the natural logarithm of homicide rates in the predicted direction, confirming the hypotheses outlined above derived from ILT. Additionally, income inequality and the percentage of the population that is male between the age of 15 and 29 remain statistically significant and positively associated with homicide in this model.

In the final model of Table 3, Model 4, HDI is removed. The results remain substantively the same across Models 3 and 4, providing evidence for the robustness of the results. However, due to the strong bivariate correlation between HDI and several variables in the model, the finding (in Model 3) that HDI is not a significant predictor of homicide must be interpreted with caution. In fact, in further analyses (not shown), HDI is demonstrated to be an important predictor of homicide rates (negative and significant), but its effect is obscured by the partialling fallacy (Gordon, 1968) operating among HDI, percent males aged 15 to 29 and the corruption measure.<sup>7</sup>

---

<sup>7</sup> An additional model (not shown) that does not include the percentage of males aged 15 to 29 was estimated, finding that HDI was a significant (negative) predictor of the natural logarithm of homicide rates. Another model (not shown) omits the corruption measure and reveals a statistically significant coefficient for HDI, another indication of the partialling fallacy. All other results remained substantively the same, (except for Eastern religion failing to reach statistical significance in the first additional model) confirming that institutional



## Supplemental Analyses

To address potential concerns with the quality of data for countries traditionally under-represented in cross-national homicide analyses, further tests are completed to determine the robustness of the results. The first supplemental analysis uses weighted least-squares (WLS) regression to account for potentially greater measurement error introduced into this analysis by the inclusion of several developing nations which may not possess the resources to consistently gather accurate data. This WLS regression model is weighted by GDP per capita (World Bank, 2017a), under the assumption that data from higher income nations are of better quality. This analysis utilizes the same dependent and independent variables as Model 3, but with only 106 cases due to missing GDP per capita data for Argentina and Myanmar. Results of this analysis are presented in Table 4, labeled as “Model 5.” The results are substantively consistent with the OLS regression results, although corruption was technically not statistically significant at the 95% confidence interval (one-tailed test) but approached significance ( $p = .06$ ).

A second potential source of measurement error is suggested in a recent research note calling for cautious use of some homicide rate estimates (Kanis, Messner, Eisner and Heitmeyer 2017). This report outlines the practice by researchers associated with the World Health Organization to provide model-based estimates of homicide rates in their Global Health Estimates. While efforts to produce a more comprehensive sample of nations in homicide research is laudable, these estimates may be prone to bias or inaccuracy, as these homicide rate estimates are constructed without direct public health data, and sometimes, with only the use of available region-specific data if nation-specific data is unavailable. For

---

legitimacy is a robust predictor of homicide and HDI has an influence on homicide rates that may be obscured in this analysis.

this reason, researchers have suggested that these model-based estimates are inappropriate “for causal modeling of homicide rates” (Kanis et al. 2017: 5). The UNODC (2013) utilizes these data for their report if direct public health or criminal justice estimates are unavailable. Eighteen of the 108 cases in the original sample include these (potentially) problematic estimates. Model 6 presented in Table 4 displays the results of the 90 remaining cases after dropping these 18 cases. The results of this supplemental analysis are substantively identical to the full model (Model 3, Table 3). These results confirm the robustness of the results across various model specifications and different samples of nations.<sup>8</sup>

### **3.6 Discussion and Conclusions**

This study provides support for institutional legitimacy theory (ILT). These analyses supply evidence that the legitimacy of economic, political, familial and religious institutions assist in the suppression of homicide rates across societies. Contributing to a growing literature on institutional control by scholars testing institutional anomie theory (IAT) (Bjerregaard and Cochran 2008; Chamlin and Cochran 1995; Kim and Pridemore 2005; Maume and Lee 2003) and research on the legitimacy and stability of the state (Antonaccio and Tittle 2007; Chu and Tusalem 2013; Nivette and Eisner 2013), the findings of this study provide further evidence that violent crime varies inversely with institutional legitimacy. Unique to this study, the role of economic institutional legitimacy is explicated and tested. By utilizing a unique measure of waning economic institutional legitimacy (the size of the

---

<sup>8</sup> The UNODC (2013) typically draws upon a mixture of direct public health estimates of mortality, often drawn from the WHO (2017), and estimates provided by national criminal justice systems. However, in a few cases, especially in sub-Saharan Africa, homicide estimates were dependent upon indirect regional data or modeled based upon known correlates of homicide. The 18 cases produced by model-based approaches eliminated for the supplemental analysis are: Burkina Faso, Burundi, Cameroon, Ethiopia, Ghana, Guinea, Iran, Laos, Malaysia, Mali, Myanmar, Niger, Nigeria, Rwanda, Togo, Tanzania, Vietnam and Zimbabwe.

shadow economy), this study demonstrates the importance of economic institutional legitimacy in reducing homicide rates.

These results provide tentative support for (re)conceptualizing institutional control of homicide from the perspective of ILT. The explanatory scope of ILT does not appear to be limited to developed, Western nations as some have argued about the limitations of institutional anomie theory (IAT) (Chamlin and Cochran 2007; Dolliver 2015; Messner, Thome and Rosenfeld 2008) as a diverse sample of 108 nations and political territories are analyzed in this study. Additionally, economic institutional control explains a significant amount of cross-national variation in homicide, a factor excluded in IAT. However, a crucial test for ILT (in relation to IAT) is whether perceptions of injustice, ineffectiveness or immorality cause individuals to withdraw support from major social institutions. Some scholars have begun the task of assessing perceptions of political legitimacy and support for vigilante justice (Nivette 2016) and it is plausible that citizens living in nations where there is a large shadow economy perceive the state to be corrupt and the mainstream economy to be ineffective in fulfilling their needs. However, further research is needed to assess the causes and consequences of institutional legitimacy.

In addition to the theoretical implications for ILT, the relationship between the shadow economy and homicide rates has implications for scholars examining the role macroeconomic influences on violent crime. After somewhat inconsistent results assessing the impact of unemployment on crime (Chiricos and Delone 1992), researchers have focused on a broader study of the business cycle, including consumer sentiment and inflation as potential correlates to both property offenses and violent crime. This study provides indirect confirmation of the claims made by Rosenfeld and his colleagues (Rosenfeld 2014;

Rosenfeld and Messner 2009). Rosenfeld and his colleagues argue that periods of high inflation or low consumer sentiment could contribute to the expansion of illicit markets, contributing to an increased likelihood of self-help (Black 1983). This study provides evidence for the often-implicated role of black market transactions driving higher rates of violent crime. However, the crucial link between rising inflation or declining economic circumstances and an expansion of the informal economy are still largely theoretical at this point. This may serve as a fertile area of inquiry for future research, as this study provides initial evidence that a larger informal economy is associated with higher rates of homicide.

Coupled with recent research on the role of cash in promoting crime (Wright et al. 2017), there is also potential public policy relevance to this study. As implicated in ILT, governments should strive to promote (perceptions of) fairness and effectiveness in the “official” economy to draw individuals back into lawful transactions where the state can peacefully settle disputes. Also, governments may focus on assisting businesses to more easily enter the official economy by relaxing regulations and reducing certain taxes (Schneider et al. 2010). In addition to aiming to improve the legitimacy of the official economy, reducing currency that can be used untraceably for illicit market transactions may assist in the opportunity to conduct business in the informal economy (Wright et al. 2017). By reducing cash, governments may be able to effectively starve illicit businesses, potentially leading to declines in economically-motivated crime.

Despite significant contributions to the literature on institutional control of homicide, this study has limitations which provide areas for future inquiry. One limitation is the measurement of religious institutional legitimacy employed in this study, as a simple dummy variable is a very rough representation of religious legitimacy. While this is largely consistent

with previous cross-national research using a dummy variable (Antonaccio and Tittle 2007) or the percentage of adherents (Neapolitan 1997b) to assess the effect of religion on homicide, there have been disparate findings in terms of the strength of religious beliefs and crime (Jensen 2006). Additionally, the effects attributed to religious institutions may be cultural aspects about Eastern nations not captured in this study.

Measurement of institutional strength and/or legitimacy figures to be a major issue in future research. Previous research has attempted to capture institutional strength using various measures, including (aggregate) behavior such as voter turnout, religious service attendance and divorce rates (Bjerregaard and Cochran 2008; Chamlin and Cochran 1995; Maume and Lee 2003; Messner et al. 2011), surveys reflecting confidence in government (LaFree 1998; Roth 2009) and (less successfully) rough proxies such as educational spending (Bjerregaard and Cochran 2008; Maume and Lee 2003). Future research needs to address whether these various methods of measuring institutional strength or legitimacy are equally valid.

This chapter provides some support for the claim that cross-national variation in institutional legitimacy reduces rates of violent crime. This study provides support for the main hypothesis that institutional legitimacy is negatively associated with rates of violent crime. However, it is unclear whether temporal crises of legitimacy, like those described by LaFree (1998) and Roth (2009) in the United States, contribute to increases in violent crime. In the next chapter (Chapter 4), the impact of crises in institutional legitimacy is assessed on temporal trends in homicide. Assessing LaFree's (1998) claims in a sample of highly-developed Western democracies, Chapter 4 presents an assessment of the impact of

institutional legitimacy in the abrupt increase in violent crime during the 1960s and 1970s across Western democracies (Eisner 2008; Van Dijk et al. 2012).

**CHAPTER 4. A CROSS-NATIONAL ANALYSIS OF LAFREE'S  
*LOSING LEGITIMACY* THESIS, 1962-2005**

**4.1 Introduction**

Returning to the initial premise of institutional legitimacy theory (ILT), the current chapter is a cross-national examination of LaFree's (1998) *Losing Legitimacy* thesis. In his work that serves as the initial premise of ILT, LaFree (1998) was searching for an explanation for the sudden increase in street crime in the United States during the 1960s and 1970s. LaFree (1998) argues that most existing criminological perspectives are unable to account for sudden changes in the crime rate, necessitating a perspective centering on the rapidly shifting moral dimensions of social institutions. The post-war baby boom may have contributed to a portion of the rising crime rate, as more young men were at the peak crime age (Hirschi and Gottfredson 1983). However, changes in population composition cannot account for cohort differences in the offending rates that have been noted during the post-World War II period (Greenberg 1985; Cook and Laub 2002). To account for variation in criminal offending, LaFree (1998) directs our attention to shifting perceptions of social institutions that occurred during the second half of the 20<sup>th</sup> century.

While LaFree (1998) limits his analysis to the United States, he suggests that similar patterns may have been present across other advanced nations. In subsequent work, he has found evidence of "elite convergence" between the structural predictors of homicide rates across highly-developed Western democracies (LaFree, 2005). It is plausible that similar patterns of institutional decline contributed to the cross-national the rise in homicide rates documented in previous research (Eisner 2008; LaFree and Drass 1998; Rosenfeld and Messner 2009; Van Dijk et al. 2012). However, due to the lack of empirical testing of

LaFree's (1998) theoretical arguments in cross-national research (cf. Messner et al. 2011), it is still unclear if a decline in institutional legitimacy can explain the post-World War II crime wave across economically-advanced Western democracies.

The current chapter addresses this limitation in the literature, assessing whether variation in homicide rates over the past few decades can be attributed to shifts in institutional legitimacy. In an examination of variation in homicide rates from 1962 through 2005, the current study assesses the impact of proxy measures of institutional legitimacy identified by LaFree in his previous research and theoretical statements (LaFree 1998; LaFree and Drass 1997). This examination of crises in political, economic and familial institutional legitimacy across 22 highly-developed Western democracies serves as a the only comprehensive test of LaFree's (1998) ideas in a cross-national sample. Before transitioning to this empirical examination, LaFree's original arguments are outlined below.

#### **4.2 Crime Trends in Relation to Institutional Legitimacy in the United States**

To begin, LaFree (1998) divides the post-World War II period in the United States into three periods. First, during the period immediately after World War II, major institutions enjoyed a great deal of support, contributing the lowest rate of homicide during the 20<sup>th</sup> century in the United States (Zahn and McCall 1999). This period (1946-1960), is often portrayed as a tranquil period in United States history. A strong economy, trust in the government, and the acceptance of the traditional patriarchal family functioned to reduce violent crime. However, the underlying tensions of racial and gender oppression boiled below the surface. On the horizon, the impossible demands of "traditional" patriarchal family



(Coontz 1992), historical and ongoing racial discrimination and injustice, and rising rates of inflation and income inequality led to an unprecedented rise in street crime (LaFree 1998).

In the second period (1961 through 1973), major social institutions in the United States suffered a crisis of legitimacy as they “lost their moral validity” (LaFree 1998: 95), leading to a spike in crime that perplexed criminologists (Wilson 1975). The spike in crime coincided with improving material conditions for many United States citizens. In fact, anti-poverty programs and civil rights legislation appeared to be positive steps toward reducing poverty and inequality, thought to be the “root causes” of crime (Wilson 1975). Instead, civil unrest reflected the continuing state of racial and gender inequality in the United States that has yet to be rectified. Rising aspirations, rather than declining material situations, caused many to perceive major social institutions in the United States to be unfair.<sup>9</sup> Exposed as unequal, corrupt or ineffective, the polity, economy, and patriarchal family lost legitimacy in the eyes of many citizens, reducing the ability of these institutions to control violent crime. During this era, the homicide rate in the United States more than doubled (LaFree 1998).

Finally, the late post-war period, identified by LaFree (1998) as spanning from 1973 to the 1990s, is characterized by relatively high, yet stable, rate of crime. During the middle post-war period (1961 to 1973) and extending into the mid-1970s and 1980s, there was an attempt by government officials to curb excessive criminality. LaFree (1998) focuses on the increasing role of the criminal justice system in curbing rates of crime, as the increased use of incarceration and a growing police force were used to strengthen formal mechanisms of social control. Additionally, increased spending on educational and welfare institutions are

---

<sup>9</sup> For a theoretical framework that explores the role of moving from extreme levels of inequality (or “control imbalance”) toward moderate levels of inequality as contributing to increases in predatory crime, see Tittle’s (1995) “Control Balance” Theory.

linked to the stagnating rates of crime in the period between 1973 and the 1990s. As LaFree (1998) writes:

To shore up political institutions, American society funded increases in criminal justice spending; to reduce the deleterious consequences of a rapidly changing economy, American society spent more on welfare; and to help support the declining family institutions, American society invested heavily in education. (p. 152)

LaFree (1998) attributes these various institutional strategies as a “carrot and stick” approach to reducing crime among the most disadvantaged communities.

Although published in 1998, it is unclear whether LaFree (1998) addresses the decline in crime rates in the United States (beginning in the early 1990s). This fourth post-World War II period is characterized by a sustained decline in crime throughout the 1990s and into the early 21<sup>st</sup> century. LaFree (1998) identifies the (third) period after 1973 as a period of a plateau and stagnation in the rates of crime, but that period is followed by a steady decline in violent crime that spans more than a decade, sometimes referred to as the “great American crime decline” (Zimring 2007). Overall, LaFree (1998) provides a convincing argument concerning the crime increase of the 1960s and 1970s, but his thesis less clearly addresses the crime decline of the 1990s.

LaFree (1998) focuses on three major social institutions: the polity, the economy and the patriarchal family. Beginning with the decline of political institutional legitimacy, LaFree highlights the turmoil during the 1960s and 1970s that led many Americans to lose faith in their government. There is evidence that the government lost legitimacy during the 1960s and 1970s, including overall declines in trust in government (LaFree 1998; Roth 2009) and political protest (LaFree and Drass 1997) due to continuing racial and gender oppression as well as the Watergate Scandal and an unpopular war in Vietnam.

During the same time period, LaFree (1998) argues that the legitimacy of the economy declined as well. Rising median incomes throughout the 1960s contradict the idea that absolute deprivation is responsible for rising homicide rates. Instead, *relative* deprivation is hypothesized to de-legitimize economic institutions, as relative unfairness and the discrepancy between expected and achieved outcomes motivate individuals to turn to crime. LaFree (1998) claims that a sense of unfairness causes individuals to be less compliant with mainstream social institutions, weakening informal social control mechanisms. To support these claims, LaFree argues that rising rates of income inequality coupled with rising rates of inflation brought about higher rates of crime due to perceptions of unfairness.

The final institutional decline that LaFree (1998) notes is that of the patriarchal family. The patriarchal family, exemplified by the phrase “father knows best” evident during the 1950s, began to crumble under increasing feminist protest as well as the decline of well-paying blue-collar jobs for men and increasing female labor force participation (see also Messner et al. 2011). As this form of the family lost its moral validity, the attachment children had to parents (i.e. Hirschi’s (1969) social bonds), socialization, and direct supervision of juveniles faltered (LaFree 1998). In summary, LaFree theorizes that political, economic and familial institutions lost legitimacy due to the specific historical context of post-World War II America, contributing to a severe spike in rates of violent crime beginning in the 1960s.

### **4.3 Protest, Political Legitimacy and Violent Crime**

While LaFree (1998) outlines a plausible account of the post-World War II increase in crime, there are several theoretical and empirical challenges. Central to the purported link

between declining political legitimacy and crime is the conceptualization of the causes and consequences of political protest. Prior to the 1960s, instances of protest were largely interpreted as fitting into a “social disorganization” framework, where both the expression of discontent through political protest and participation in crime were seen as two sides of the same coin (LaFree 1998; McVeigh 2006). However, theoretical development after the Civil Rights Movement of the 1960s increasingly separated issues of social disorganization and political protest, stressing the importance of resources, planning and strategies employed by actors attempting to create social change through social activism. This “resource mobilization” perspective (see Jenkins 1983) extricated itself from issues of criminality, focusing instead on the organization and planning of activists attempting to create social change (LaFree 1998; Oliver 2008).

Given the discrepancy between a social disorganization and resource mobilization interpretations of political protest, it is unclear how to conceptualize the role of protest in relation to political legitimacy and crime. Is political protest an expression of waning political legitimacy? The social disorganization approach proposes a straightforward link between protest and declining political legitimacy. While protestors and criminals may be drawn from entirely different populations (LaFree 1998), increases in protest are interpreted as an indicator of waning political legitimacy. The implication here is that protest and crime are related temporally or are influenced by similar social conditions (McVeigh 2006), but protest does not cause crime (or vice-versa).

If a strict resource mobilization interpretation of protest is adhered, the legitimacy-protest-crime relationship is less clear. One possibility is that political protest, political legitimacy and crime are largely unrelated phenomena. Any temporal relationship between

these phenomena is simply an illusion. However, this interpretation is belied by recent research on the spatial correlates to activism and crime (McVeigh 2006) as well as statements arguing that the boundary between crime and protest has been too rigidly drawn within the resource mobilization perspective (Oliver 2008). Additionally, under some conditions, political protest and crime are related (LaFree and Drass 1997; McVeigh 2006).

A more complete depiction comes from conceptualizing the relationship among protest, political legitimacy and crime as a process. Beginning with the motivation for protest, relative deprivation is linked with dissatisfaction with prevailing social conditions (Gurr 1970; McVeigh 2006). However, under most circumstances, even heavily exploitative or unequal systems will receive support as members from disadvantaged groups often justifying the “system” as acceptable or even necessary (Jost et al. 2003, 2004). Therefore, inequality is a necessary (Gurr 1970; McVeigh 2006), but insufficient (Jost et al. 2003, 2004), precondition for protest. However, if activists successfully organize an anti-systemic movement, framing social inequalities as unacceptable and questioning the practices of the government and its officials, political legitimacy may decline as a result. By mobilizing resources and amplifying discontent, protests themselves may contribute to declines in political legitimacy (Jost et al. 2003, 2004). The subsequent decline in political legitimacy then contributes increasing rates of violent crime. Therefore, it is plausible that protest initially contributes to declines in political legitimacy, which correspond with subsequent increases in crime.

Linking protests to declines in political legitimacy and to increases in rates of crime is still tenuous. In fact, in previous cross-national research on the relationship between the number of individuals participating in social activism and rates of crime suggests that

participation in protest is *negatively* associated with homicide rates in cross-sectional research (Robbins and Pettinicchio 2011). This disparate finding suggests that the protest-legitimacy-crime relationship is dependent upon social context rather than universally applicable. As protest becomes more common and less disruptive (Van Aelst and Walgrave 2001), activism may be an indicator of civic engagement rather than a threat to political legitimacy. This may account for previous findings by LaFree and Drass (1997), wherein crime was positively associated with the protest during the 1960s in the United States, but negatively associated with crime thereafter. As political protest becomes a more common and a seemingly normal part of democratic society (Van Aelst and Walgrave 2001), the association(s) between political protest, declining political legitimacy and rising rates of violent crime should become less apparent.

Empirically, the implication of the preceding discussion is that protest contributes to declines in political legitimacy. Therefore, following LaFree's (1998) thesis that crises in political legitimacy contribute to increases in rates of street crime, we should observe increases in violent crime in the years *after* political protests. Contradicting a strict social disorganization conceptualization of protest (LaFree 1998; Oliver 2008), protest is not conceptualized as a direct consequence of declines in political legitimacy. Instead, activists assist in changing public opinion by organizing social movements, contributing to a narrative that delegitimizes current social practices and social institutions. Individuals from marginalized social groups may be more receptive to arguments de-legitimizing the status quo, causing some marginalized individuals to (more) fully withdraw their support from political and economic institutions.

#### 4.4 Previous Research

Few scholars have directly assessed the theoretical claims of LaFree (1998). However, scholars have examined some of the measures that LaFree used as proxies of crises in institutional legitimacy. A crisis in political legitimacy, operationalized by LaFree as trust in government or political protest (LaFree and Drass 1997), has not been adequately addressed in the cross-national literature. Roth (2009) draws on the same public polling data evidence as LaFree (1998), noting that declines in trust in government correspond with higher rates of homicide. However, beyond evidence of rises in crime related to sudden changes in political organization (Chu and Tsalem 2013; Kim and Pridemore 2005; LaFree and Tseloni 2006; Stamatel 2009), few scholars have examined the impact of temporal crises in political legitimacy and crime rates in the cross-national literature.

In previous cross-national research, there is limited support for the hypothesis that declining legitimacy of the patriarchal family contributed to increases in crime. In the only direct examination of LaFree's (1998) arguments in a cross-national sample, Messner and colleagues (2011) find that a crisis in familial institutional legitimacy contributed to increases in homicide rates. Conceptualizing increases in the divorce rate as evidence of a decline in the patriarchal family, Messner and colleagues (2011) find that increases in divorce are associated with increases in the homicide rate in a sample of 34 nations from 1950 to 2005. However, in a smaller sample of Eastern European nations, Stamatel (2009) finds no relationship between temporal shifts in the divorce rate and rates of crime. Although divorce is often positively associated with in cross-sectional, cross-national rates of homicide (Nivette 2011), it is still unclear if temporal trends in divorce rates have a consistent impact on rates of crime.

Finally, there is indirect evidence that crises in economic institutional legitimacy contribute to increases in crime. LaFree (1998) identifies two indicators of declining economic institutional legitimacy: increases in rates of consumer inflation and income inequality. Beginning with income inequality, there is considerable evidence that nations with higher rates of income inequality have higher rates of homicide (LaFree 1999a; Nivette 2011). However, this relationship is less clear in longitudinal research. For example, in cross-national samples, Neumayer (2003) finds no significant relationship between income inequality and homicide rates while Jacobs and Richardson (2008) find a positive association between income inequality and homicide. In relation to consumer inflation and crime, a limited body of research using cross-national samples is generally supportive of the hypothesized relationship between higher rates inflation and homicide (McCall and Brauer 2014; Rosenfeld 2014).

#### **4.5 Hypothesis**

The current analysis examines the relationship between temporal crises in institutional legitimacy and violent crime. Based upon LaFree's (1998) arguments, the main hypothesis tested in this chapter is *temporal crises in institutional legitimacy contribute to higher rates of violent crime*. Three institutional domains (political, economic and familial) are assessed in relation to violent crime (homicide rates) in this chapter, therefore three sub-hypotheses are analyzed. Beginning with political legitimacy, (1) higher rates of protest are hypothesized to be associated with higher rates of homicide. Both the contemporaneous and lagged effect of political protest are assessed to explicate the temporal relationship between protest and variation in violent crime. As for economic legitimacy, (2) rising rates of



consumer inflation and income inequality are hypothesized to reduce the legitimacy of mainstream economic institutions, causing individuals to perceive economic institutions to be unfair or ineffective (LaFree 1998; Rosenfeld 2014). Finally, following previous research (Messner et al. 2011), (3) the rate of divorce is hypothesized to be an indicator of declining legitimacy of the patriarchal family (LaFree 1998), contributing to higher rates of violent crime.

## 4.6 Data and Methods

### Sample

To test the hypotheses on temporal crises of institutional legitimacy, I utilize longitudinal and cross-national rates of homicide. While LaFree (1998) provides evidence to support his assertions regarding institutional legitimacy in the United States, his claim that similar patterns occurred across advanced nations during the same historical period has rarely been assessed (cf. Messner et al. 2011). To address this claim, I analyze data representing 22 nations from 1962 through 2005. To approximate LaFree's (1998) classification of "advanced" nations, countries are selected for this study based on their inclusion in the OECD during the 1960s and 1970s. In total, there were 24 nations in the OECD during this period. However, two of these 22 nations are excluded. Germany is excluded due to shifts in its geographical borders during the period under study (1962 to 2005). Turkey is excluded due to insufficient data prior to the 1990s.<sup>10</sup>

This sample shares many of the same limitations of extant cross-national studies in terms of relatively small sample size (Nivette 2011). Because nations are purposely sampled

from highly-developed democracies, the results of this analysis are unlikely to be generalizable to other national samples. The major advantage of this sample is that scant previous research includes a relatively long time-series while including annual estimates of independent and dependent variables (see Messner et al. 2011 for an exception). Data are compiled from several sources including multiple sources, including the United Nations (UN), the World Bank, World Health Organization (WHO) and the Standardized World Income Inequality Database (Solt 2016).

### **Dependent Variable**

Ideally, I would analyze several types of street crime (LaFree 1998), but the definitions, measurement, and data collection on rates of (non-lethal) assault, rape, burglary, and robbery are dubious in cross-national analysis (Neapolitan 1997a), limiting this study to rates of homicide. Homicide rates are considered to be the most reliable indicator of violence crime in a cross-national context. Comparable cross-national homicide statistics are typically derived from three sources: INTERPOL, the WHO, and the UN Office of Drugs and Crime. For the current study, mortality data are derived from the WHO Mortality Database (WHO 2015) because (1) it is the only homicide dataset providing annual data spanning back to the 1960s and (2) it is the most reliable source of homicide data among the three sources, using an unambiguous classification of homicide deaths (Kalish 1988; Neapolitan 1997a; LaFree 1999b). Homicide data represent the 7<sup>th</sup> (E980-E985), 8<sup>th</sup> (E960-E969), 9<sup>th</sup> (E960-E969) and 10<sup>th</sup> (X85-Y09) International Classification of Disease (ICD) for deaths by assault.

---

<sup>10</sup> The 22 nations included in this study outlined in this chapter are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom and the United States.

In general, the mean homicide rate for these 22 nations increases from the mid-1960s until 1991 when it peaks at nearly 2 homicides per 100,000, nearly twice the rate of the lowest mean in 1963 (less than 1.1 per 100,000) (see Figure 5). From 1991 until 2005, the homicide rate falls precipitously. The lowest homicide rate recorded by any nation during this period is found in several observations in Iceland where zero homicides occurred. The highest rate of homicide is 10.44 per 100,000 population, recorded in the United States in 1980. Although WHO homicide data is available prior to 1950 for some nations, data limitations and transformations in the data (first-differencing and second-differencing) limit the time series to the period 1962 to 2005.

The WHO (2015) includes the number of deaths by assault (homicide) recorded in coroners' reports in each country in a given year, which are then divided by the total population of a given country and multiplied by 100,000 for standardization. The population data used for standardization are derived from various UN Demographic Yearbooks (United Nations 2014). While cross-national research on homicide often includes an arithmetic transformation (typically the natural logarithm) of the dependent variable because homicide is a rare event and the sample distribution is often skewed, initial tests do not indicate issues with heteroscedasticity for this sample of nations, especially after using first-differencing techniques. To limit statistical noise, a three-year moving average of the homicide rate is computed as the dependent variable.

### **Independent Variables**

To address crises in political institutional legitimacy, the proxy measure is the number of protests in a given year. This measure is derived from research conducted by the

Cline Center for Democracy (2015). To compile this measure, researchers combine information from multiple publications, including the New York Times, Wall Street Journal, Broadcast Information Service, and the Summary of World Broadcasts, recording “destabilizing events.” These events include instances of political expression (protests), politically motivated attacks, disruptive state acts (use of extraordinary state power or repressive use of state powers) and extraordinary state acts (including the imposition of a curfew, martial law, or even a dissolution of the government). Each of these acts utilizes violence, force, and/or pressure outside of normative and legal practices, suggesting compromised legitimacy of the government. However, acts of political protest is of particular interest, as protest is most clearly linked to declines in political legitimacy in previous theoretical accounts (LaFree 1998) and prior research (LaFree and Drass 1997). Therefore, the number of annual protests (standardized by population size) is used as an indicator of declining political legitimacy.

While previous research has utilized similar measures of protest and civil unrest data in relation to rates of crime within the United States (LaFree and Drass 1997), there are limitations to this type of data. First, data collected on acts of civil unrest are always incomplete. Not every protest is recorded. Second, media coverage of some types of civil unrest may be systematically under or over-reported (Cline Center for Democracy 2015). Third, it is unclear in the Cline Center for Democracy (2015) data whether the absolute level of civil unrest can be compared across nations. The researchers use two publications originating in the United States (the New York Times and the Wall Street Journal), creating the possibility that other countries in the sample are less systematically covered. Despite these potential limitation, these data have been utilized in previous cross-national research

(see Nardulli, Peyton and Bajjalih 2015) and the method used in the present study examines within-country variation, which mitigates this issue somewhat. However, the findings of this study still need to be interpreted with caution.

Protest data are standardized using United Nations (2017) population data. Protests are expressed as the number of protests per 1,000,000 population. To reduce statistical noise, as protests are relatively rare events in several nations, the three-year moving average of protests per 1,000,000 population is used in the following analysis. As depicted in Figure 6, rates of protest were typically highest in the 1960s and 1970s, generally dropping off thereafter.

To address economic institutional legitimacy, I utilize the same indicators highlighted by LaFree (1998) in his analysis of the decline of economic legitimacy in the United States. A measure of consumer inflation is used to capture loss of economic legitimacy. This measure is derived from the World Bank (2017d) from 1962 to 2005. Similar measures have also been utilized in cross-national homicide research estimating the effect of economic strain across time (McCall and Brauer 2014; Rosenfeld 2014).<sup>11</sup> Additionally, I utilize annual estimates of the Gini coefficient to measure income inequality, consistent with LaFree's (1998) arguments. Gini coefficients are derived from The Standardized World Income Inequality Database (Solt 2016). This dataset has the advantage of relatively complete income inequality data, as missing data plagues researchers attempting to estimate the effect of income inequality. Solt (2016) derives and utilizes several well-established measures (World Bank, Luxembourg Income Study Database, etc.) of the Gini index to

---

<sup>11</sup> Prior to 1980, the World Bank (2017d) does not have estimates for consumer inflation in the United Kingdom. These data are derived from the Bureau of Labor Statistics (2017). The definition of these data is the "percentage change in consumer price indexes," which corresponds closely with measures of consumer inflation

calculate a single Gini index by using advanced data imputation techniques to fill in missing data points.

Finally, to examine decline in the legitimacy of the patriarchal family, I construct a crude divorce rate (divorces per 1,000 in the population) using United Nations (2014) Demographic Yearbook data. The United Nations (2014) database contains the largest and most comparable divorce and marriage data available to cross-national researchers (Greenstein and Davis 2006). The use of the divorce rate to indicate a decline in the legitimacy of the patriarchal family is consistent with previous cross-national previous research (Messner et al. 2011).

### **Control Variables**

Additional variables are employed to control for known correlates of homicide, including GDP per capita (World Bank 2015b) to control for “modernization” (LaFree and Tseloni 2006) as well as economic downturns (Tuttle 2018), and infant mortality rates (World Bank 2017c) to control for relative affluence/poverty (Pridemore 2008). Criminologists often account for age structure in cross-national analysis because youth commit a disproportionate amount of crime (Hirschi and Gottfredson 1983). Therefore, population data are also derived from the UN Demographic Yearbook (2014) to account for the population structure, specifically, the percentage of the population between the age of 15 and 29. Finally, an additional population composition control is used to account for urban/rural composition of the population. The percent living in an urban area, derived from

---

(.997) across the 18 nations included in both the World Bank (2017d) and Bureau of Labor Statistics (2017) reports.

the World Bank (2017b), is used to control for the urban nature of crime (Wirth 1938). See Table 5 for descriptive statistics.

### **Preliminary Analyses**

A frequent concern in multivariate regression analyses are issues associated with collinearity, especially in aggregate research (Land et al. 1990). To begin assessing the data for estimation problems with collinearity, bivariate correlations are explored among the independent variables for relatively strong relationships, displayed in Table 6. Bivariate correlations do not indicate serious potential issues with collinearity, as the strongest correlation among independent variables is between GDP per capita and infant mortality rate (-.63). To further examine potential issues of collinearity, variables are systematically entered into nested models to explore substantive changes across models (analyses not shown) and the variance inflation factor (VIF) are reviewed for values exceeding four. No significant issue with collinearity is apparent in the data.

These hypotheses are tested using pooled fixed-effects OLS regression modeling. Fixed-effects modeling is the appropriate technique for these analyses as central theoretical question is whether temporal crises influence variation in the homicide rate. Fixed-effects regression techniques also hold an advantage among the majority of statistical techniques examining variation over time, as this statistical procedure accounts for all unobserved nation-specific variation. That is, fixed-effects techniques more efficiently account for unobserved heterogeneity, which is a concern in cross-national analyses. Accordingly, this technique also reduces issues associated with omitted variable bias.

Before conducting the statistical analyses, certain data transformations and preliminary statistical tests are necessary for longitudinal fixed-effects modeling. To begin, strategies for handling missing data are explored. While the analyses can be conducted despite missing observations, scholars using similar analytical techniques have often attempted to acquire complete data (Rosenfeld and Messner 2009; Savage, Bennett and Danner 2008). Overall, of the 968 country-year cases, there were 118 incomplete cases (12% of the total). To address missing data, multiple imputation techniques are often applied (Allison 2002). However, longitudinal data pose special problems when using multiple imputation techniques, as the process works more effectively with “wide” (e.g. countries are the unit of analysis) rather than “long” (e.g. country-years are the unit of analysis) datasets utilized in time-series analysis (Lloyd et al. 2013). Because of the small sample of countries included in this analysis, multiple imputation techniques, which are preferred in social science research (Allison 2002), are not appropriate as the models will not converge on an estimate as there are too few cases (countries).

An alternative strategy to impute missing cases is stochastic regression imputation (see Gold and Bentler 2000). The first step in this process is estimating regression models for data with missing observations that are selected as the dependent variable using truncated multiple regression. This truncated regression procedure limits possible outcomes to a pre-defined range (in this case, the range of observed values of each respective year). Truncated regression also reduces the likelihood of the estimate for missing data falling outside the bounds of observable data (such as generating negative values when valid cases only include positive values). In a subsequent step of stochastic regression imputation, the predicted values of these truncated regression results are used and augmented with residual statistics to



produce an imputed value. To better approximate the (missing) values of the time series, these stochastic regression estimates for each year are then combined with estimates of all missing cases using simple linear interpolation for each missing data point in a separate procedure. The final imputed data points represent the mean of the (annual) stochastic regression imputation values and the values produced using linear interpolation.<sup>12</sup>

Additionally, longitudinal analyses require time series to be stationary. Problems with non-stationarity can significantly bias the results. To test for non-stationarity, a Dickey-Fuller test is used to examine the time series of each individual country. These tests indicate that there is evidence of non-stationarity within the time series. To address this issue, the data are transformed through “first-differencing” the time series. The first-differencing procedure involves subtracting each observation from the observation of the previous year ( $y_t - y_{t-1}$ ) (see Rosenfeld and Messner 2009 for a similar procedure). While first-differencing was partially successful in making the time-series stationary, changes in percent urban and infant mortality rates still presented evidence of non-stationarity. Therefore, a second-differencing procedure was performed for the percent urban and the infant mortality rate. After this procedure, the time-series was stationary according to a Dickey-Fuller unit root test. The first and second-differencing procedures shortened the time period under study by two years as the original series spanned from 1960 to 2005.

Finally, before estimating the fixed-effects regression models, the appropriate lag structure of the effect of protest on homicide needs to be modeled. A series of regression models (not shown) indicate that protest has its greatest impact on the homicide rate two to

---

<sup>12</sup> For the early years of this time series missing data for multiple variables were common across nations. To complete the stochastic regression imputation procedure, multiple models were estimated. These models did not include all variables, as no estimates are produced if there are missing observations among the independent

three years later, with the strongest impact occurring in a two-year lag. The subsequent models are estimated displaying both the contemporaneous and two-year lagged effect of protest on homicide rates. To control for potential issues of autocorrelation of errors and heteroskedasticity, robust standard errors are used in all analyses. All fixed-effects regression models presented below control for nation fixed-effects, country-specific trends, common linear trend and period effects (see Rosenfeld and Messner 2009).

#### 4.7 Results

The results of four pooled OLS fixed-effects regression models are presented in Table 7. In Model 1 of Table 7, the estimated impact of the independent variables on the three-year moving average of homicide rates across the 22 countries are presented. Consistent with theoretical predictions, the contemporaneous three-year moving average of protests per 1,000,000 is positively associated with homicide rates ( $p < .01$ ). Additionally, the percentage of the population aged 15 to 29 is positively associated with homicide rates ( $p < .05$ ). However, contrary to previous research and theoretical predictions, both income inequality ( $p < .05$ ) and the infant mortality rate ( $p < .01$ ) are negatively associated with homicide rates. Model 2 of Table 7 indicates substantively the same results as Model 1 when the impact of protest is estimated with a two-year lagged effect, as protests have a significant impact on homicide rate in both the contemporaneous year (Model 1) and lagged by two years (Model 2).

The contrary findings for the impact of income inequality on homicide rates, however, appear to be due to overly influential outliers in the sample. Several country-year

---

variables. Additionally, linear extrapolation (rather than linear interpolation) using the two closest observed data points was conducted in cases where missing data was present at the beginning or end of a time series.

observations within two nations, the United States and Iceland, exceeded the conventional “cut-off” point using Cook’s Distance diagnostic statistics for influential outliers. To address this issue, observations for the United States and Iceland are eliminated from subsequent models. After these nations are eliminated, there are 20 remaining nations with 880 country-years in total.

In Model 3 of Table 7, the results of a subsequent OLS fixed-effects regression estimation are displayed after eliminating these influential outliers. It is apparent that country-year observations in the United States and Iceland had undue influence on the results, as income inequality is no longer (negatively and significantly) associated with homicide rates in Model 3 and inflation is positively associated with homicide rates ( $p < .05$ ), consistent with theoretical predictions. Additionally, the percent of the population aged 15 to 29 is no longer significant at the .05 level but approaches statistical significance in the posited direction ( $p = .10$ ). However, homicide rates are not significantly associated with protests per 1,000,000 in the contemporaneous year and are still negatively (and significantly) associated with the infant mortality rate ( $p < .01$ ) after eliminating the influential outliers. Divorce, percent urban and GDP per capita are not significantly associated with homicide rates in any of the models displayed in Table 7. The unexpected finding that infant mortality rates are negatively associated with homicide rates are discussed in greater detail in the Discussion and Conclusion section. In Model 4 of Table 7, the impact of two-year lagged protest rate is positively and significantly associated with the homicide rate ( $p < .05$ ), while the other results in Model 4 are substantively identical to Model 3.

## Supplemental Analyses

An issue that warrants further exploration is whether the findings of this study are sensitive to distinct eras. There is some indication that the effect of protest on crime is sensitive to specific eras rather than constant across decades (LaFree and Drass 1997). To determine if the impact of protest is sensitive to era selection, supplemental analyses displayed in Table 8 reflect truncated time-periods, splitting the time series into three periods. The first period represents the period in which the mean homicide rate is rising for the 22 nations in the full sample (1962 through 1980). The second period, marked by high, but a relatively stagnate, mean rate of homicide is also analyzed (1981 through 1991). The third period (1992 through 2005), marked by a steady decline in homicide rate, is analyzed in the final model. These distinct periods roughly align with two of the periods conceptualized by LaFree (1998): the second and third post-World War II period of rising and then stagnating rates of crime. The final period roughly corresponds with the American crime decline (Zimring 2007).

The results of these supplemental models, which examine the sample of the 20 remaining nations after eliminating the outlying cases of the United States and Iceland, are located in Table 8. In Model 5 of Table 8, representing the era of rising homicide rates between 1962 and 1980, only two findings either approach or achieve statistical significance. Homicide rates are positively associated with the two-year lag of protests per 1,000,000 ( $p = .08$ ) and negatively associated with the infant mortality rate ( $p < .01$ ) in Model 5. In Model 6, representing the era of stagnating homicide rates between 1981 and 1991, protests per 1,000,000 and infant mortality rate are not significant predictors of the homicide rate. Instead, the homicide rate is positively associated with inflation ( $p < .05$ ) and percent urban

( $p < .05$ ) and negatively associated with the divorce rate ( $p = .09$ ), contrary to theoretical expectations (see Messner et al. 2011). In the final time period (1992 through 2005), displayed in Model 7 of Table 8, the only association with homicide rates approaching statistical significance is the two-year lag of protests per 1,000,000 ( $p = .08$ ).

#### **4.8 Discussion and Conclusion**

Overall, the results of these analyses provide partial support for LaFree's (1998) claim that crises in institutional legitimacy contribute to rises in street crime. Specifically, there is evidence that a crisis in political legitimacy, measured as rates of political protest, across these 22 OECD nations contributed to rising homicide rates. Additionally, there is also evidence that a crisis in economic legitimacy, marked by increasing rates of consumer inflation, contributed to the rise in homicide rates across Western democracies. However, contrary to previous research (Messner et al. 2011) and theoretical predictions (LaFree 1998), the crisis in the legitimacy of the patriarchal family did not appear to be significantly associated with homicide rates across the entire time period spanning from 1962 through 2005 (Model 2 of Table 7) and was even negatively associated with homicide rates in the period of stagnating homicide rates (Model 4 of Table 8).

Beginning with crises in political legitimacy, this study provides evidence that political protest contributes to increases in violent crime (specifically: homicide) over subsequent years. While direct measures of political legitimacy are not available during this time period, the apparent association between the two-year lagged impact of political protest on homicide rates are consistent with the argument that protests have an adverse impact on political legitimacy, leading to increases in violent crime. Contradicting the pure social

disorganization conceptualization of protest and crime (see LaFree 1998), there is no significant relationship between the rate of protest and homicide in the contemporaneous year after influential outliers are eliminated (Model 3 of Table 7). Instead, the rate of political protest exerts a significant impact on the homicide rate two years after increases in the protest rate (Model 4 of Table 7). This is consistent with the interpretation that as activists promulgate discontent with government policies, practices and actors, citizens predisposed to legal cynicism (Sampson and Bartusch 1998) further withdraw support from political institutions. However, further research is needed to explicate the relationships among political protest, political legitimacy and violent crime.

Additionally, declines in economic institutional legitimacy appear to be linked to rising rates of homicide during the second half of the 20<sup>th</sup> century. While income inequality was not a significant predictor of homicide rates among this sample of advanced nations, rising rates of inflation correspond with rising rates of homicide during this period. Higher rates of consumer inflation are hypothesized to threaten economic institutional legitimacy as citizens perceive the official economy to be either unjust or ineffective as working-class paychecks buy fewer goods and services as rates of inflation rise. The rise in inflation is hypothesized to drive more individuals to find alternative, and sometimes illegal, sources of income (LaFree 1998), potentially leading to an expansion of the shadow economy or black market (Rosenfeld 2014). Overall, there is support for the claim that the official economy lost legitimacy as it was no longer able to provide for people's needs, causing some individuals to withdraw support and take part in the shadow economy, leading to increases in violence (see Chapter 3).

In addition to these essentially supportive findings for ILT, some of the results were contrary to theoretical expectations. Most notably, divorce rates, the proxy measure of the legitimacy of the patriarchal family, are not a predictor of with homicide rates in the full model (Model 2 of Table 7) and are even *negatively* associated with homicide rates during the 1981 through 1991 period (Model 4 of Table 8). These findings contradict claims made by LaFree (1998) as well as previous cross-national research on a similar time period (Messner et al. 2011). It is unclear why divorce rates are not positively associated with rates of homicide in this study.

There are two distinct possibilities to explain the disparate finding between divorce rates and homicide rates in this study. First, the model specification in this study may differ from previous research on divorce during a similar time period. It is unclear whether Messner and colleagues (2011) adequately control for common linear trend, country-specific trends and period effects as were accounted for in this study (see Rosenfeld and Messner 2009). Before including these statistical controls, divorce rates were positively and significantly associated with homicide rates in during the period under study (1962 through 2005) (results not shown). Second, the positive association between divorce and homicide during the middle period (1981 through 1991) may be driven, in part, by the timing of increases in social welfare expenditures. There is some indication that nations with higher rates of divorce were also earlier adopters of social welfare expenditures for families in need (Tepe and Vanhuyse 2010). Countries such as Canada, Denmark, Norway, Sweden and the UK adopted more generous social welfare programs in the 1970s and early 1980s. Later adopters of family welfare benefits, waiting until the late 1980s and early 1990s (Greece, Ireland, Italy, Portugal and Spain), tend to have lower rates of divorce. It is plausible that the negative

relationship between divorce and homicide is due to this (unmeasured) temporal variation in social welfare expenditures, which are negatively associated with homicide rates (McCall and Brauer 2014; Pratt and Godsey 2003; Tuttle 2018). Unfortunately, missing data in early segments of this time period prevented inclusion of social welfare expenditures in these analyses (see also, Messner et al. 2011). However, evidence for this argument is included in Appendix B, as social welfare expenditures (OECD 2017) are negatively associated with homicide rates during the era with available data (1983-2005), exerting an impact in a three-year lag, consistent with previous research (McCall and Brauer 2014; Tuttle 2018).

There are some additional concerns with using divorce to capture a decline in the legitimacy of the patriarchal family. Despite being the most valid and reliable measure of marriage and divorce across nations (see Greenstein and Davis 2006), United Nations (2014) data can be prone to inaccuracies. As only official divorces are captured, the dissolution of a family due to separation (but not divorce) is not captured. Also, there are other reasons for rising rates of divorce than declining support. As Coontz (1992) highlights, marriage and divorce are supported by support from the government and the availability of high-wage working-class jobs. Until we have a more direct measure of legitimacy of the patriarchal family based on perceptions, the impact (or lack thereof) of divorce on homicide will have to suffice as a rough measure of this theoretical concept.

An additional unexpected finding is the negative association between the infant mortality rate and the homicide rate, contrary to previous research (Pridemore 2008). This association was most prevalent in the early years of the period under study (1962-1980), corresponding with Wilson's (1975) claim that the "root causes" of crime (poverty) were being addressed during the period, yet rates of crime continued to rise. One possibility for the



unexpected negative association between homicide and infant mortality is due to a factor that was not included in this study: women's empowerment. While divorce rates were intended to capture a decline of the patriarchal family, women's empowerment during the early part of this period (1962-1980) likely led to declines in fertility and unwanted pregnancy (Upadhyay et al. 2014), contributing to a decline in infant mortality (Trussell and Pebley 1984). The increase in women's empowerment is plausibly associated with (initial) increases in homicide rates, as more women working outside the home could have contributed to declines in juvenile supervision (LaFree 1998) and increases in women's exposure to motivated offenders (Cohen and Felson 1979). Increases in women's empowerment and employment could also contribute to a backlash their gains in autonomy and power, provoking men to become more violence toward their female partners as women became more financially independent (Avakame 1999). Future research should clarify the mechanisms connecting infant mortality rates and homicide during the 1960s and 1970s.

These findings, inconsistent across time periods, suggest that the factors driving rates of violent crime may be historically contingent, rather than universal. At the very least, the meaning of some of the indicators and their relationships with violent crime do not seem to span the entire period under study (1962-2005). To an extent, LaFree (1998) anticipates this in his discussion on the ability of institutions to change over time and exert social control in a new form. The modernization perspective (Durkheim 1947, 1951; LaFree and Tseloni 2006) stresses rapid change over time, causing institutional legitimacy and norms to decline. Institutions can subsequently re-adjust accommodate new social realities. In future cross-national and comparative scholarship, attention to historical circumstance and meaning from the variables used in statistical models is necessary (LaFree 1999b).

Finally, there were several factors that likely contributed to patterns of crime that I was unable to account for in this chapter. There was not an ideal measure of changing “routine activities” (Cohen and Felson 1979), which may have contributed to fluctuating rates of criminal predation due to shifts in “guardianship” over time. Additionally, a measure commonly accounted for in tests of institutional anomie theory (Messner and Rosenfeld 1994, 1997) is “decommodification” (Esping-Andersen 1990) which has exhibited a significant impact on homicide rates in recent research (Brauer and McCall 2014; Tuttle 2018). Also, given the dramatic impact of crack cocaine markets on violence in the United States (Blumstein and Rosenfeld 1998; Cook and Laub 1998; Wintemute 2006), there may have been an impact of drug markets across these 22 nations not adequately accounted for in this study. Future research should clarify the impact of these factors on homicide rates during the past few decades.

While this chapter provides evidence that crises in political and economic institutional legitimacy contributed to the rise in homicide rate during the 1960s and 1970s, significant questions remain. There was an apparent decline in protest during the 1980s and 1990s in the Cline Center for Democracy (2015) data (see Figure 6), but this is likely not due to a rise in political trust and legitimacy. In fact, more direct measures of political legitimacy have shown declines over recent decades (Dalton 2005). This decline in protest is likely not due to increases in political legitimacy, but an acceptance of protest as a normal part of the democratic process (Van Aelst and Walgrave 2001). Because the Cline Center for Democracy (2015) only counts “disruptive” events (protests), it is plausible that the disruptive nature of protests, not the absolute number of protests, has declined. Confronted with recent research suggesting that the number of activists is negatively associated with

homicide rates (Robbins and Pettinicchio 2011) and research documenting declines in political trust (Dalton 2005; LaFree 1998), it is unlikely that the decline in protest noted in Cline Center for Democracy (2015) data represents an increasing absolute level of political legitimacy. Therefore, it is implausible that the decline in homicide rates across Western during the 1990s democracies (see Eisner 2008; Van Dijk et al. 2012) was due to regaining political legitimacy.

If improving political legitimacy did not occur during the 1990s (Dalton 2005), what explains the drop in violent crime across Western democracies? As highlighted in Chapter 2 (in Figure 3), declines in political legitimacy are often met with rising rates of state repression. A decidedly punitive turn in the administration of justice across Western democracies (see Garland 2001; Pratt 2007) has corresponded with waning trust in political institutions (see Dalton 2005). Due to the lack of annual imprisonment data, especially before the 1990s, a proxy measure of state repression could not be included in this chapter. However, in the next chapter (Chapter 5), rising rates of state repression, as measured by increases in the incarceration rate despite declining rates of crime, are addressed in relation to the decline in homicide rates. Political institutions failed to regain the legitimacy they enjoyed in the 1960s (Dalton 2005; LaFree 1998), but increasingly repressive social control efforts by the state contributed to a decline in homicide rates across Western democracies.

## **CHAPTER 5. THE DECLINE IN HOMICIDE RATES FROM 1993 TO 2005: EXAMINING THE ROLE OF STATE REPRESSION**

### **5.1 Introduction**

The current chapter explores the decline in homicide rates across wealthy democracies during the 1990s and early 2000s, assessing the impact of state repression. During this period, while homicide rates declined dramatically, trust in governance was declining as well (Dalton 2005), indicating it was not improving political legitimacy that caused rates of homicide to decline. Instead, increasingly repressive actions by the state, operationalized as rising rates of incarceration despite a falling rate of crime, is proposed as a factor explaining the declining rates of homicide during the 1990s. As highlighted in Chapter 2's theoretical development of institutional legitimacy theory (ILT), governments balance losses in political legitimacy by increasing state repression to re-exert social control (see Figure 2). This chapter is devoted to understanding the role of increasing state repression in declining homicide rates across 27 OECD nations from 1993 through 2005.

In the 1990s, criminologists were confronted with a unique “murder mystery.” A sudden decline in the homicide rate lead scholars to wonder why the United States witnessed dramatic declines in criminal violence. More than a dozen explanations have been provided for the crime decline (see Baumer 2008; Farrell et al. 2014; Levitt 2004; McCall and Hendrix 2015), but most theories propagated by American scholars highlight policies and historical circumstances specific to the United States, overlooking the reality of a cross-national homicide decline. Political controversies, such as the timing of the legalization of abortion (Donohue and Levitt 2001; Foote and Goetz 2008) or the role of firearm proliferation (Ayres and Donohue 2002; Lott 2013) may seem pertinent to a uniquely American crime decline,

but may have little or no bearing on a crime decline that took place across most highly-developed Western democracies (Eisner 2008; Rosenfeld and Messner 2009; Van Dijk et al., 2012; Zimring 2007). To understand the “international crime drop” (Van Dijk et al. 2012) of the 1990s, scholars must examine potential culprits not confined to circumstances specific to the United States.

One possible explanation of the decline in homicide rates across wealthy democracies is the impact of rising rates of incarceration. Scholars of punishment have highlighted a punitive turn in criminal justice policy, arguing that an increasing demand for harsh sanctions coupled with declining trust in institutional authority led to a steady rise in incarceration rates over the past few decades (Garland 2001; Pratt 2007). Widespread attention has been devoted to the causes and consequences of American “mass incarceration” as rates of incarceration increased by more than 500% from 1970 to 2000 (Alexander 2012; Rose and Clear 1998; Western and Wildeman 2009), but a recent analysis suggests that rising rates of incarceration are common across Western democracies from the 1990s onward (Lappi-Seppälä 2011). From 1992 through 2004, Organization for Economic Co-Operation and Development (OECD) nations experienced a 30% increase in incarceration rates. Even excluding the somewhat anomalous American case, rates of incarceration rose by 28% across these 33 OECD nations.<sup>13</sup> Despite this dramatic trend in criminal justice policy and practice, few have recognized that falling rates of homicide and rising rates of incarceration operated in tandem across many Western democracies during this same period (cf. Buonanno, Drago, Galbiati and Zanella 2011; Rosenfeld and Messner 2009). Does this increasing rate of incarceration account for the decline in homicide rates across Western democracies?

---

<sup>13</sup> These statistics represent data from 34 OECD nations. Latvia is a current OECD member, but was not included in the OECD (2010) report.

The current study addresses whether the punitive turn in criminal justice administration (Garland 2001; Pratt 2007), evidenced by rising rates of imprisonment (Lappi-Seppälä 2011), can explain the decline in homicide rates from 1993 through 2005 across Western democracies. The analysis outlined below examines variation in homicide rates in relation to recent increases in incarceration rates across 27 OECD nations using pooled ordinary least squares (OLS) fixed-effects regression analytic techniques. This study expands the extant literature by examining a larger sample of nations than several previous studies (Buonanno et al. 2011; Rosenfeld and Messner 2009) and more effectively controlling for possible unobserved heterogeneity bias than previous cross-national research on the homicide decline (Baumer and Wolff 2014). Overall, the results below provide evidence that rising rates of imprisonment are partially responsible for the dramatic decline in homicide rates throughout the 1990s and early 2000s across wealthy democracies. Before presenting these analyses, the following sections contextualize the international crime decline, highlighting the causes and consequences of increasing rates of incarceration.

## **5.2 The Rise of Crime and Incarceration**

For most Western democracies, the decline in homicide rates during 1990s was preceded by an unprecedented rise in homicide rates during the 1960s and 1970s. After decades (and even centuries) of declining interpersonal violence, rates of homicide increased across wealthy democracies during the 1960s and 1970s (Eisner 2008; Gurr 1981; Pinker 2011). Based upon the observation that individuals' rates of criminal offending peak in late adolescence and early adulthood (Hirschi and Gottfredson 1983), some scholars attributed the rise in crime to an abnormally large cohort of young adults (the "baby boomers")

reaching this peak criminal offending age (Cohen and Land 1987; Steffensmeier and Miles 1987). However, subsequent scholarship attributes this increase in crime to a more fundamental societal shift during the period, noting social unrest and division (LaFree 1998; Roth 2009), changing lifestyles or “routine activities” (Cohen and Felson 1979) and a “great disruption” in the societal order (Fukuyama 1999). Most pertinent to the subsequent punitive turn in criminal justice policy, political institutions suffered a severe decline in public trust. Scholars have linked waning political legitimacy with rising rates of homicide in the United States (LaFree 1998; Roth 2009). This decline in political legitimacy not only occurred in the United States, but has spanned across Western democracies (Dalton 2005).

As political institutional legitimacy declined and crime rates soared, citizens fearing victimization increasingly demanded more punitive actions against criminal offenders. In defense of a collective risk of victimization and the “public interest,” politicians enacted three strikes, zero tolerance and mandatory minimum sentencing laws in the United States (Garland 2001). In eras past, trust in experts and institutions may have more effectively buffered demands for punitiveness from becoming realized in public policy. However, cynicism concerning institutional authority led to a rejection of the more moderate approaches suggested by “out of touch” bureaucrats and academics (Pratt 2007). Distrust of judicial discretion and the “rehabilitative ideal” (Garland 2001) contributed to harsher sentences and increases in prison populations in Australia, New Zealand, the United Kingdom and the United States (Pratt 2007). As citizens lost trust in their governments (Dalton 2005), began to distrust each other (Putnam 2000) and became preoccupied with the risk of victimization (see also: Beck 1992; Giddens 1991), governments increasingly used

more repressive crime-control techniques, imprisoning large segments of their respective populations in the name of public safety.

It is unclear if this account of the decline of institutional legitimacy and rise in crime (LaFree 1998) explains crime control efforts across all wealthy democracies, but initial evidence suggests similarities. The United States is somewhat of an outlier in terms of imprisonment, as the American war on drugs is a central feature of expanding state repression and mass incarceration (Alexander 2012) may be part of the unique American experience. Other scholars have noted that racial and ethnic minorities across Western Europe are incarcerated at a higher rate as well. Immigration in Western Europe and the subsequent disproportionate incarceration of immigrant populations may have partially driven an increase in incarceration rate trends (see Wacquant 1999b). However, scholars have noted a decline in trust in government over the past few decades across Western nations (Dalton 2005) – a decline which roughly corresponds with rising rates of imprisonment (Lappi-Seppälä 2011). Given the widespread decline of homicide rates (and rates of other crimes) across these nations, *ceteris paribus*, we should expect a decline in new arrests and therefore lower rates of incarceration. This, however, has not been the case. In fact, only two OECD nations, Canada and South Korea, experienced a net decline in incarceration rates from 1992 to 2004 (OECD 2010). Expanding this time-frame to the 17 years between 1992 and 2009, nearly all wealthy democracies exhibited an increase in incarceration rates (Lappi-Seppälä 2011).

The punitive turn in the administration of justice (Garland 2001; Pratt 2007) is quite dramatic considering the falling rates of homicide during the 1990s. Drawing on Nadanovsky and Cunha-Cruz's (2009) conceptualization of an "impunity index" (the homicide rate



divided by the imprisonment rate), a “repression index” is constructed by dividing the imprisonment rate by the homicide rate (per 100,000). This repression index indicates that the 27 OECD nations included in this study became significantly more repressive between 1992 and 2004.<sup>14</sup> Overall, these nations experienced a 33 percent increase in imprisonment rates despite a 39 percent decline in homicide (1992-2004). If the number of people incarcerated per homicide is estimated as a rough repression index, governments became twice as repressive during this period (from 39 people incarcerated per homicide in 1992 to 85 in 2004). While this repression index over-simplifies a multi-dimensional concept, it is evident that these nations have become more repressive in their response to crime over this period, consistent with claims by Garland (2001) and Pratt (2007).

Figure 7 depicts the variation of repressiveness across 27 OECD nations, organized by region. With the exception of South Korea and Spain, all nations in the sample experienced an increase in the repression index from 1992 to 2004. There was, however, considerable variation across nations. The United Kingdom (294 people incarcerated per homicide in 2004) and Luxembourg (273 people incarcerated per homicide in 2004) were the most repressive according to this measure, considerably higher than rates across Nordic nations (50 people incarcerated per homicide in 2004) and in Mexico (21 people incarcerated per homicide in 2004). Surprisingly, due the relatively high rate of homicide in the United States, 10 of the 27 nations in the sample recorded a higher repression index than the 124 people incarcerated per homicide in the United States in 2004. Figure 7 displays the percentage change in the incarceration index from 1992 to 2004, showing increases in

---

<sup>14</sup> Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, South Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States are included in the full sample of 27 OECD nations.

repression across all regions of the OECD. However, much more rapid growth is noted across American and Eastern European nations as compared to Nordic nations and nations in Asia and Oceania. Overall, the repression index grew by 118 percent during this time period across these 27 nations.<sup>15</sup>

### **5.3 The Incarceration Binge and the Great Crime Decline**

This apparent increase in repressive crime-control policies across wealthy democracies, evident by the rise in incarceration rates and repression index scores, could plausibly explain the decline in homicide rates during the 1990s. As a central aspect of governmental crime-control efforts, many scholars and lay people alike expect rising rates of incarceration to reduce rates of crime. The mechanism linking increases in incarceration to decreases in crime centers on two basic concepts: deterrence and incapacitation. Beginning with deterrence, the Classical School of criminology argues that governments should use punishment as a means of deterring the population from committing crime (Beccaria 1819). Scholars adhering to deterrence and rational choice perspectives conceptualize crime, like all other behavior, as rational action. Because people weigh the relative benefits and costs of their actions, increasing the threat of punishment should decrease criminal behavior (Becker 1968; Gibbs 1975). In theory, crime declines could be linked to new laws against crime, including the threat of harsher sanctions and an increasing fear of apprehension due to enhanced law enforcement activity. In this way, increasing rates of incarceration could plausibly be a general deterrent against crime.

---

<sup>15</sup> The nations are grouped in the following regions: Americas (Canada, Mexico and the United States), Asia and Oceania (Australia, Japan, South Korea and New Zealand), Eastern (and Southern) Europe (Austria, Italy, Greece, Poland and Turkey), Western Europe (Belgium, France, Germany, Ireland, Luxembourg, the

However, given that the decline in homicide rates does not correspond with new laws outlawing murder, it may be more plausible to conceptualize the effect of increasing rates of incarceration as exerting an incapacitative rather than deterrent effect on homicide. Although it is difficult, if not impossible, to differentiate the impact of general deterrence and incapacitation in aggregate research (Blumstein et al. 1978), there is little indication that the legality or punishment of homicide has changed dramatically over the past few decades. Research on the (general) deterrent effect of capital punishment on homicide suggests that changes in punishment for homicide may act as a deterrent (Ehrlich 1975), but scholars have often cast doubt on this line of inquiry (Radelet and Akers 1996). Additionally, the increase in incarceration rates in the United States appears to be driven by mandatory sentencing practices and the “war on drugs” (Alexander 2012; Garland 2001), not more effective punishment of homicide. In fact, there was a steady decline in homicide clearance rates in the United States from 1980 through 2000 (Ousey and Lee 2010). There is also some question about whether a subset of homicides, which are largely unplanned and expressive outbursts of violence involving seemingly trivial disputes (Katz 1988; Miethe and Drass 1999), can effectively be deterred by the threat of punishment. Thus, given the nature of the incarceration binge and homicide offending, it is more likely that incapacitation (rather than general deterrence) contributed to the decline in homicide.<sup>16</sup>

Several empirical and theoretical traditions implicate incapacitation in the reduction of homicide rates. The central idea undergirding the link between incapacitation and a reduction in violent crime is the *stability* of individual criminality over time among chronic

---

Netherlands, Portugal, Spain, Switzerland and the United Kingdom) and Nordic (Denmark, Finland, Iceland, Norway and Sweden). The data sources for these figures are documented in the Data and Methods section.

offenders. Two prominent theoretical perspectives highlight how stable personal characteristics are connected to criminal offending: Gottfredson and Hirschi's (1990) emphasis on low self-control and Moffitt's (1993) claims concerning neuropsychological deficits and criminal offending. In her "dual taxonomy" hypothesis, Moffitt (1993: 679) famously describes the stability in criminality of "life-course persistent" offenders:

Across the life course, these individuals exhibit changing manifestations of antisocial behavior: biting and hitting at age 4, shoplifting and truancy at age 10, selling drugs and stealing cars at age 16, robbery and rape at age 22, and fraud and child abuse at age 30: the underlying disposition remains the same, but its expression changes as new social opportunities arise at different points in development.

If individuals with a stable antisocial propensity are arrested and (1) imprisoned for a longer period of time due to enhanced mandatory minimum sentences or are (2) imprisoned for crimes previously punished through non-custodial sanctions (i.e. fines, probation, etc.), their incapacitation should cause rates of homicide to decline. Research on "criminal careers" also supports the notion that incapacitation of chronic offenders could result in crime reductions (Blumstein et al. 1988). The expanding dragnet of imprisonment did not specifically target "life-course persistent" offenders (Moffitt 1993) or offenders with a high *lambda* (i.e. Blumstein et al. 1988), but many such chronic offenders were likely imprisoned at a greater rate during the recent incarceration binge. Based on this theory and research, arresting a larger swath of the population for minor crimes may incapacitate a greater number of chronic offenders and interrupt criminal careers that include homicide.

While the state of the incapacitation and deterrence literature is beyond the scope of this study, research on imprisonment in the United States largely confirms an incapacitative (or deterrent effect) on crime rates, but with important caveats. Several studies have

---

<sup>16</sup> Of course, a surge in the size of the police force that corresponded with an increase in incarceration could plausibly serve as a deterrent effect on homicide (Levitt 1996; 2004). However, the threat of imprisonment for

demonstrated that increases in incarceration lead to declines in crime in the United States (Levitt 1996; Spelman 2006; Witt and Witte 2000). Even researchers who describe the aggregate impact of imprisonment on crime as “limited” demonstrate a significant reduction in crime due to increases in incarceration rates (Spelman 2006). However, researchers caution that the expansion of imprisonment as punishment has “accelerating declining marginal returns” (Liedka et al. 2006: 272), incarcerating (presumably) less serious and chronic offenders as prison populations expand. Even more troubling is growing evidence that imprisonment seems to increase, rather than decrease, recidivism (Lipsey and Cullen 2007). Overall, there is evidence of an incapacitative or deterrent impact of rising rates of imprisonment on crime rates, but there are potential drawbacks of using incarceration as a crime-control policy, even setting aside moral or political questions on the wisdom of imprisoning large segments of a nation’s citizenry.

#### **5.4 Previous Cross-National Research**

Despite evidence of the efficacy of incarceration and the centrality of imprisonment in government crime-control policy, there is relatively little cross-national research on incarceration and aggregate crime rates. To date, research in cross-national samples has been inconclusive. Two studies, examining relatively small samples of European nations and the United States demonstrate that imprisonment has some effect on property crime. In a sample of ten nations, from 1993 through 2006, Rosenfeld and Messner (2009) find that incarcerations rates are inversely related to burglary rates. However, this effect was dependent upon the inclusion of an extreme policy measure within a single nation (Italy). Buonanno and colleagues (2011) find a more robust effect of imprisonment on rates of crime

---

the crime of homicide itself did not appear to substantially shift during the 1990s.

(in total) and property crimes in a sample of six nations from 1970 to 2008. However, their results for violent crime are dependent upon model specification, whereby the impact of incarceration only exerted a significant impact when controlling for immigration rates.

Only one study has specifically examined the role of imprisonment on the decline of homicide rates in relation to the great crime decline of the 1990s. In Baumer and Wolff's (2014) study of the decline in homicide rates across 65 nations, the authors fail to find a significant relationship between rising incarceration and declining homicide rates.

Highlighting the heterogeneity of homicide trends from 1989 through 2008, the authors demonstrate that there were distinct homicide trajectories across regions. These trends include a relatively steady decline in Western Europe and North America, but an inclining trend in the Caribbean, South America and Eastern Europe for much of the 1990s (declining thereafter). Overall, the authors attribute declines in homicide rates to reductions in poverty, aging populations, and a decline in urbanity. While imprisonment is not a significant predictor of homicide rates in this sample of 65 nations, the authors caution that their findings could be influenced by heterogeneous effects across a diverse sample of nations.<sup>17</sup>

Beside these few studies, there has been relatively little cross-national research on the 1990s international crime drop. An emerging area of inquiry in cross-national research on crime during the 1990s is the improving economic conditions of many wealthy democracies, including Rosenfeld and Messner's (2009) arguments linking improving consumer sentiment to declines in burglary and Rosenfeld's (2014) findings regarding declining rates of price inflation in relation to reductions in both violent and property crime. Improving economic

---

<sup>17</sup> Somewhat surprisingly, given the paucity of cross-national research on incarceration and crime, Tonry (2014: 53) argues that "it is no longer reasonable even to hypothesize that crime patterns can be explained in terms of punishment policies or imprisonment rates." Much of the evidence upon which Tonry (2014) bases this

conditions are hypothesized to lead to both a contraction in property crime and less demand for low priced items on the black market. As illicit markets contract, a decline in violence to enforce illicit market transactions should occur, resulting in a connection between property crime and violence (Rosenfeld 2014).<sup>18</sup>

Additional longitudinal, cross-national research provides some insight into other factors influencing homicide rates over time. Most prominently, institutional anomie theory (Messner and Rosenfeld 1994, 1997) highlights the role of “de-commodification” (Esping-Andersen 1990) in reducing rates of crime. The effect of de-commodification is not always significantly associated with reductions in crime, as found in research on burglary (Rosenfeld and Messner 2009). However, de-commodification is negatively associated with homicide in both contemporaneous (Savage et al. 2008) and lagged measures (McCall and Brauer 2014; Tuttle 2018) of social welfare expenditures.

Scholars examining cross-national homicide rates have also noted other influences on variation in homicide rates over time. Findings across studies have been somewhat inconsistent. Consistent with previous statements on the peak crime age (Hirschi and Gottfredson 1983), scholars have noted a positive relationship between a relatively young age structure and homicide (McCall and Brauer 2014; Stamatel 2009). However, inconsistencies have been noted in the direction of the relationship between urbanization and homicide (compare Savage et al. 2008 and Baumer and Wolff 2014), the relationship between increases in gross domestic product (GDP) per capita and homicide (compare Savage et al. 2008 and Tuttle 2018) and rising income inequality and homicide (compare

---

claim is visual analysis of trends, bivariate correlations and cross-sectional analyses (e.g. Lappi-Seppälä and Lehti 2014).

<sup>18</sup> Limited comparative research on the crime decline has implicated declines in environmental lead (Nevin 2007). However, these claims are based on dubious theoretical grounds (Cullen et al. 1997).

Jacobs and Richardson 2008 and Neumayer 2003). Overall, homicide is expected to be associated with greater urbanism (Wirth 1938), higher rates of income inequality (Nivette 2011) and downturns in the economy, documented by declines in GDP per capita. Further research is needed to clarify these findings.

### **5.5 The Current Study**

Given the relative lack of longitudinal, cross-national research on the decline in homicide during the 1990s, the current study aims to assess whether increasing rates of incarceration can account for variation in homicide rates across wealthy democracies from 1993 to 2005. Because this research question concerns change in homicide rates over time, this analysis focuses exclusively on time-variant factors that could plausibly account for the homicide decline across wealthy democracies. To effectively assess change over time, the current analysis utilizes pooled fixed-effects regression modeling techniques. Fixed-effects modeling has the distinct advantage of holding all unmeasured, time-stable variance between nations constant. By controlling for time-invariant country-specific influences, bias introduced by unobserved heterogeneity is effectively eliminated, improving upon statistical estimation procedures in the extant literature on the decline in homicide rates during the 1990s (Baumer and Wolff 2014).

### **5.6 Data and Methods**

#### **Sample**

The data are derived from a sample of 27 OECD nations across five panels from 1993 through 2005, for a total of 135 country-year observations. Nations are included in the



sample on the basis of their (1) inclusion in the imprisonment report prepared by the OECD (2010) and (2) sufficient data on key dependent and independent variables (such as social welfare expenditures). This sample of 27 nations is not representative of the world's population, but it represents several regions of the world and there is significant variation in social and economic dimensions across these nations. For example, there is a considerable range in affluence, from Luxembourg's GDP per capita of \$68,220 to Mexico's \$12,212 GDP per capita (in 2005) measured in current (purchasing power parity) international dollars (World Bank 2017a).

Due to the availability of incarceration data, the data for these analyses are organized into five panels, representing each third year (1993, 1996, 1999, 2002 and 2005), lagged one year from available incarceration data (1992, 1995, 1998, 2001 and 2004). The trends in homicide in the sample are fairly consistent across nations, with a few notable exceptions. Homicide rates declined in the overall sample from 1993 (2.23 per 100,000) to 2005 (1.54 per 100,000), but some nations displayed either static (Ireland and South Korea) or increasing (Iceland, Luxembourg and Spain) trend-lines during this period. Incarceration rates increased dramatically from 1992 (97 per 100,000) to 2004 (129 per 100,000), although South Korea and Canada experienced a net decrease during this period. To examine the descriptive statistics organized by panel, see Table 9.

## **Data**

Data are compiled from several sources, including the World Bank, World Health Organization, OECD and United Nations. Beginning with the dependent variable, raw homicide counts are derived from World Health Organization (WHO 2015), using the 9<sup>th</sup>

(E960-E969) and 10<sup>th</sup> (X85-Y09) International Classification of Disease (ICD) versions defining cause-of-death as guidelines for coroners. The WHO is widely considered to be the most reliable source of cross-national homicide statistics, holding significant advantages over other homicide data sources such as those using police reports that are believed to be more ambiguous in definition of homicide (e.g. attempted vs. completed homicides are sometimes combined in official statistics) and prone to inaccuracies (Kalish 1988; LaFree 1999; Stamatel 2009). United Nations (2017) population data are used to standardize the raw mortality counts by 100,000 population.

The independent variable of interest, incarceration rates, is derived from a 2010 OECD report on imprisonment. The OECD (2010) based its estimates on incarceration estimates originally disseminated in *International Centre for Prison Studies* reports (World Prison Briefs 2017). The imprisonment rate represents all individuals remanded to prison, regardless of adjudication. The inclusion of individuals in the pre-trial period may raise some concerns about cross-national comparability, as national policies may differ in pre-trial holding policies. This potential issue is (partially) mitigated by the design of this study, which examines only within-nation (rather than between-nation) variation. Previous scholars have also used *International Centre for Prison Studies* data (Baumer and Wolff 2014) and the imprisonment estimates from this source are also highly correlated (.97) with estimates derived from Eurostat (Rosenfeld and Messner 2009). Imprisonment rates are expressed as the number of people in prison per 100,000 population.

From 1992 to 2004, this OECD (2010) report includes incarceration estimates for every third year, a time span that roughly corresponds with the homicide decline across Western democracies. This study examines the one-year lagged effect of incarceration rates

on homicide rates – that is, the effect of incarceration on the homicide rate the following year. The incarceration data are available in 1992, 1995, 1998, 2001 and 2004. Due to simultaneity issues between incarceration and homicide (simultaneous causality of the homicide rate and the incarceration rate by the amount of criminal behavior within society) (Spelman 2008), the remaining panel data are measured in 1993, 1996, 1999, 2002 and 2005. This strategy may mitigate this simultaneity issue somewhat, but scholars generally contend that the impact of imprisonment and other criminal justice responses on rates of crime is still likely understated due the issue of simultaneous causality (Rosenfeld and Messner 2009; Spelman 2008).<sup>19</sup>

Based on findings from previous research on the international crime drop, improving economic circumstances are hypothesized to lead to a reduction in homicide rates. Beginning with reductions in poverty noted by Baumer and Wolff (2014), both infant mortality and GDP per capita are included in the model. Infant mortality is a common measure of poverty within the homicide literature (Pridemore 2008). Data are derived from the World Bank, with infant mortality data representing the number of infant deaths per 1,000 live births (World Bank 2017c). To account for relative economic well-being, GDP per capita, measured in constant (current) international dollars, accounting for purchasing parity power (World Bank 2017a) is also included. The raw GDP per capita figures are divided by 1,000. Cross-national research on homicide and burglary also implicates other measures of general economic conditions, indicated by rates of inflation (Rosenfeld 2014). Estimates of rates of inflation, measured as a percentage of consumer prices, is also derived from the World Bank (2017d).

---

<sup>19</sup> Ideally, a statistical procedure using instrumental variables would be employed to more completely address simultaneity issues (Levitt 1996), but no appropriate variable was located.

In cross-sectional cross-national research, income inequality is one of the most consistent predictors of homicide (LaFree 1999; Nivette 2011), suggesting its inclusion in this study. Although longitudinal research is less clear (compare Jacobs and Richardson 2008 and Neumayer 2003), income inequality measures compiled by Solt (2016) are included to control for income distribution. Like previous research using a similar sample (Tuttle 2018), Solt's (2016) research is used due to excessive missingness in other, mostly single source, datasets. Solt (2016) draws on multiple income inequality data sources, calculating a single annual estimate using advanced imputation techniques, utilizing the Luxembourg Income Study as the standard. Income inequality is expressed as a Gini index of income inequality that represents equivalized household income, post-tax and post-transfer.

Stemming from Messner and Rosenfeld's (1997) test of institutional anomie theory using Esping-Andersen's (1990) concept of "de-commodification," scholars studying homicide have often assessed the impact of social welfare expenditures (Pratt and Godsey, 2003; McCall and Brauer 2014; Savage et al. 2008; Tuttle 2018). De-commodification has been measured in several ways, including composite indicators (McCall and Brauer 2014; Messner and Rosenfeld 1997) and proxy measures, such as government spending devoted to health care (Pratt and Godsey 2003). This study assesses the impact of total social expenditures, including spending on old age, health, unemployment, disability, housing and other social welfare benefits, using OECD (2017) data. This measure is expressed as total welfare expenditures as a percentage of GDP.

Additional independent variables commonly included in cross-national homicide research are also employed for statistical control. Age structure of the population is often employed in aggregate studies of crime due to disproportionate offending during late

adolescence and early adulthood (Hirschi and Gottfredson 1983). United Nations (2017) demographic data is utilized to control for the size of this relatively young age group, measured as the percentage of the population aged 15 to 29. An additional population control included in previous cross-national homicide research (Baumer and Wolff 2014) is the percentage of the population living in urban areas, that is also accounted for in the present study (World Bank 2017a). Two additional controls, often used as indicators of social disorganization or “routine activities theory” (Cohen and Felson 1979) and associated with the supervision of juveniles, are also employed. These variables include the crude divorce rate per 1,000 population, drawn from the United Nations (2017) and percentage of female labor force participation (aged 15+), drawn from the World Bank (2017e). In cross-sectional research, both divorce rates and female labor force participation are associated with higher homicide rates (Nivette 2011).<sup>20</sup>

### **Preliminary Analyses**

Preliminary analyses were conducted before estimating the pooled OLS regression models using fixed-effects techniques. First, homicide rates were converted to a three-year moving average to reduce statistical “noise” as homicide rates, especially within nations with a relatively small population (most notably, Luxembourg and Iceland), can vary widely based upon a few homicides in a given year. The three-year moving average uses homicide rates from the previous and following year surrounding the homicide rate for a given year, computing these three years into a single mean estimate. Second, after detecting

---

<sup>20</sup> Eight observations (out of 135 nation-years) were missing. To maximize the statistical power using this procedure, these missing data were imputed using linear interpolation of annual time-series data. The missing data points imputed were homicide rates for Australia (2005), Poland (1999) and Portugal (2005) and divorce rates for Belgium (1993), Iceland (1993), Ireland (1999) and the United States (1999).

heteroskedasticity in preliminary regression analyses, the three-year moving average of the homicide rate was transformed using the natural logarithm. After these transformations, the dependent variable more closely resembled a normal distribution and heteroskedasticity did not appear to be an issue. Additionally, incarceration rates per 100,000 are also transformed using the natural logarithm, consistent with previous research (Baumer and Wolff 2014; Rosenfeld and Messner 2009). The appropriate lag of the effect of social welfare expenditures is also assessed. Shifts in social welfare expenditures have the greatest impact on homicide rates two years later, consistent with previous research on the optimal lag of the effect of social welfare expenditures (see Brauer and McCall 2014; Tuttle 2018).

Additional steps were taken to ensure that the basic assumptions of pooled OLS regression analysis are met. First, examination of bivariate correlations between independent variables (featured in Table 10) suggests that there may be potential issues regarding collinearity, which is a common concern in research using aggregate data (Land et al. 1990). The strongest correlation, between infant mortality and inflation (.88), suggests entering these variables into the model simultaneously may lead to the erroneous inference that one of these effects is not statistically significant when its true effect is masked by collinearity issues. Other bivariate correlations, such as between the percent of the population aged 15-29 and social welfare expenditures (-.75) and infant mortality (.68) also warrant caution. One of the preliminary regression models in standard OLS regression indicated issues with collinearity, with a variance inflation factor of 10.37 for infant mortality (analyses not shown). This potential confounding influence may be mitigated by the structure of the final analyses, which only captures variation over time, but independent variables sharing strong correlations are “stepped” into nested models to examine substantive changes in the

coefficients (analyses not shown). While substantive results largely remain the same across models, (non-significant) effects of inflation, age structure, social welfare expenditures and infant mortality should be interpreted with caution.<sup>21</sup>

Finally, time series models, specifically fixed-effects models, require additional controls and specifications. Typically, a unit-root test is performed to determine if the data are stationary, meaning that the variance, mean and other statistical properties are constant over time. The relatively few panels per nation (5) prevents an effective unit root assessment using a Dickey-Fuller test. Additionally, some researchers have suggested non-stationarity will not likely bias results in assessments over a relatively short time-series as used in the present study (Baumer and Wolff 2014). Differencing is often used to correct time series non-stationarity, a process which results in losing the first observation in a times series. To avoid losing this observation, the initial models use untransformed data. To test the robustness of these results and more effectively control for problems of non-stationarity, supplemental analysis of the 1996-2005 period over four panels (Model 3 of Table 11) will transform the data through “first-differencing” (see Rosenfeld and Messner 2009). To control for potential issues of autocorrelation of errors and heteroskedasticity, robust standard errors are used in all analyses. All fixed-effects regression models presented below control for nation fixed-effects, country-specific trends, common linear trend and period effects.

## 5.7 Results

Results of pooled OLS fixed-effects regression models are presented in Table 11. As hypothesized, the natural logarithm of imprisonment rates is significantly (and negatively)

---

<sup>21</sup> It should be noted that the bivariate correlation matrix captures variation both between and within nations over time while the fixed-effects regression analysis only captures variation within nations, making a direct

associated with the natural logarithm of the three-year moving average of homicide rates over the five panels in this analysis. In Model 1, four relationships approached or achieved statistically significant relationships in a one-tailed test of significance at the .05 confidence interval. Female labor force participation ( $p = .06$ ), income inequality ( $p = .07$ ) and infant mortality rates ( $p = .06$ ) are positively associated with homicide rates while rates of imprisonment ( $p < .01$ ) are negatively associated with homicide rates. Divorce, social expenditures, percentage of the population aged 15 to 29, percent urban and inflation are not significant predictors of homicide in the model. Initial models (not shown) where highly correlated independent variables (i.e. infant mortality, inflation, population aged 15 to 29 and social expenditures) are stepped into nested models suggest that collinearity issues do not significantly bias these results. That is, there were few substantive changes across nested models and there was no dramatic change in the regression coefficients with the addition of each variable.

### **Specificity Analyses**

Further analyses were conducted to examine the robustness of these results. One issue noted in the examination of residual diagnostic tests is overly influential cases, in particular, Mexico and Turkey. In Model 2, displayed in Table 11, the five observations for both Mexico and Turkey (10 country years in total) are removed from the sample, leaving a total of 125 country-years from 1993 through 2005. The change in the findings between Model 1 and Model 2 suggests that these observations had undue influence on the results of Model 1. While the negative relationship between incarceration rates and homicide rates and positive association between female labor force participation and homicide rates remains



substantively the same, infant mortality and income inequality are no longer approach statistical significance in their association with homicide rates in Model 2. However, in this sample of 25 nations, the percentage of the population aged 15 to 29 ( $p = .07$ ) approaches statistical significance at the .05 confidence interval (one-tailed test). These results suggest that observations from Mexico and Turkey had undue influence on the results of the initial analysis.

Additional specificity analyses are conducted using first-differencing techniques to address potential problems with non-stationarity. The process of first-differencing the untransformed data begins by subtracting estimates of each time point from the previous time point ( $y_t - y_{t-1}$ ). In this process, the first panel (1993) along with 25 total observations are lost (as Mexico and Turkey have been excluded), effectively shortening the period of observation to four (3-year) panels from 1996 through 2005. The three-year moving average of homicide rates is utilized in Model 3 of Table 11, but neither the homicide rate nor the imprisonment rate are transformed with the natural logarithm because preliminary analyses indicate that the first-differenced data do not present issues of extreme departures from a “normal” distribution or heteroskedasticity. The results of this analysis are located in Model 3 of Table 11. To make a fair comparison with the model specifications using in their original metrics (as in Models 1 and 2) across the same panels (1996-2005), supplemental analysis of for the 1996 through 2005 time frame is also estimated. The regression results for this model are displayed as Model 4 of Table 11.

The results of this specificity analysis suggest non-stationarity bias in the original results. However, this non-stationarity bias seems to obscure statistically significant relationships rather than produce spurious relationships, as the changes noted across models

are minor. The main substantive difference between Model 3 (first-differenced) to Model 4 (original metrics) in Table 11 is that income inequality ( $p = .09$ ) and GDP per capita ( $p = .09$ ) approach statistical significance at the .05 confidence interval (one-tailed test) in the first-differenced data. All other independent variables, except for imprisonment rates, fail to reach statistical significance. The noted smaller coefficient estimated for incarceration rates in Model 3 of Table 11 is due to first-differencing of both the independent and dependent variables – that is, the first differencing results in values much smaller than the original measures for incarceration and homicide rates, which, in turn, decreases the observed size of the impact. However, the effects of incarceration on homicide in the model are substantively the same. Across all four models (in Table 11) employing various model specifications, the robustness of the impact of the rate of imprisonment is demonstrated as it is consistently negatively and significantly associated with homicide rates. The relationships between homicide rates and female labor force participation and the percentage of the population aged 15 to 29 (in Model 2) must be interpreted with caution based on the findings in these specificity analyses, but the negative relationship between imprisonment and homicide is robust.

### **5.8 Discussion and Conclusion**

The results of this analysis assist in unraveling the mystery of the synchronous decline in homicide rates across Western democracies. Social scientists have made some progress in explaining the crime decline in the United States (see Baumer 2008; Farrell et al. 2014; Levitt 2004; McCall and Hendrix 2015), but only recently have scholars begun to recognize the international nature of the crime drop (Baumer and Wolff 2014; Buonanno et

al. 2011; Rosenfeld and Messner 2009; Van Dijk et al. 2012). The current study provides evidence that a more punitive turn in the administration of justice (Garland 2001; Pratt 2007), evidenced by increasing rates of incarceration (Lappi-Seppälä 2011) and higher repression index scores (see Figure 7), contributed to the sustained decline in homicide rates during the 1990s and early 2000s. Increasing incarceration rate trends, interpreted here as incapacitating a greater number of potential or chronic offenders, appear to have contributed to a significant reduction in homicide rates across the 27 OECD nations included in this study.

Additionally, among the variety of model specifications examined, other factors may have exerted an influence on homicide rates. There is evidence in this study that improving economic conditions (see Baumer and Wolff 2014; Rosenfeld and Messner 2009) and an aging population structure contributed to the decline in homicide rates. Rising rates of income inequality and increasing female labor force participation may have prevented a steeper decline in homicide in some nations. However, these relationships should be interpreted with caution as the statistical significance of these findings was inconsistent across different model specifications.

This study joins a small, but growing body of literature on the impact of rising rates of incarceration on crime in a cross-national context. To date, the evidence is somewhat unclear. Some studies indicate no significant relationship between incarceration and homicide (Baumer and Wolff 2014), while this study as well as recent research examining Western Europe (Dolliver 2015) provides evidence of a negative relationship between incarceration rates and homicide rates. Research on burglary (Rosenfeld and Messner 2009) as well as various property and violent crimes (Buonanno et al. 2011) provides some additional evidence that higher rates of incarceration contributed to crime declines. While the

discrepancy between studies is yet to be explained, the differences in sample composition and use of fixed-effects regression techniques in this study, more adequately controlling for unobserved heterogeneity than previous research (Baumer and Wolff 2014), may account for the differences in research findings. Further research is needed to clarify the impact of incarceration and other criminal justice responses to crime on crime rates in cross-national samples.

The crime decline, partially explained by increasing incarceration rates in this study, adds another chapter to the saga on institutional control of violent crime over the past few decades. As some scholars have argued, trust in political institutions declined in the 1960s and 1970s, contributing to a rise in homicide rates (LaFree 1998; Roth 2009). Rising rates of violence contributed to a call for more punitive measures in the 1980s and 1990s to protect the public from criminal predation. This fear of victimization increased the public demand for more punitive criminal justice responses. Facilitated by a decline in institutional authority and the rehabilitative ideal, this public desire for harsher sanctions contributed to rising rates of incarceration (Garland 2001; Pratt 2007). This increase in repressive state actions incapacitated a greater number of potential and/or chronic offenders for longer periods of time, leading to declines in homicide. Despite declining political legitimacy over the past few decades (Dalton 2005), homicide rates have fallen to the lowest level since the 1960s across several Western democracies. This decline in homicide rates, however, appears to come at the price of imprisoning large segments of population for increasingly minor offenses (Liedka et al. 2006).

Moving forward in this era of relatively low rates of homicide, the challenge for governments is to devise strategies that maintain safety, but transition to proportionally more

use of the “carrot” rather than the “stick.” Research has documented the negative relationship between social welfare spending and homicide (Pratt and Godsey 2003; McCall and Brauer 2014; Savage et al. 2008; Tuttle 2018), suggesting that anti-crime practices and policies other than incarceration can effectively reduce rates of crime without the deleterious effects of mass incarceration. As a growing body of literature critiques the consequences of mass incarceration in the United States (Alexander 2012; Rose and Clear 1998; Western and Wildeman 2009), there is increasing evidence of an importation of American-style criminal justice policy to parts of Western Europe (Lappi-Seppälä 2011). Further research is needed to assess the relative costs and benefits of utilizing alternative crime-control policies across nations, assessing the monetary and human costs of mass incarceration.

An additional concern given the extensive literature on the negative impact of mass incarceration is that rising rates of incarceration may also contribute to increases in crime over time. For example, Rose and Clear (1998) find that when a high percentage of the males have been removed urban communities due to their incarceration, it actually contributes to greater social disorganization within those neighborhoods, which may contribute to higher rates of crime (see Sampson and Groves 1989). Overall, there may be a delayed, but positive association, between incarceration and crime not captured in this study.

While this study provides some initial evidence that increasing government repression, measured as increasing incarceration rates, led to reductions in cross-national homicide rates, there are several limitations to this analysis. First, lacking annual data, the analyses outlined above utilize three-year panels. Ideally, annual variation would have been analyzed, as some of the variation across time in these measures is lost by utilizing a three-year panel design. Secondly, the relatively small sample size of this study ( $n = 135$  country-

years) may have limited the strength of the statistical power of these tests, indicating a finding of non-statistical significance for factors that exert an impact on homicide rates. Finally, also due to data limitations, other factors associated with the American crime decline could not be captured in this cross-national study. The potential influence of new immigration (Sampson 2008), changing police force tactics (Kelling and Bratton 1998) or fewer opportunities to commit homicide due to changing routine activities (Cohen and Felson 1979) are not accounted for in this study. While improving economic conditions (Baumer and Wolff 2014; Rosenfeld and Messner 2009) and increasing imprisonment rates may explain part of the reason for the decline in homicide (and other crimes) across Western democracies, further research is needed to identify additional influences that contributed to the crime decline.

## CHAPTER 6. CONCLUSIONS

### 6.1 Summary of Findings

At the beginning of this manuscript, I highlighted the importance of explaining rates of crime in our daily lives. Despite our “real life” concerns with the rate of crime, macro-criminological theory remains under-developed (Rosenfeld 2011). Among the few theories devoted to explaining variation in aggregate crime rates, the dominant theory purporting to explain variation in violent crime across nations, institutional anomie theory (IAT), is flawed or limited in several ways (Chamlin and Cochran 2007; Dolliver 2015; Jensen 2002; Messner et al. 2008). Retaining IAT’s emphasis on the institutional control of crime, but re-framing the relationship between institutions and crime rates from a social control perspective (see Kornhauser 1978), I outline “institutional legitimacy theory” (ILT) to account for variation in violent crime.

Stemming from LaFree’s (1998) account of rising rates of “street crime” in the United States during the 1960s and 1970s, ILT proposes that violent crime varies inversely with institutional legitimacy. By reducing conflict, providing non-violent means of redress/conflict resolution and strengthening existing social control mechanisms, institutional legitimacy effectively reduces violent crime. When institutional legitimacy wanes, rates of violent crime increase, evidenced by higher rates of homicide in nations with less political, economic, family and religious institutional legitimacy (see Chapters 3 and 4). A decline in political legitimacy is also hypothesized to spark increases in state repression, evidenced by increasing rates of incarceration (Garland 2001; Pratt 2007), which contributed to the decline in homicide across Western democracies during the 1990s and early 2000s (see Chapter 5).

The analyses in Chapters 3 and 4 provide partial support for ILT. In a cross-sectional analysis of homicide rates across 108 nations, homicide is negatively associated with the legitimacy of political, economic, familial and religious institutions. Most strikingly, the size of the shadow economy is positively associated with rates of homicide, providing evidence supporting the claim that business transactions, operating outside of government control, are more likely to end in violent retribution. Additionally, in Chapter 4, temporal crises in political and economic institutional legitimacy appear to be associated with increases in the homicide rate. Despite data limitations common in cross-national data, these analyses provide some support for ILT. These indirect measures of institutional legitimacy are consistent with the hypothesis that legitimate institutions assist in reducing violent crime across societies and over time.

Chapter 5 explores the dramatic homicide decline of the 1990s and early 2000s. As Western democracies became more repressive (evidenced by increasing rates of incarceration), homicide rates fell. In the 1960s and 1970s, waning political institutional legitimacy contributed to a rise in crime (see LaFree 1998; Roth 2009), which contributed to cynicism concerning rehabilitation and more “moderate” criminal justice strategies (Garland 2001; Pratt 2007). Increasing distrust in political institutions and increases in crime contributed to popular demands on politicians to get tough on crime that resulted in harsher penalties and increasing rates of incarceration (Garland 2001; Pratt 2007), leading to a decline in homicide rates across wealthy democracies (see Chapter 5). The findings across these chapters suggest that waning political legitimacy initially leads to higher rates of homicide, but, states eventually adjust by enacting more repressive crime control techniques, causing rates of homicide to fall. However, as noted in Chapter 2, repression is not as



effective as maintaining political legitimacy in reducing violent crime. Therefore, societies enjoying greater institutional legitimacy should have lower rates of violent crime in cross-sectional comparisons (as evidenced in Chapter 3), but temporal increases in repression should contribute to decline in violent crime (see Figure 3).

## **6.2 Limitations and Directions for Future Research**

Despite providing a coherent theoretical explanation of variation in violent crime across time and space, the findings of this study are tenuous. First and foremost, the theoretical mechanisms of ILT need further refinement. LaFree (1998) provides a straightforward definition of institutional legitimacy, but Tankebe (2013) distinguishes between the related concepts of legitimacy, trust and feelings of obligation to follow the law. The theoretical framework outlined in Chapter 2 does not clearly make this distinction in the definition of institutional legitimacy. More importantly, the measurement of institutional legitimacy may need to be refined in future cross-national research to capture these distinctions. Citizens may feel obligations to follow the law for reasons other than belief in political legitimacy.

A related issue concerns the measurement of political legitimacy. Recent scholarship in Latin America provides evidence that political legitimacy is not a singular concept but has as many as six distinct dimensions. Booth and Seligson (2009) argue that the dimensions of political legitimacy include (1) feeling part of a political community, (2) agreement with regime principles, (3) evaluation of regime performance, (4) evaluation of regime institutions, (5) evaluation of political actors and (6) perceptions of the local government. In many cases, these measures align, but each element of political legitimacy has its own

potential consequences (Booth and Seligson 2009). Future theoretical development of ILT needs to incorporate more sophisticated conceptualizations and measures of political legitimacy.

Second, possibly the most tenuous claim in the version of ILT explicated in Chapter 2 is the relationship between political legitimacy and state repression. I argue that the temporal delay between crises in political legitimacy and increases in repression accounts for the spike and elevated rates of violent crime from the early 1960s through the early 1990s in the United States (see Figure 3). It is plausible that there is a delay between losses in legitimacy and increases in repression, but the exact mechanisms connecting these phenomena are still unclear. Future inquiry should examine how citizens, politicians and criminal justice systems contribute to shifts in state repression in relation to political legitimacy. It is essential to understand how citizens and states negotiate legitimacy (Bottoms and Tankebe 2012) as well as how state repression is used to re-exert control of violent crime after declines in political legitimacy.

Third, while measuring “institutional balance” in institutional anomie theory presents empirical challenges (Chamlin and Cochran 2007), ILT may need examine the inter-relationship between distinct institutional domains. In a previous iteration of ILT, Nivette (2014) places the state at the center of analysis, arguing that other institutions lose legitimacy in lockstep with waning political legitimacy. While a close relationship exists between political and economic institutions (see Chapter 3), it is less clear how declines in political legitimacy are associated with familial and religious institutional legitimacy. As presented in the bivariate correlation matrix in Table 2, the measure of political legitimacy (corruption) is positively associated with the measure of economic legitimacy (shadow economy), but

negatively associated with the measure of familial legitimacy (divorce-to-marriage ratio). Although the nature of these relationships is more complex than indicated in their bivariate correlations, this evidence suggests that Nivette's (2014) attempt to examine the inter-relationship between different institutional domains is laudable, but likely too simplistic, to capture empirical realities.

A similar issue concerns how accurately ILT applies to the full range of nations across the world. As data become available, attention needs to be devoted to variation in legitimacy, repression and violent crime across non-democratic regimes. Scholars have previously noted that crime and justice may operate differently in autocracies than democracies (Karstedt 2006). Autocratic regimes may be able to more effectively use repressive social control techniques or mobilize their coercive capacity (Mann 1984), while institutional legitimacy may be comparatively more important in controlling violent crime in democratic nations. This is also indicated by findings that democracies in transition have higher rates of homicide than either autocracies or established democracies (Chu and Tsalem 2013; LaFree and Tseloni 2006). It is unclear if autocratic regimes, which more heavily rely upon repressive control techniques, cultivate legitimacy in the same manner as democracies. Further research and theoretical development is needed to explicate how this framework may apply differently across a diverse set of nations.

Fourth, there is a possibility that variation in violent crime can impact political legitimacy. This did not appear to be the case in the recent crime decline across Western democracies (Dalton 2005). However, if state repression is successful at reducing criminal predation, it may enhance claims to legitimacy by political actors. Although citizens may be generally misinformed or unaware of the actual rate of crime (Gramlich 2016), political

actors may use information concerning criminal predation to gain support and make claims for legitimacy. To examine the potential influence of violent crime on political legitimacy in future research, non-recursive modeling may be necessary to capture reciprocal effects.

Finally, there are several causal claims that are outlined in Chapter 2 that are not addressed in the subsequent empirical chapters (Chapters 3, 4 and 5). For example, multi-level data is necessary to test the mechanisms connecting institutional legitimacy to declines in unilateral violence (see Figure 1). Additionally, the tentative connections between political legitimacy and repression were merely implicated in Figure 2 and Chapter 5 (see also: Lappi-Seppälä 2011), not tested directly. The efficacy of state repression based upon “coercive capacity” (see Figure 2) has also yet to be tested. Future research needs to confirm the veracity of these theoretical claims. As scholars test ILT and similar frameworks, additionally theoretical ideas need to be integrated into the model. For example, it is unclear if people refrain from violence due to perceptions of institutional legitimacy or due to their (in)ability to effectively coordinate or enact violence as an expression of a grievance. Clarifying these theoretical mechanisms is essential for understanding variation in violent crime and justice across social time and space.

### **6.3 Epilogue**

After stagnating and declining rates of homicide in the 21<sup>st</sup> century, criminologists were again faced with another spike in homicide rates. In 2015, homicide rates increased dramatically in several major American cities. The increase in homicide rates has been limited to a few dozen cities (Rosenfeld 2016) but caused the aggregate rate of homicide to increase. It is yet unclear whether this current rise in violent crime is indicative of a sustained

pattern, but speculative explanations of the so-called “Ferguson Effect” suggests police reticence to perform basic functions (lest they become the target of protest) is among the most popular lay theories on this recent pattern. Observing a decline in arrests in some cities experiencing sharp increases in violence, some attribute this increase in violent crime to a lack of police activity (MacDonald 2016). At this point, scholars have questioned the veracity of these “Ferguson Effect” claims (Rosenfeld 2016), arguing that it is based more on anecdote than systematic research (Pyrooz, Decker, Wolfe, and Shjarback 2016). Yet, criminologists have little to offer as an explanation of this crime trend or crime trends in general.

Much like the 1990s crime decline, the lack of effective macro-criminological theory and research on recent crime trends provides a vacuum in understanding. The lack of understanding allots space for politicized accounts of temporal trends in violence. The so-called “Ferguson Effect” contributed to what one pundit labeled the “war on cops” (MacDonald 2016), arguing that protests against police killings of citizens have led to both increases in crime and attacks on police officers. While this account appears to be more politically-motivated than factually-based (Maguire, Nix and Campbell 2017), the inability of criminologists to provide a strong, evidence-based theory on temporal trends in violent crime has left social scientists on “the sidelines” when the public searches for answers concerning spikes in homicide. It appears that little has changed in the efficacy of macro-criminological theory since the last unexpected pattern in homicide rates (for example, see Bennett et al. 1996).

In an attempt to fill this void in understanding, the preceding chapters provide some initial support for ILT. There is some indication that declining legitimacy of social

institutions contributes to increases in violent crime. This sentiment has been echoed elsewhere in relation to the recent increases in homicide rates across major American cities (Rosenfeld 2016), as perceptions of injustice driven by police shootings of unarmed African-American men have contributed to distrust of criminal justice institutions and actors. Fortunately, some prominent scholars have argued that more attention needs to be devoted to developing theoretical explanations for variation(s) in crime rates over time (Baumer, Velez and Rosenfeld 2018). To better understand crime trends and contribute to the public conversation on crime and justice, scholars need to refine the predictions of this institutional legitimacy framework and direct their attention to explaining variation in violent crime across time and space.

## REFERENCES

- Alesina, Alberto, Araud Devleeschauwer, William Easterly, Sergio Kurlat and Romain Wacziarg. 2003. "Fractionalization." *Journal of Economic Growth* 8: 155-94.
- Alexander, Michelle. (2012) *The New Jim Crow: Mass Incarceration in the Age of Colorblindness*. New York: The New Press.
- Allison, Paul D. 2002. *Missing Data*. Thousand Oaks, CA: Sage.
- Anderson, Elijah. 1999. *Code of the Street: Decency, Violence and the Moral Life of the Inner City*. New York: W. W. Norton & Company.
- Andrews, Dan, Aida Caldera Sanchez and Asa Johansson. 2011. "Towards a Better Understanding of the Informal Economy." *OECD Economics Department Working Papers*, No. 873: OECD Publishing.
- Antonaccio, Olena and Charles R. Tittle. 2007. "A Cross-National Test of Bonger's Theory of Criminality and Economic Conditions." *Criminology* 45(4): 925-58.
- Arana, Ana. 2005. "How the Street Gangs Took Central America." *Foreign Affairs* 84(3): 98-110.
- Avakame, Edem F. 1999. "Females' Labor Force Participation and Intimate Femicide: An Empirical Assessment of the Backlash Hypothesis." *Violence and Victims* 14(3): 277-91.
- Ayres, Ian and John J. Donohue III. "Shooting Down the "More Guns, Less Crime" Hypothesis." *Stanford Law Review* 55(4): 1193-1312.
- Baumer, Eric P. 2008. "An Empirical Assessment of the Contemporary Crime Trend Puzzle: A Modest Step to a More Comprehensive Research Agenda." Pp. 127-76 in

- Understanding Crime Trends: Workshop Report* edited by Arthur S. Goldberger and Richard Rosenfeld. Washington D.C. National Academies Press.
- Baumer, Eric P. and Regan Gustafson. 2007. "Social Organization and Instrumental Crime: Assessing the Empirical Validity of Classic and Contemporary Anomie Theories." *Criminology* 45(3): 617-63.
- Baumer, Eric P., Maria B. Velez and Richard Rosenfeld. 2018. "Bringing Crime Trends Back into Criminology: A Critical Assessment of the Literature and a Blueprint for Future Inquiry." *Annual Review of Criminology* 1: 39-61.
- Baumer, Eric P. and Kevin T. Wolff. 2014. "The Breadth and Causes of Contemporary Cross-National Homicide Trends." *Crime and Justice* 43(1): 231-87.
- Beccaria, Caesar B. 1819. *An Essay on Crimes and Punishments*. Translated by Edward D. Ingraham. Philadelphia, PA: Philip H. Nicklin.
- Beck, Ulrich. 1992. *Risk Society: Toward a New Modernity*. London: Sage.
- Becker, Gary S. 1968. "Crime and Punishment: An Economic Approach." *Journal of Political Economy* 76(2): 169-217.
- Beckett, Katherine and Bruce Western. 2001. "Governing Social Marginality: Welfare, Incarceration and the Transformation of State Policy." *Punishment & Society* 3(1): 43-59.
- Beetham, David. 2013. *The Legitimation of Power*. 2<sup>nd</sup> ed. Basingstoke, UK: Palgrave Macmillan.
- Bennet, William J., John J. Dilulio Jr. and John P. Walters. 1996. *Body Count: Moral Poverty – And How to Win America's War Against Crime and Drugs*. New York: Simon & Schuster.



- Berger, Peter L. 1963. *Invitation to Sociology: A Humanistic Perspective*. New York: Doubleday.
- Bjerregaard, Beth and John K. Cochran. 2008. "A Cross-National Test of Institutional Anomie Theory: Do the Strength of Other Social Institutions Mediate or Moderate the Effects of the Economy on the Rate of Crime?" *Western Criminological Review* 9(1): 31-48.
- Black, Donald. 1983. "Crime as Social Control." *American Sociological Review* 48(1): 34-45.
- , 1990. "The Elementary Forms of Conflict Management." Pp. 74-89 in *New Directions in the Study of Justice, Law, and Social Control. Critical Issues in Social Justice*. Boston, MA: Springer.
- Blalock, Hubert M. 1967. *Toward a Theory of Minority-Group Relations*. New York: John Wiley and Sons.
- Blau, Judith R. and Peter M. Blau. 1982. "The Cost of Inequality: Metropolitan Structure and Violent Crime." *American Sociological Review* 47(1): 114-29.
- Blumstein, Alfred, Jacqueline Cohen and David P. Farrington. 1988. "Criminal Career Research: Its Value for Criminology." *Criminology* 26(1): 1-35.
- Blumstein, Alfred, Jacqueline Cohen and Daniel S. Nagin. 1978. *Deterrence and Incapacitation: Estimating the Effects of Criminal Sanctions on Crime Rates*. Washington, D.C.: Report of the Panel on Deterrence and Incapacitation, National Academy of Sciences.

- Blumstein, Alfred, Jaqueline Cohen and Harold D. Miller. 1980. "Demographically Disaggregated Projections of Prison Populations." *Journal of Criminal Justice* 8: 1-26.
- Blumstein, Alfred and Richard Rosenfeld. 1998. "Explaining Recent Trends in U.S. Homicide Rates." *The Journal of Criminal Law and Criminology* 88(4): 1175-1216.
- Bonger, William Adrian. 1916 [1905]. *Criminality and Economic Conditions*. Translated by Henry P. Horton. Boston, MA: Little, Brown.
- Booth, John A. and Mitchell A. Seligson. 2009. *The Legitimacy Puzzle in Latin America: Political Support and Democracy in Eight Nations*. New York: Cambridge University Press.
- Bottoms, Anthony and Justice Tankebe. 2012. "Beyond Procedural Justice: A Dialogic Approach to Legitimacy in Criminal Justice." *The Journal of Criminal Law and Criminology* 102(1): 119-70.
- Brauer, Jonathan R. and Charles R. Tittle. 2017. "When Crime is not an Option: Inspecting the Moral Filtering of Criminal Action Alternatives." *Justice Quarterly* 34(5): 818-46.
- Brayne, Sarah. 2014. "Surveillance and System Avoidance: Criminal Justice Contact and Institutional Attachment." *American Sociological Review* 79(3): 367-91.
- Buonanno, Paolo, Francesco Drago, Roberto Galbiati and Giulio Zanella. 2011. "Crime in Europe and the United States: Dissecting the 'Reversal of Misfortunes.'" *Economic Policy* 26(67): 347-85.
- Bureau of Labor Statistics. 2017. "International Indexes of Consumer Prices: 18 Countries and Areas." Retrieved October 15, 2017

- ([https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&ved=0ahUKEwil8In14fHYAhWQ7VMKHf-0AHkQFghIMAU&url=https%3A%2F%2Fwww.bls.gov%2Ffls%2Fintl\\_consumer\\_prices.xls&usg=AOvVaw1mhsAFyJLhFkEEZY4F8NCR](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=6&ved=0ahUKEwil8In14fHYAhWQ7VMKHf-0AHkQFghIMAU&url=https%3A%2F%2Fwww.bls.gov%2Ffls%2Fintl_consumer_prices.xls&usg=AOvVaw1mhsAFyJLhFkEEZY4F8NCR)).
- Campbell, Bradley and Jason Manning. 2014. "Microaggression and Moral Cultures." *Comparative Sociology* 13: 692-726.
- Carr, Patrick J., Laura Napolitano, and Jessica Keating. 2007. "We Never Call the Cops and Here is Why: A Qualitative Examination of Legal Cynicism in Three Philadelphia Neighborhoods." *Criminology* 45(2): 445-80.
- Centeno, Miguel A. and Joseph N. Cohen. 2012. "The Arc of Neoliberalism." *The Annual Review of Sociology* 38:317-40.
- Central Intelligence Agency (CIA). 2015. *The World Factbook*. Retrieved December 15, 2015 (<https://www.cia.gov/library/publications/the-world-factbook/fields/2122.html>).
- Chamlin, Mitchell B. and John K. Cochran. 1995. "Assessing Messner and Rosenfeld's Institutional Anomie Theory: A Partial Test." *Criminology* 33(3): 411-29.
- , 2007. "An Evaluation of the Assumptions that Underlie Institutional Anomie Theory." *Theoretical Criminology* 11(1): 39-61.
- Chiricos, Theodore G. and Mariam A. Delone. 1992. "Labor Surplus and Punishment: A Review and Assessment of Theory and Evidence." *Social Problems* 39(4): 421-46.
- Chu, Doris C. and Rollin F. Tusalem. 2013. "The Role of the State on Cross-National Homicide Rates." *International Criminal Justice Review* 23(3): 252-79.
- Cline Center for Democracy. 2015. "SPEED Project – Civil Unrest Event Data." Retrieved October 15, 2015 (<http://www.clinecenter.illinois.edu/data/speed/event/>).

- Cochran, John K. and Beth Bjerregaard. 2012. "Structural Anomie and Crime: A Cross-National Test." *International Journal of Offender Therapy and Comparative Criminology* 56(2): 203-17.
- Cohen, Lawrence E. and Marcus Felson. 1979. "Social Change and Crime Rate Trends: A Routine Activity Approach." *American Sociological Review* 44: 588-608.
- Cohen, Lawrence E. and Kenneth C. Land. 1987. "Age Structure and Crime: Symmetry vs. Asymmetry, and the Projection of Crime Rates through the 1990s." *American Sociological Review* 52: 170-83.
- Cole, Wade M. 2017. "Does Might Make Right or Fight? Coercive Capacity, Democracy, and Human Rights, 1975 to 2010." *Journal of Human Rights* doi: 10.1080/14754835.2017.1296353.
- Colvin, Mark, Francis T. Cullen and Thomas Vander Ven. 2002. "Coercion, Social Support, and Crime: An Emerging Theoretical Consensus." *Criminology* 40(1): 19-42.
- Cook, Philip J., John H. Laub. 1998. "The Unprecedented Epidemic in Youth Violence." *Crime and Justice* 24: 27-61.
- Cook, Philip J. and John H. Laub. 2002. "After the Epidemic: Recent Trends in Youth Violence in the United States." *Crime and Justice* 29: 1-37.
- Coontz, Stephanie. 1992. *The Way We Never Were: American Families and the Nostalgia Trap*. New York: Basic Books.
- Cullen, Francis T. 2011. "Beyond Adolescent-Limited Criminology: Choosing our Future – The American Society of Criminology 2010 Sutherland Address." *Criminology* 49(2): 287-330.

- Cullen, Francis T., Paul Gendreau, G. Roger Jarjoura and John Paul Wright. 1997. "Crime and the Bell Curve: Lessons from Intelligent Criminology." *Crime & Delinquency* 43(4): 387-411.
- Cullen, Francis T., John Paul Wright and Kristie R. Blevins. eds. 2006. *Taking Stock: The Status of Criminological Theory*. vol. 15. New Brunswick, NJ: Transaction Publishers.
- Dalton, Russell J. 2005. "The Social Transformation of Trust in Government." *International Review of Sociology* 15(1): 133-54.
- Daly, Martin and Margo Wilson. 1988. *Homicide*. New Brunswick, NJ: Transaction Publishers.
- Dilulio Jr., John J. 1995. "The Coming of the Super-Predators." *The Weekly Standard*, November 27, pp. 23.
- Dollar, Cindy Brooks, Patricia L. McCall, Kenneth C. Land and Joshua Fink. 2017. "Age Structure and Neighborhood Homicide: Testing and Extending the Differential Institutional Engagement Hypothesis." *Homicide Studies* 21(4): 243-66.
- Dolliver, Diana S. 2015. "Cultural and Institutional Adaptation and Change in Europe: A Test of Institutional Anomie Theory Using Time Series Modeling of Homicide Data." *British Journal of Criminology* 55: 747-68.
- Donohue III, John J. and Steven D. Levitt. 2001. "The Impact of Legalized Abortion on Crime." *The Quarterly Journal of Economics* 116(2): 379-420.
- Durkheim, Emile. 1947 [1893]. *The Division of Labor in Society*. Translated by George Simpson. New York: The Free Press.
- , 1951 [1897]. *Suicide: A Study in Sociology*. New York: The Free Press.

- Ehrlich, Isaac. 1975. "The Deterrent Effect of Capital Punishment: A Question of Life and Death." *The American Economic Review* 65(3): 397-417.
- Eisner, Manuel. 2001. "Modernization, Self-Control, and Lethal Violence: The Long-Term Dynamics of European Homicide Rates in Theoretical Perspective." *British Journal of Criminology* 41: 618-38.
- , 2008 "Modernity Strikes Back? A Historical Perspective on the Latest Increase in Interpersonal Violence (1960-1990)." *International Journal of Conflict and Violence* 2(2): 288-316.
- Elias, Norbert. 2000. *The Civilizing Process: Sociogenetic and Psychogenetic Investigations*. Translated by Edmund Jephcott. Malden, MA: Blackwell Publishers Inc.
- Esping-Andersen, Gosta. 1990. *The Three Worlds of Welfare Capitalism*. Princeton, NJ: Princeton University Press.
- Evans, Peter B. 1995. *Embedded Autonomy: State and Industrial Transformation*. Princeton, NJ: Princeton University Press.
- Fagan, Jeffrey and Ko-lin Chin. 1990. "Violence as Regulation and Social Control in the Distribution of Crack." Pp. 8-43 in *Drugs and Violence: Causes, Correlates, and Consequences* edited by Mario De La Rosa, Elizabeth Y. Lambert and Bernard Gropper. Research Monograph 103, National Institute on Drug Abuse. Rockville, MD: U.S. Public Health Service.
- Farrell, Graham, Nick Tilley and Andromachi Tseloni. 2014. "Why the Crime Drop?" *Crime and Justice* 43(1): 421-90.

- Farrell, Graham, Andromachi Tseloni, Jen Mailley and Nick Tilley. 2011. "The Crime Drop and the Security Hypothesis." *Journal of Research in Crime and Delinquency* 48(2): 147-75.
- Felson, Richard B. and Henry J. Steadman. 1983. "Situational Factors in Disputes Leading to Criminal Violence." *Criminology* 21(1): 59-74.
- Fiske, Alan Page and Taze Shakti Rai. 2015. *Virtuous Violence: Hurting and Killing to Create, Sustain, End, and Honor Social Relationships*. Cambridge: Cambridge University Press.
- Foote, Christopher L. and Christopher R. Goetz. 2008. "The Impact of Legalized Abortion on Crime: Comment." *The Quarterly Journal of Economics* 123(1): 407-23.
- Fox, James Alan. 1996. *Trends in Juvenile Violence: A Report to the United States Attorney General on Current and Future Rates of Juvenile Offending*. Washington, DC: Bureau of Justice Statistics.
- , 2006. "Demographics and U.S. Homicide." Pp. 288-318 in *The Crime Drop in America* edited by Alfred Blumstein and Joel Wallman. New York: Cambridge University Press.
- Fox, James Alan and Alex R. Piquero. 2003. "Deadly Demographics: Population Characteristics and Forecasting Homicide Trends." *Crime & Delinquency* 49(3): 339-59.
- Fukuyama, Francis. 1999. *The Great Disruption: Human Nature and the Reconstitution of Social Order*. New York: Touchstone.
- Garland, David. 1996. "The Limits of the Sovereign State: Strategies of Crime Control in Contemporary Society." *The British Journal of Criminology* 36(4): 445-71.

- , 2001. *The Culture of Control: Crime and Social Order in Contemporary Society*. Chicago: The University of Chicago Press.
- Gibbs, Jack P. 1975. *Crime, Punishment and Deterrence*. New York: Elsevier.
- Giddens, Anthony. 1991. *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Stanford, CA: Stanford University Press.
- Gilley, Bruce. 2006. "The Meaning and Measure of State Legitimacy: Results for 72 Countries." *European Journal of Political Research* 45: 499-525.
- Gold, Michael S. and Peter M. Bentler. 2000. "Treatments of Missing Data: A Monte Carlo Comparison of RBHDI, Iterative Stochastic Regression Imputation, and Expectation-Maximization." *Structural Equation Modeling: A Multidisciplinary Journal* 7(3): 319-55.
- Goldstein, Paul J. 1985. "The Drugs/Violence Nexus: A Tripartite Conceptual Framework." *Journal of Drug Issues* 15(4): 493-506.
- Gordon, Robert A. 1968. "Issues in Multiple Regression." *American Sociological Review* 73(5): 592-616.
- Gottfredson, Michael and Travis Hirschi. 1990. *A General Theory of Crime*. Stanford, CA: Stanford University Press.
- Gould, Roger V. 2003. *Collision of Wills: How ambiguity about Social Rank Breeds Conflict*. Chicago: The University of Chicago Press.
- Gramlich, John. 2016. "Voters' Perceptions of Crime Continue to Conflict with Reality." *Pew Research Center*. Retrieved February 8, 2018 (<http://www.pewresearch.org/fact-tank/2016/11/16/voters-perceptions-of-crime-continue-to-conflict-with-reality/>).



- Greenstein, Theodore N. and Shannon N. Davis. 2006. "Cross-National Variation in Divorce: Effects of Women's Power, Prestige, and Dependence." *Journal of Comparative Family Studies* 37: 253-73.
- Gurr, Ted R. 1970. *Why Men Rebel*. London: Routledge.
- , 1981. "Historical Trends in Violent Crime: A Critical Review of the Evidence." *Crime and Justice* 3: 295-353.
- Harris, Anthony R., Stephen H. Thomas, Gene A. Fisher and David J. Hirsch. 2002. "Murder and Medicine: The Lethality of Criminal Assault 1960-1999." *Homicide Studies* 6(2): 128-66.
- Hasan, Manar. 2002. "The Politics of Honor: Patriarchy, the State and the Murder of Women in the Name of Family Honor." *Journal of Israeli History* 21(1-2): 1-37.
- Hirschi, Travis. 1969. *Causes of Delinquency*. Los Angeles, CA: University of California Press.
- Hirschi, Travis and Michael Gottfredson. 1983. "Age and the Explanation of Crime." *American Journal of Sociology* 89(3): 552-84.
- Hobbes, Thomas. 1999 [1651]. *Leviathan*. Eugene, OR: The University of Oregon. Retrieved May 23, 2014 from <http://darkwing.uoregon.edu/%7Erbear/hobbes/leviathan.html>.
- Hughes, Lorine A., Lonnie M. Schaible and Benjamin R. Gibbs. 2015. "Economic Dominance, the "American Dream," and Homicide: A Cross-National Test of Institutional Anomie Theory." *Sociological Inquiry* 85(1): 100-28.
- Jacobs, David and Amber M. Richardson. 2008. "Economic Inequality and Homicide in the Developed Nations from 1975 to 1995." *Homicide Studies* 12(1): 28-45.

- Jensen, Gary F. 2000. "Prohibition, Alcohol, and Murder: Untangling Countervailing Mechanisms." *Homicide Studies*, 4(1), 18-36.
- , 2002. "Institutional Anomie and Societal Variations in Crime: A Critical Appraisal." *International Journal of Sociology and Social Policy* 22(7/8): 45-74.
- , 2006. "Religious Cosmologies and Homicide Rates among Nations: A Closer Look." *Journal of Religion and Society* 8: 1-14.
- Jenkins, J. Craig. 1983. "Resource Mobilization Theory and the Study of Social Movements." *Annual Review of Sociology* 9: 527-53.
- Johnson, Bruce, Andrew Golub and Eloise Dunlap. 2006. "The Rise and Decline of Hard Drugs, Drug Markets, and Violence in Inner-City New York." Pp. 164-206 in *The Crime Drop in America* edited by Alfred Blumstein and Joel Wallman. New York: Cambridge University Press.
- Jost, John T., Mahzarin R. Banaji, and Brian A. Nosek. 2004. "A Decade of System Justification Theory: Accumulated Evidence of Conscious and Unconscious Bolstering of the Status Quo." *Political Psychology* 25(6): 881-919.
- Jost, John T., Brett W. Pelham, Oliver Sheldon and Bilian Ni Sullivan. 2003. "Social Inequality and the Reduction of Ideological Dissonance on Behalf of the System: Evidence of Enhanced System Justification Among the Disadvantaged." *European Journal of Social Psychology* 33: 13-36.
- Kalish, Carol B. 1998. "International Crime Rates." *U.S. Department of Justice*. Washington, D.C.: U.S. Government Printing Office.
- Kane, Robert J. 2005. "Comprised Police Legitimacy as a Predictor of Violence Crime in Structurally Disadvantaged Communities." *Criminology* 43(2): 469-98.

- Kanis, Stefan, Steven F. Messner, Manuel P. Eisner and Wilhelm Heitmeyer. 2017. "A Cautionary Note about the Use of Estimated Homicide Data for Cross-National Research." *Homicide Studies* 21(4): 312-24.
- Karstedt, Susanne. 2006. "Democracy, Values, and Violence: Paradoxes, Tensions, and Comparative Advantages of Liberal Inclusion." *The Annals of the American Academy of Political and Social Science* 605(1): 50-81.
- , 2010. "New Institutionalism in Criminology: Approaches, Theories and Themes." Pp. 337-59 in *The Sage Handbook of Criminological Theory* edited by Eugene McLaughlin and Tim Newburn. London: Sage.
- Katz, Jack. 1988. *Seductions of Crime*. New York: Basic Books.
- Kelling, George L. and William J. Bratton. 1998. "Declining Crime Rates: Insiders' Views of the New York City Story." *Journal of Criminal Law and Criminology* 88(4): 1217-32.
- Kim, Sang-Weon and William Alex Pridemore. 2005. "Poverty, Socioeconomic Change, Institutional Anomie, and Homicide." *Social Science Quarterly* 86(S1): 1377-98.
- Kirk, David S. and Mauri Matsuda. 2011. "Legal Cynicism, Collective Efficacy, and the Ecology of Arrest." *Criminology* 49(2): 443-72.
- Kirk, David S. and Andrew V. Papachristos. 2011. "Cultural Mechanisms and the Persistence of Neighborhood Violence." *American Journal of Sociology* 116(6): 1190-1233.
- Kornhauser, Ruth Rosner. 1978. *Social Sources of Delinquency: An Appraisal of Analytic Models*. Chicago: University of Chicago Press.
- Kubrin, Charis E. and Ronald Weitzer. 2003. "Retaliatory Homicide: Concentrated Disadvantage and Neighborhood Culture." *Social Problems* 50(2): 157-80.

- LaFree, Gary. 1998. *Losing Legitimacy: Street Crime and the Decline of Social Institutions in America*. Boulder, CO: Westview Press.
- , 1999a. "Declining Violent Crime Rates in the 1990s: Predicting Crime Booms and Busts." *Annual Review of Sociology* 25: 145-68.
- , 1999b. "A Summary and Review of Cross-National Comparative Studies in Homicide." Pp. 125-48 in *Homicide: A Sourcebook of Social Research* edited by M. Dwayne Smith and Margaret A. Zahn. Thousand Oaks, CA: Sage.
- , 2005. "Evidence for Elite Convergence in Cross-National Homicide Victimization Trends, 1956 to 2000." *Sociological Quarterly* 46: 191-211.
- LaFree, Gary and Kriss A. Drass. 1997. "African American Collective Action and Crime, 1955-91." *Social Forces* 75(3): 835-54.
- , 2002. "Counting Crime Booms Among Nations: Evidence for Homicide Victimization Rates, 1956 to 1998." *Criminology* 40(4): 769-800.
- LaFree, Gary and Andromachi Tseloni. 2006. "Democracy and Crime: A Multilevel Analysis of Homicide in Forty-Four Countries, 1950-2000." *Annals of the American Academy of Political Science* 605: 26-49.
- Land, Kenneth C. and Lawrence E. Cohen. 1987. "Age Structure and Crime: Symmetry and Asymmetry and the Projection of Crime Rates Through the 1990s." *American Sociological Review* 52(2): 170-83.
- Land, Kenneth C. and Patricia L. McCall. 2001. "The Indeterminacy of Forecasts of Crime Rates and Juvenile Offenses." Appendix B in National Research Council, *Juvenile Crime, Juvenile Justice* edited by Joan McCord, Cathy Spatz Wisdom and Nancy A. Crowell. Washington, D.C.: National Academy Press.

- Land, Kenneth C., Patricia L. McCall and Lawrence E. Cohen. 1990. "Structural Covariates of Homicide Rates: Are There Any Invariance Across Time and Social Space?" *American Journal of Sociology* 95(4): 922-63.
- Lappi-Seppälä, Tapio. 2011. "Explaining Imprisonment in Europe." *European Journal of Criminology* 8(4): 303-28.
- Lappi-Seppälä, Tapio and Martti Lehti. 2014. "Cross-Comparative Perspectives on Global Homicide Trends." *Crime and Justice* 43(1): 135-230.
- Lehoucq, Fabrice and Anibal Perez-Linan. 2014. "Breaking Out of the Coup Trap: Political Competition and Military Coups in Latin America." *Comparative Political Studies* 47(8): 1105-29.
- Levitt, Steven D. 1996. "The Effect of Prison Population Size on Crime Rates: Evidence from Prison Overcrowding Litigation." *The Quarterly Journal of Economics* 111(2): 319-51.
- .. 2004. "Understanding Why Crime Fell in the 1990s: Four Factors that Explain the Decline and Six that Do Not." *Journal of Economic Perspectives* 18(1): 163-90.
- Liedka, Raymond V., Anne Morrison Piehl and Bert Useem. 2006. "The Crime-Control Effect of Incarceration: Does Scale Matter?" *Criminology & Public Policy* 5(2): 245-76.
- Lipsey, Mark W. and Francis T. Cullen. 2007. "The Effectiveness of Correctional Rehabilitation: A Review of Systematic Reviews." *Annual Review of Law and Social Science* 3: 297-320.
- Lloyd, Jennifer E. V., Jelena Obradovic, Richard M. Carpiano, and Frosso Motti-Stefanidi. 2013. "JMASM 32: Multiple Imputation of Missing Multilevel, Longitudinal Data: A

- Case When Practical Considerations Trump Best Practices?" *Journal of Modern Applied Statistical Methods* 12(1): 261-75.
- Locke, John. 1948. *Second Treatise of Civil Government*. Edited by C. H. Wilson and R. B. McCallum. London: Basil Blackwell & Mott, Limited.
- Lott Jr., John R. 2013. *More Guns, Less Crime: Understanding Crime and Gun Control Laws*. 3<sup>rd</sup> edition. Chicago, IL: The University of Chicago Press.
- Luckenbill, David F. 1977. "Criminal Homicide as a Situated Transaction." *Social Problems* 25(2): 176-86.
- MacDonald, Heather. 2016. *The War on Cops: How the New Attack on Law and Order Makes Everyone Less Safe*. New York: Encounter Books.
- Maguire, Edward R., Justin Nix and Bradley A. Campbell. 2017. "War on Cops? The Effects of Ferguson on the Number of U.S. Police Officers Murdered in the Line of Duty." *Justice Quarterly* 34(5): 739-58.
- Mann, Michael. 1984. "The Autonomous Power of the State: Its Origins, Mechanisms and Results." *European Journal of Sociology* 25(2): 185-213.
- Marcouiller, Douglas and Leslie Young. 1995. "The Black Hole of Graft: The Predatory State and the Informal Economy." *The American Economic Review* 85(3): 630-46.
- Maume, Michael O. and Matthew R. Lee. 2003. "Social Institutions and Violence: A Sub-National Test of Institutional Anomie Theory." *Criminology* 41(4): 1137-72.
- McCall, Patricia L. and Jonathan R. Brauer. 2014. "Social Welfare Support and Homicide: Longitudinal Analyses of European Countries from 1994 to 2010." *Social Science Research* 48: 90-107.

- McCall, Patricia L. and Joshua A. Hendrix. 2015. "Crime Trends and Debates." Pp. 194-202 in *International Encyclopedia of Social and Behavioral Sciences* edited by James D. Wright. Oxford: Elsevier.
- McCall, Patricia L., Kenneth C. Land, Cindy Brooks Dollar and Karen F. Parker. 2013. "The Age Structure-Crime Relationship: Solving a Long-Standing Puzzle." *Journal of Quantitative Criminology* 29: 167-90.
- McCall, Patricia L., Karen F. Parker and John M. McDonald. 2008. "The Dynamic Relationship between Homicide Rates and Social, Economic, and Political Factors from 1970 to 2000." *Social Science Research* 37(3): 721-35.
- McVeigh, Rory. 2006. "Structural Influences on Activism and Crime: Identifying the Social Structure of Discontent." *The American Journal of Sociology* 112(2): 510-66.
- Merton, Robert K. 1938. "Social Structure and Anomie." *American Sociological Review* 3(5): 672-82.
- , 1967. "On Sociological Theories of the Middle Range." Pp. 39-72 in *On Theoretical Sociology*. New York: Free Press.
- Messner, Steven F., Benjamin Pearson-Nelson, Lawrence E. Raffalovich, and Zachary Miner. 2011. "Cross-National Homicide in the Latter Decades of the Twentieth Century: Losses and Gains in Institutional Control?" Pp. 65-89 in *Control of Violence: Historical and International Perspectives on Violence in Modern Societies* edited by Wilhelm Heitmeyer, Heinz-Gerhard Haupt, Adrea Kirschner, and Stefan Malthaner. New York: Springer Science.
- Messner, Steven F., Lawrence E. Raffalovich, and Peter Shrock. 2002. "Reassessing the Cross National Relationship between Income Inequality and Homicide Rates:

- Implication of Data Quality Control in the Measurement of Income Distribution.”  
*Journal of Quantitative Criminology* 18(4): 377-95.
- Messner, Steven F. and Richard Rosenfeld. 1994. *Crime and the American Dream*. Belmont, CA: Wadsworth Publishing Company.
- , 1997. “Political Restraint of the Market and Levels of Criminal Homicide: A Cross National Application of Institutional-Anomie Theory.” *Social Forces* 75(4): 1393-1416.
- , 2006. “The Present and Future of Institutional-Anomie Theory.” Pp. 127-48 in *Taking Stock: The Status of Criminological Theory*, edited by Francis T. Cullen, John Paul Wright and Kristie R. Blevins. New Brunswick, NJ: Transaction Publishers.
- Messner, Steven F., Helmut Thome and Richard Rosenfeld. 2008. “Institutions, Anomie, and Violent Crime: Clarifying and Elaborating Institutional Anomie Theory.”  
*International Journal of Conflict and Violence* 2(2): 163-81.
- Miethe, Terance D. and Kriss A. Drass. 1999. “Exploring the Social Context of Instrumental and Expressive Homicides: An Application of Qualitative Comparative Analysis.”  
*Journal of Quantitative Criminology* 15(1): 1-21.
- Miller, Jody. 1998. “Up it Up: Gender the Accomplishment of Street Robbery.” *Criminology* 36(1): 37-66.
- Moffitt, Terrie E. 1993. “Adolescent-Limited and Life-Course-Persistent Antisocial Behavior: A Developmental Taxonomy.” *Psychology Review* 100(4): 674-701.
- Mullins, Christopher W., Richard Wright, and Bruce A. Jacobs. 2004. “Gender, Streetlife and Criminal Retaliation.” *Criminology* 42: 911-40.



- Nadanovsky, Paulo and Joana Cunha-Cruz. 2009. "The Relative Contribution of Income Inequality and Imprisonment to the Variation in Homicide Rates Among Developed (OECD) South and Central American Countries." *Social Science & Medicine* 69: 1343-50.
- Nardulli, Peter F., Buddy Peyton and Joseph Bajjalieh. 2015. "Climate Change and Civil Unrest: The Impact of Rapid-onset Disasters." *Journal of Conflict Resolution* 59(2): 310-35.
- Neapolitan, Jerome L. 1997a. *Cross-National Crime: A Research Review and Sourcebook*. Westport, CT: Greenwood Press.
- 1997b. "Homicide in Developing Nations: Results of Research Using a Large and Representative Sample." *International Journal of Offender Therapy and Comparative Criminology* 41(4): 358-74.
- Neumayer, Eric. 2003. "Good Policy Can Lower Violent Crime: Evidence from a Cross-National Panel of Homicide Rates, 1980-1997." *Journal of Peace Research* 40(6): 619-40.
- Nevin, Rick. 2000. "How Lead Exposure Relates to Temporal Changes in IQ, Violent Crime, and Unwed Pregnancy." *Environmental Research* 83(1): 1-22.
- 2007. "Understanding International Crime Trends: The Legacy of Preschool Lead Exposure." *Environmental Research* 104(1): 315-36.
- Nivette, Amy E. 2011. "Cross-National Predictors of Crime: A Meta-Analysis." *Homicide Studies* 15(2): 103-31.
- 2012. "Spatial Patterns of Homicide and Political Legitimacy in Europe." *International Journal of Comparative and Applied Criminal Justice* 36(3): 155-71.

- , 2014. "Legitimacy and Crime: Theorizing the Role of the State in Cross-National Criminological Theory." *Theoretical Criminology* 18(1): 93-111.
- , 2016. "Institutional Ineffectiveness, Illegitimacy, and Public Support for Vigilantism in Latin America." *Criminology* 54(1): 142-75.
- Nivette, Amy E. and Manuel Eisner. 2013. "Do Legitimate Polities have Fewer Homicides? A Cross-National Analysis." *Homicide Studies* 17(1): 3-26.
- O'Brien, Robert M. 2007. "A Caution Regarding Rules of Thumb for Variance Inflation Factors." *Quality & Quantity* 41: 673-90.
- Organization of Economic Co-operation and Development (OECD). 2010. "Factbook 2010: Economic, Environmental and Social Statistics" Retrieved December 15, 2016 ([http://www.oecd-ilibrary.org/sites/factbook-2010-en/11/04/01/index.html?contentType=%2Fns%2FstatisticalPublication%2C%2Fns%2Fchapter&itemId=%2Fcontent%2Fchapter%2Ffactbook-2010-95-en&mimeType=text%2Fhtml&containerItemId=%2Fcontent%2Fchapter%2Ffactbook-2010-95-en&accessItemIds=&\\_csp\\_=4f5272543a5f9d2bef941b4101f970ae](http://www.oecd-ilibrary.org/sites/factbook-2010-en/11/04/01/index.html?contentType=%2Fns%2FstatisticalPublication%2C%2Fns%2Fchapter&itemId=%2Fcontent%2Fchapter%2Ffactbook-2010-95-en&mimeType=text%2Fhtml&containerItemId=%2Fcontent%2Fchapter%2Ffactbook-2010-95-en&accessItemIds=&_csp_=4f5272543a5f9d2bef941b4101f970ae)).
- Organization of Economic Co-operation and Development (OECD). 2017. "Social Expenditure Database (SOCX). Retrieved December 15, 2016 (<http://www.oecd.org/social/expenditure.htm>).
- Oliver, Pamela E. 2008. "Repression and Crime Control: Why Social Movement Scholars Should Pay Attention to Mass Incarceration as a Form of Repression." *Mobilization: The International Journal* 13(1): 1-24.

- Ousey, Graham C. and Matthew R. Lee. 2002. "Examining the Conditional Nature of the Illicit Drug Market-Homicide Relationship: A Partial Test of the Theory of Contingent Causation." *Criminology* 40(1): 73-102.
- , 2010. "To Know the Unknown: The Decline in Homicide Clearance Rates, 1980-2010." *Criminal Justice Review* 35(2): 141-58.
- Papachristos, Andrew V. 2009. "Murder by Structure: Dominance Relations and the Social Structure of Gang Homicide." *American Journal of Sociology* 115(1): 74-128.
- Pinker, Steven. 2011. *The Better Angels of Our Nature*. New York: Viking.
- Pratt, John. 2007. *Penal Populism*. New York: Routledge.
- Pratt, Travis C. and Francis T. Cullen. 2000. "The Empirical Status of Gottfredson and Hirschi's General Theory of Crime: A Meta-Analysis." *Criminology* 38(3): 931-64.
- , 2005. "Assessing Macro-Level Predictors and Theories of Crime: A Meta-analysis." *Crime and Justice* 32: 373-450.
- Pratt, Travis C. and Timothy W. Godsey. 2003. "Social Support, Inequality, and Homicide: A Cross-National Test of an Integrated Theoretical Model." *Criminology* 41(3): 611-43.
- Pridemore, William Alex. 2008. "A Methodological Addition to the Cross-National Empirical Literature on Social Structure and Homicide: A First Test of the Poverty-Homicide Thesis." *Criminology* 46(1): 133-54.
- Pridemore, William Alex and Sang-Weon Kim. 2006. "Democratization and Political Change as Threats to Collective Sentiments: Testing Durkheim in Russia." *The Annals of the American Academy of Political and Social Science* 605(1): 82-103.

- Putman, Robert D. 2000. *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon and Schuster.
- Pyrooz, David C., Scott H. Decker, Scott E. Wolfe and John A. Shjarback. 2016. "Was there a Ferguson Effect on Crime Rates in Large U.S. Cities?" *Journal of Criminal Justice* 46: 1-8.
- Quinney, Richard. 1977. *Class, State, and Crime: On the Theory and Practice of Criminal Justice*. New York: David McKay Company.
- Radelet, Michael L. and Ronald L. Akers. 1996. "Deterrence and the Death Penalty: The Views of the Experts." *Journal of Criminal Law and Criminology* 87(1): 1-17.
- Robbins, Blaine and David Pettinicchio. 2011. "Social Capital, Economic Development, and Homicide: A Cross-National Investigation." *Social Indicators Research* 105: 519-40.
- Rose, Dina R. and Todd R. Clear. 1998. "Incarceration, Social Capital, and Crime: Implications for Social Disorganization Theory." *Criminology* 36(3): 441-80.
- Rosenfeld, Richard. 2011. "The Big Picture: 2010 Presidential Address to the American Society of Criminology." *Criminology* 49(1): 1-26.
- , 2014. "Crime and Inflation in Cross-National Perspective." *Crime and Justice* 43(1): 341-66.
- , 2016. "Documenting and Explaining the 2015 Homicide Rise: Research Directions." *National Institute of Justice*. Washington, D.C.: U.S. Department of Justice.
- Rosenfeld, Richard and Steven F. Messner. 2009. "The Crime Drop in Comparative Perspective: The Impact of the Economy and Imprisonment on American and European Burglary Rates." *The British Journal of Sociology* 60(3): 445-71.
- Roth, Randolph. 2009. *American Homicide*. Cambridge, MA: Harvard University Press.

- Sampson, Robert J. 2008. "Rethinking Crime and Immigration." *Contexts* 7(1): 28-33.
- , 2012. *Great American City: Chicago and the Enduring Neighborhood Effect*. Chicago: University of Chicago Press.
- Sampson, Robert J. and Dawn Jeglum Bartusch. 1998. "Legal Cynicism and (Subcultural?) Tolerance of Deviance: Neighborhood Context of Racial Differences." *Law & Society Review* 32(4): 777-804.
- Sampson, Robert J. and W. Byron Groves. 1989. "Community Structure and Crime: Testing Social-Disorganization Theory." *American Journal of Sociology* 94(4): 774-802.
- Savage, Joanne, Richard R. Bennett and Mona Danner. 2008. "Economic Assistance and Crime: A Cross-National Investigation." *European Journal of Criminology* 5(2): 217-38.
- Savolainen, Jukka. 2000. "Inequality, Welfare State, and Homicide: Further Support for the Institutional Anomie Theory." *Criminology* 38(4): 1021-42.
- Schneider, Friedrich., Andrea Buehn, and Claudio E. Montenegro. 2010. "Shadow economies all over the world: New estimates for 162 countries from 1999 to 2007." Policy Research Working Paper 5356 (Washington, DC: World Bank).
- Seligson, Mitchell A. 2002. "The Impact of Corruption on Regime Legitimacy: A Comparative Study of Four Latin American Countries." *The Journal of Politics* 64(2): 408-33.
- Shaw, Clifford R. and Henry D. McKay. 1969. *Juvenile Delinquency and Urban Areas: A Study of Delinquency in Relation to Differential Characteristics of Local Communities in American Cities*. Revised ed. Chicago: The University of Chicago Press.

- Sherman, Lawrence W. 1993. "Defiance, Deterrence, and Irrelevance: A Theory of the Criminal Sanction." *Journal of Research in Crime and Delinquency* 30(4): 445-73.
- Sherman, Lawrence W., Douglas A. Smith, Janelle D. Schmidt, and Dennis P. Rogan. 1992. "Crime, Punishment, and Stake in Conformity: Legal and Informal Control of Domestic Violence." *American Sociological Review* 57(5): 680-90.
- Solt, Frederick. 2016. "The Standardization World Income Inequality Database." *Social Science Quarterly* 97.SWIID. Version 6.0, July 2017. Accessed July, 15, 2017 (<http://fsolt.org/swiid/>).
- Spelman, William. 2006. "The Limited Importance of Prison Expansion." Pp. 97-129 in *The Crime Drop in America* edited by Alfred Blumstein and Joel Wallman. New York: Cambridge University Press.
- , 2008. "Specifying the Relationship between Crime and Prisons." *Journal of Quantitative Criminology* 24(2): 149-71.
- Stamatel, Janet P. 2009. "Correlates of National-Level Homicide Variation in Post-Communist East-Central Europe." *Social Forces* 87(3): 1423-48.
- Steffensmeier, Darrell J. and Miles D. Harer. 1987. "Is the Crime Rate Really Falling? An "Aging" U.S. Population and its Impact on the Nation's Crime Rate, 1980-1984." *Journal of Research in Crime and Delinquency* 24(1): 23-48.
- Sunshine, Jason and Tom R. Tyler. 2003. "The Role of Procedural Justice and Legitimacy in Shaping Public Support in Policing." *Law & Society Review* 37(3): 513-48.
- Tankebe, Justice. 2013. "Viewing Things Differently: The Dimensions of Public Perceptions of Police Legitimacy." *Criminology* 51(1): 103-35.

- Tanzi, Vito and Ludger Schuknecht. 1997. "Reforming Government: An Overview of Recent Experience." *European Journal of Political Economy* 13: 395-417.
- Tepe, Markus and Pieter Venhuyse. 2010. "Elderly Bias, New Social Risks and Social Spending: Change and Timing in Eight Programmes Across Four Worlds of Welfare, 1980-2003." *Journal of European Social Policy* 20(3): 217-34.
- Tittle, Charles R. 1995. *Control Balance: Toward a General Theory of Deviance*. Boulder, CO: Westview Press, Inc.
- Tonry, Michael. 1997. "Ethnicity, Crime, and Immigration." Pp. 1-29 in *Ethnicity, Crime, and Immigration: Comparative and Cross-National Perspectives* edited by Michael Tonry. Chicago: University of Chicago Press.
- , 2014. "Why Crime Rates are Falling throughout the Western World." *Crime and Justice* 43(1): 1-63.
- Transparency International. 2012. "Corruption Perceptions Index 2012." Retrieved October 25, 2015 ( <http://www.transparency.org/cpi2012/results>).
- Tremaria, Stiven. 2016. "Violent Caracas: Understanding violence and homicide in contemporary Venezuela." *International Journal of Conflict and Violence* 10(1), 62-76.
- Trussell, James and Anne R. Pebley. 1984. "The Potential Impact of Changes in Fertility on Infant, Child and Maternal Mortality." *Studies in Family Planning* 15(6): 267-80.
- Tuttle, James. 2018. "Specifying the Effect of Social Welfare Expenditures on Homicide and Suicide: A Cross-National, Longitudinal Examination of the Stream Analogy of Lethal Violence." *Justice Quarterly* 35(1): 87-113.
- Tyler, Tom R. 2006. *Why People Obey the Law*. Princeton, NJ: Princeton University Press.

- , 2011. "Trust and Legitimacy: Policing in the USA and Europe." *European Journal of Criminology* 8(4): 254-66.
- United Nations. 2014. *Demographic Yearbook*. Retrieved January 15, 2016 (<http://unstats.un.org/unsd/demographic/products/dyb/dyb2014.htm>).
- United Nations. 2015. "World Marriage Data 2015." *Department of Economic and Social Affairs*. Retrieved January 15, 2016 (<http://www.un.org/en/development/desa/population/theme/marriage-unions/WMD2015.shtml>).
- United Nations. 2017. "World Population Prospects 2017." Retrieved January 1, 2017 (<https://esa.un.org/unpd/wpp/Download/Standard/Population/>).
- United Nations Office of Drugs and Crime (UNODC). 2013. *Global Study on Homicide 2013: Trends, Contexts, Data*. Vienna, Austria: United Nations Office of Drugs and Crime.
- United Nations University – World Institute for Development and Economics Research. (2015). *World Income Inequality Database v3.3c*. Retrieved January 15, 2017 (<https://www.wider.unu.edu/download/WIID3.3>).
- Upadhyay, Ushma D., Jessica D. Gipson, Mellissa Withers, Shayna Lewis, Erica J. Ciaraldi, Ashley Fraser, Megan J. Huchko and Ndola Prata. 2014. "Women's Empowerment and Fertility: A Review of the Literature." *Social Science & Medicine* 115: 111-20.
- Van Aelst, Peter and Stefaan Walgrave. 2001. "Who is that (Wo)man in the Street? From the Normalisation of Protest to the Normalisation of the Protestor." *European Journal of Political Research* 39: 461-86.



- Van Dijk, Jan, Andromachi Tseloni and Graham Ferrell, Eds. 2012. *The International Crime Drop: New Directions in Research*. London: Palgrave Macmillan.
- Venkatesh, Sudhir. 2008. *Gang Leader for a Day: A Rogue Sociologist Takes on the Streets*. London, UK: Penguin Books.
- Wacquant, Loic. 1999a. "Urban Marginality in the Coming Millennium." *Urban Studies* 36(10): 1639-47.
- , 1999b. "'Suitable Enemies': Foreigners and Immigrants in the Prisons of Europe." *Punishment & Society* 1(2): 215-22.
- Weber, Max. 1964. *The Theory of Social and Economic Organization*. Edited by Talcott Parsons. New York: The Free Press.
- , 2009. *From Max Weber: Essays in Sociology* edited by H. H. Gerth and C. Wright Mills. New York: Oxford University Press.
- Western, Bruce and Christopher Wildeman. 2009. "The Black Family and Mass Incarceration." *The Annals of the American Academy of Political and Social Science* 621: 221-42.
- Wikström, Per-Olof H. 2006. "Individuals, Settings, and Acts of Crime: Situational Mechanisms and the Explanation of Crime." Pp 61-107 in *The Explanation of Crime* edited by Per-Olof H. Wikström and Robert J. Sampson. New York: Cambridge University Press.
- Wilson, James Q. 1975. *Thinking About Crime*. New York: Basic Books.
- , 1995. "Concluding Essay in Crime," Pp. 488-507 in *Crime* edited by James Q. Wilson and Joan Petersilia. San Francisco, CA: Institute for Contemporary Studies Press.

- Wilson, Margo and Martin Daly. 1985. "Competitiveness, Risk Taking, and Violence: The Young Male Syndrome." *Ethology and Sociobiology* 6(1): 59-73.
- Wintemute, Garen. 2006. "Guns and Gun Violence." Pp. 45-96 in *The Crime Drop in America* edited by Alfred Blumstein and Joel Wallman. New York: Cambridge University Press.
- Witt, Robert and Ann Witte. 2000. "Crime, Prison, and Female Labor Supply." *Journal of Quantitative Criminology* 16(1): 69-85.
- Wolfgang, Martin F. 1957. "Victim Precipitated Criminal Homicide." *Journal of Criminal Law and Criminology* 48(1): 1-11.
- World Bank. 2015b. "GDP per Capita (constant 2005 US\$)." Retrieved October 15, 2015 (<http://data.worldbank.org/indicator/NY.GDP.PCAP.KD>).
- 2017a. "GDP per Capita, PPP Current International \$." Retrieved January 15, 2017 (<https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD>).
- 2017b. "Urban Population (% of Total)." Retrieved October 15, 2017 (<https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS>).
- 2017c. "Mortality Rate, Infant (per 1,000 Live Births)." Retrieved October 15, 2017 (<https://data.worldbank.org/indicator/SP.DYN.IMRT.IN>).
- 2017d. "Inflation, Consumer Prices (Annual %)." Retrieved October 15, 2017 (<https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG>).
- 2017e "Labor Force Participation Rate, Female (% of Female Population Ages 15+) (Modeled ILO Estimate)." Retrieved October 15, 2017 (<https://data.worldbank.org/indicator/SL.TLF.CACT.FE.ZS>).

- World Health Organization (WHO). 2015. "Health Statistics and Information System: WHO Mortality Database." Retrieved January 15, 2015  
([http://www.who.int/healthinfo/mortality\\_data/en/](http://www.who.int/healthinfo/mortality_data/en/)).
- World Prison Briefs. 2017. "World Prison Brief Data." Retrieved October 15, 2017  
(<http://www.prisonstudies.org/world-prison-brief-data>).
- Wirth, Louis. 1938. "Urbanism as a Way of Life." *American Journal of Sociology* 44(1): 1-24.
- Wright, Richard, Erdal Tekin, Volkan Topalli, Chandler McClellan, Timothy Dickinson and Richard Rosenfeld. 2017. "Less Cash, Less Crime: Evidence from the Electronic Benefit Transfer Program." *The Journal of Law and Economics* 60(2): 361-83.
- Zahn, Margaret A. and Patricia L. McCall. 1999. "Homicide in the 20<sup>th</sup>-Century United States: Trends and Patterns." Pp. 10-30 in *Studying and Preventing Homicide: Issues and Challenges* edited by M. Dwayne Smith and Margaret A. Zahn. Thousand Oaks, CA: SAGE Publications.
- Zhao, Ruohui and Liqun Cao. 2010. "Social Change and Anomie: A Cross-National Study." *Social Forces* 88(3): 1209-29.
- Zimring, Franklin E. 2007. *The Great American Crime Decline*. New York: Oxford University. Press.

Table 1  
Descriptive Statistics of 108 Nations, Circa 2012.

	Mean	Standard Deviation	Minimum	Maximum
Homicide Rate	7.98	11.97	.20	90.40
Shadow Economy	29.93	12.41	8.10	63.50
Corruption	-47.53	20.22	-90.00	-15.00
Divorce to Marriage Ratio	.07	.06	.00	.31
Eastern Religion (Dummy)	.25	.44	.00	1.00
Income Inequality	7.72	4.72	2.67	27.16
Human Development Index	.72	.16	.34	.94
Ethnic Fractionalization	.40	.25	.00	.91
Males Aged 15-29	12.18	2.13	7.86	16.13

Table 2  
Bivariate Correlations of 108 Nations, Circa 2012.

	Homicide Rate ( <i>ln</i> )	Shadow Economy	Corruption	Divorce to Marriage Ratio	Eastern Religion (Dummy)	Income Inequality	Human Development Index	Ethnic Fractional- ization	Males Aged 15-29
Homicide Rate ( <i>ln</i> )	1								
Shadow Economy	.62*	1							
Corruption	.57*	.68*	1						
Divorce to Marriage Ratio	-.25*	-.30*	-.49*	1					
Eastern Religion (Dummy)	.04	.20*	.43*	-.41*	1				
Income Inequality	.50*	.18	.12	-.28*	-.19*	1			
Human Development Index	-.57*	-.62*	-.72*	.50*	-.37*	-.17	1		
Ethnic Fractionalization	.39*	.41*	.44*	-.26*	.23*	.05	-.58*	1	
Males Aged 15-29	.66*	.49*	.66*	-.56*	.39*	.36*	-.66*	.41*	1

Note: \* =  $p < .05$

Table 3  
 Ordinary Least Squares Regression Coefficients Estimating Institutional Legitimacy on the  
 Natural Logarithm Homicide Rates of 108 Nations, Circa 2012.

	Model 1	Model 2	Model 3	Model 4
Shadow Economy	.03** (.003)	.02** (.003)	.01** (.003)	.01** (.004)
Income Inequality		.04** (.01)	.04** (.01)	.03** (.01)
Human Development Index		-.37 (.32)	-.51 (.33)	
Ethnic Fractionalization		-.01 (.15)	-.03 (.14)	.06 (.15)
Males Aged 15-29		.07** (.02)	.10** (.02)	.11** (.02)
Corruption			.004* (.002)	.01* (.002)
Divorce to Marriage Ratio			2.03** (.50)	1.87** (.49)
Eastern Religion (Dummy)			-.19* (.09)	-.19* (.09)
<b>R<sup>2</sup></b>	<b>.38</b>	<b>.63</b>	<b>.69</b>	<b>.68</b>

Note: Unstandardized regression coefficients with robust standard errors in parentheses.

\* =  $p < .05$ , \*\* =  $p < .01$  (one-tailed test)

Table 4  
 Supplemental Analyses: Regression Coefficients Estimating Institutional  
 Legitimacy on Natural Logarithm of Homicide Rates, Circa 2012.

	Model 5 WLS, N=106	Model 6 OLS, N=90
Shadow Economy	.01** (.004)	.02** (.009)
Income Inequality	.02* (.007)	.08** (.03)
Human Development Index	-.64 (.64)	1.50 (1.34)
Ethnic Fractionalization	.20 (.15)	-.03 (.35)
Males Aged 15-29	.06** (.01)	.17** (.03)
Corruption	.004 (.003)	.02** (.01)
Divorce to Marriage Ratio	2.30** (.55)	4.86** (1.18)
Eastern Religion (Dummy)	-.28** (.11)	-.67** (.28)
<b>R<sup>2</sup></b>	<b>.71</b>	<b>.69</b>

Note: Unstandardized regression coefficients with standard errors in parentheses.

\* =  $p < .05$ , \*\* =  $p < .01$  (one-tailed test)

Table 5  
Descriptive Statistics of 22 OECD Nations, 1962-2005.

	Mean	Standard Deviation	Minimum	Maximum
Homicide Rate	1.51	1.57	0.00	10.44
Protests per 1,000,000	1.37	3.26	0	35.53
Inflation	6.38	6.94	-.92	82.22
Income Inequality	28.07	4.50	17.76	41.93
Divorce Rate	1.67	1.04	.00	5.23
Percent Aged 15 to 29	22.57	2.32	16.80	28.78
GDP per Capita (In Thousands)	14.84	12.90	.41	79.49
Infant Mortality Rate	12.18	9.40	2.4	78.70
Percent Urban	73.71	11.71	35.72	97.40

Note: Standard deviations are in parentheses. N=135 country-years



Table 6  
Bivariate Correlations of 22 OECD Nations, 1962-2005.

	Homicide Rate	Protests Per 1,000,000	Inflation	Income Inequality	Divorce Rate	Percent Aged 15 to 29	GDP per Capita	Infant Mortality Rate	Percent Urban
Homicide Rate	1								
Protests per 1,000,000	.10*	1							
Inflation	-.04	.26*	1						
Income Inequality	.16*	.30*	.08*	1					
Divorce Rate	.61*	-.10*	-.15*	-.16*	1				
Percent Aged 15 to 29	.19*	.13*	.41*	.05	-.06	1			
GDP per Capita	.07*	-.23*	-.33*	-.10*	.50*	-.47*	1		
Infant Mortality Rate	-.06	.24*	.13*	.17*	-.51*	.12*	-.64*	1	
Percent Urban	.09*	-.13*	-.05	-.34*	.51*	-.15*	.36*	-.49*	1

Note: \* =  $p < .05$ ; N=850 country-years

Table 7  
Pooled Ordinary Least Squares Regression Fixed-Effects Coefficients on  
Homicide Rates of 22 OECD Nations, 1962-2005.

	Model 1 22 Nations (N=968)	Model 2 22 Nations (N=968)	Model 3 20 Nations (N=880)	Model 4 20 Nations (N=880)
Protests per 1,000,000	.01*** (.002)		.004 (.01)	
Protests per 1,000,000 (t-2)		.01*** (.002)		.04** (.01)
Inflation	-.0001 (.002)	-.0001 (.02)	.004*** (.001)	.004*** (.0002)
Income Inequality	-.002** (.001)	-.003*** (.001)	.001 (.001)	.001 (.001)
Divorce Rate	.02 (.02)	.02 (.02)	.002 (.01)	.002 (.01)
Percent Aged 15-29	.02** (.01)	.02** (.01)	.01* (.01)	.01* (.01)
Percent Urban	.02 (.03)	.02 (.04)	.02 (.03)	.02 (.03)
GDP per Capita (In Thousands)	-.01 (.01)	-.01 (.01)	-.004 (.01)	-.004 (.01)
Infant Mortality Rate	-.003*** (.0002)	-.004*** (.0002)	-.003*** (.0002)	-.003*** (.0002)
<b>R<sup>2</sup> -Within</b>	<b>.20</b>	<b>.20</b>	<b>.14</b>	<b>.14</b>

Note: Unstandardized regression coefficients with robust standard errors in parentheses. All fixed-effects models presented control for nation fixed-effects, country-specific trends, common linear trend and period effects. \* =  $p < .10$ , \*\* =  $p < .05$ , \*\*\* =  $p < .01$  (one-tailed test)

Table 8  
Pooled Ordinary Least Squares Regression Fixed-Effects Coefficients on Homicide  
Rates of 20 OECD Nations During Three Periods, 1962-2005.

	Model 5 1962-1980 (N=380)	Model 6 1981-1991 (N=220)	Model 7 1992-2005 (N=280)
Protests per 1,000,000 (t-2)	.01* (.004)	.01 (.01)	.02** (.01)
Inflation	.001 (.001)	.01*** (.004)	-.01 (.01)
Income Inequality	.001 (.001)	.004 (.01)	-.002 (.005)
Divorce Rate	.01 (.01)	-.06* (.04)	-.001 (.02)
Percent Aged 15-29	-.0003 (.01)	.01 (.02)	.02 (.02)
Percent Urban	.04 (.07)	.13*** (.04)	-.01 (.04)
GDP per Capita (In Thousands)	.01 (.01)	-.004 (.005)	-.01 (.01)
Infant Mortality	-.004*** (.0002)	-.03 (.12)	-.01 (.05)
<b>R<sup>2</sup> -Within</b>	<b>.19</b>	<b>.18</b>	<b>.28</b>

Note: Unstandardized regression coefficients with robust standard errors in parentheses. All fixed-effects models presented control for nation fixed-effects, country-specific trends, common linear trend and period effects. \* =  $p < .10$ , \*\* =  $p < .05$ , \*\*\* =  $p < .01$  (one-tailed test)

Table 9  
Descriptive Statistics of 27 OECD Nations, 1993-2005.

	1993	1996	1999	2002	2005
Homicide Rate	2.33 (3.52)	2.14 (2.92)	1.80 (2.32)	1.73 (1.87)	1.54 (1.82)
Imprisonment Rate (t-1)	96.59 (86.24)	106.15 (103.12)	114.74 (115.36)	118.93 (119.28)	128.78 (124.72)
Income Inequality	29.70 (6.66)	30.22 (6.75)	30.23 (6.24)	30.19 (5.85)	30.76 (5.19)
Divorce	1.83 (1.02)	1.91 (.96)	1.99 (.90)	2.13 (.83)	2.14 (.70)
GDP per Capita (in thousands)	18.77 (6.49)	21.45 (7.14)	24.70 (8.44)	28.57 (9.76)	32.33 (11.29)
Aged 15-29	23.04 (.03)	22.11 (.03)	21.30 (.03)	20.63 (.03)	20.15 (.03)
Percent Urban	74.97 (10.26)	75.64 (10.08)	76.24 (9.89)	77.08 (9.79)	77.94 (9.79)
Female Labor Force Participation	48.00 (10.04)	48.98 (9.33)	50.13 (9.13)	50.99 (9.33)	51.91 (9.37)
Infant Mortality Rate	9.20 (9.35)	7.85 (7.95)	6.86 (6.56)	6.11 (5.36)	5.41 (4.42)
Inflation	7.31 (13.65)	7.05 (16.27)	4.56 (12.47)	3.97 (8.30)	2.52 (1.83)
Social Welfare Expenditures	19.70 (7.39)	19.21 (6.83)	19.00 (6.05)	19.41 (5.99)	19.85 (5.86)

Note: Standard deviations are in parentheses. N=135 country-years

Table 10  
Bivariate Correlations of 27 OECD Nations, 1993-2005.

	Homicide Rate	Imprisonment Rate (-1)	Income Inequality	Divorce	GDP per Capita
Homicide Rate	1				
Imprisonment Rate (t-1)	.43* (.00)	1			
Income Inequality	.53* (.00)	.33* (.0001)	1		
Divorce	-.06 (.48)	.42* (.00)	-.41* (.00)	1	
GDP per Capita	-.24* (.004)	.12 (.18)	-.44* (.00)	-.66* (.00)	1
Aged 15-29	.44* (.00)	.05 (.58)	.65* (.00)	-.55* (.00)	-.66* (.00)
Percent Urban	-.01 (.95)	-.03 (.76)	-.43* (.00)	-.43* (.00)	.36* (.00)
Female Labor Force Participation	-.13 (.13)	.12 (.16)	-.56* (.00)	.61* (.00)	.37* (.00)
Infant Mortality Rate	.45* (.00)	.05 (.60)	.72* (.00)	-.44* (.00)	-.54* (.00)
Inflation	.16 (.06)	-.03 (.75)	.52* (.00)	-.40* (.00)	-.43* (.00)
Social Welfare Expenditures	-.44* (.00)	-.22* (.01)	-.66* (.00)	.26* (.003)	.30* (.001)

Note: \* =  $p < .05$ ; Standard deviations are in parentheses. N=135 country-years

Table 10  
 Bivariate Correlations of 27 OECD Nations, 1993-2005 (continued).

	Aged 15-29	Percent Urban	Female Labor Force Participation	Infant Mortality	Inflation	Social Welfare Expenditure
Aged 15-29	1					
Percent Urban	-.34* (.0001)	1				
Female Labor Force Participation	-.44* (.00)	.39* (.00)	1			
Infant Mortality Rate	.68* (.00)	-.31* (.0002)	-.55* (.00)	1		
Inflation	.50* (.00)	-.30* (.0004)	-.44* (.00)	.88* (.00)	1	
Social Welfare Expenditures	-.75* (.00)	.14 (.10)	.21* (.01)	-.55* (.00)	-.40* (.00)	1

Table 11  
Pooled Ordinary Least Squares Regression Fixed-Effects Coefficients on the Natural  
Logarithm of Homicide Rates of 27 OECD Nations, 1993-2005.

	Model 1 27 Nations 1993-2005 (N=135)	Model 2 25 Nations 1993-2005 (N=125)	Model 3 25 Nations 1996-2005 (N=100)	Model 4 25 Nations 1996-2005 (N=100)
Imprisonment Rate (-1)	-.56*** (.19)	-.52** (.21)	-.01*** (.004)	-.62** (.27)
Income Inequality	.03* (.02)	.01 (.01)	.04* (.03)	.02 (.02)
Divorce	-.03 (.09)	-.03 (.09)	-.14 (.15)	-.08 (.12)
GDP per Capita (In Thousands)	.01 (.02)	.0004 (.02)	-.07* (.05)	-.02 (.03)
Percent Aged 15-29	.02 (.03)	.01* (.003)	.001 (.01)	.06 (.05)
Percent Urban	.01 (.04)	.01 (.04)	.07 (.13)	-.02 (.05)
Female Labor Force Participation	.04** (.02)	.04* (.02)	.03 (.03)	.03 (.04)
Infant Mortality Rate	.09* (.06)	.03 (.06)	-.09 (.15)	-.02 (.10)
Inflation	-.0007 (.003)	.01 (.01)	.03 (.03)	.03 (.03)
Social Welfare Expenditures (t-2)	-.02 (.02)	-.01 (.02)	-.01 (.02)	-.001 (.03)
<b>R<sup>2</sup> -Within</b>	<b>.84</b>	<b>.80</b>	<b>.71</b>	<b>.77</b>

Note: Unstandardized regression coefficients with robust standard errors in parentheses.  
\* =  $p < .10$ , \*\* =  $p < .05$ , \*\*\* =  $p < .01$  (one-tailed test)

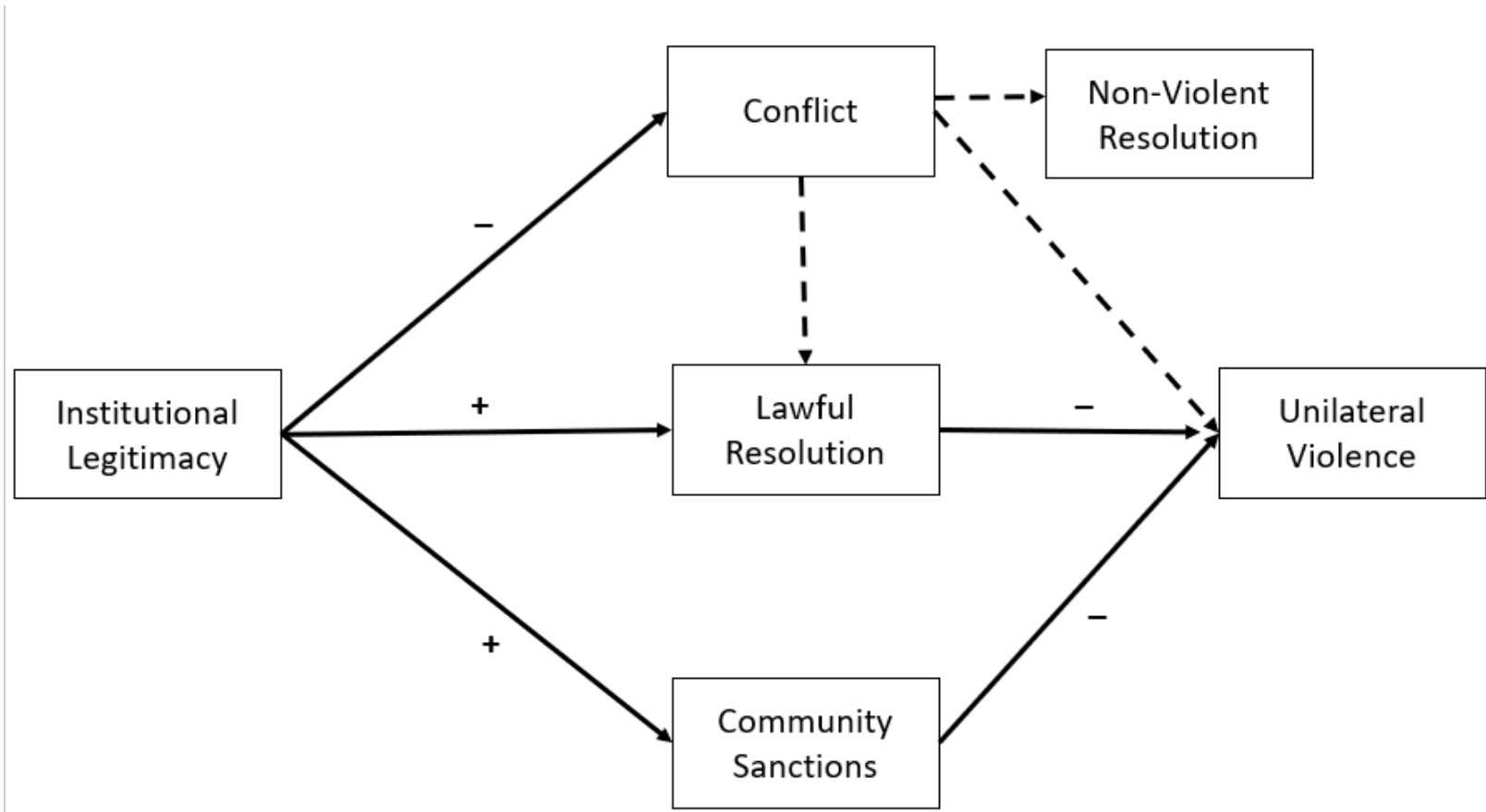


Figure 1

Theoretical Mechanisms Connecting Institutional Legitimacy to Reductions in Violent Crime.



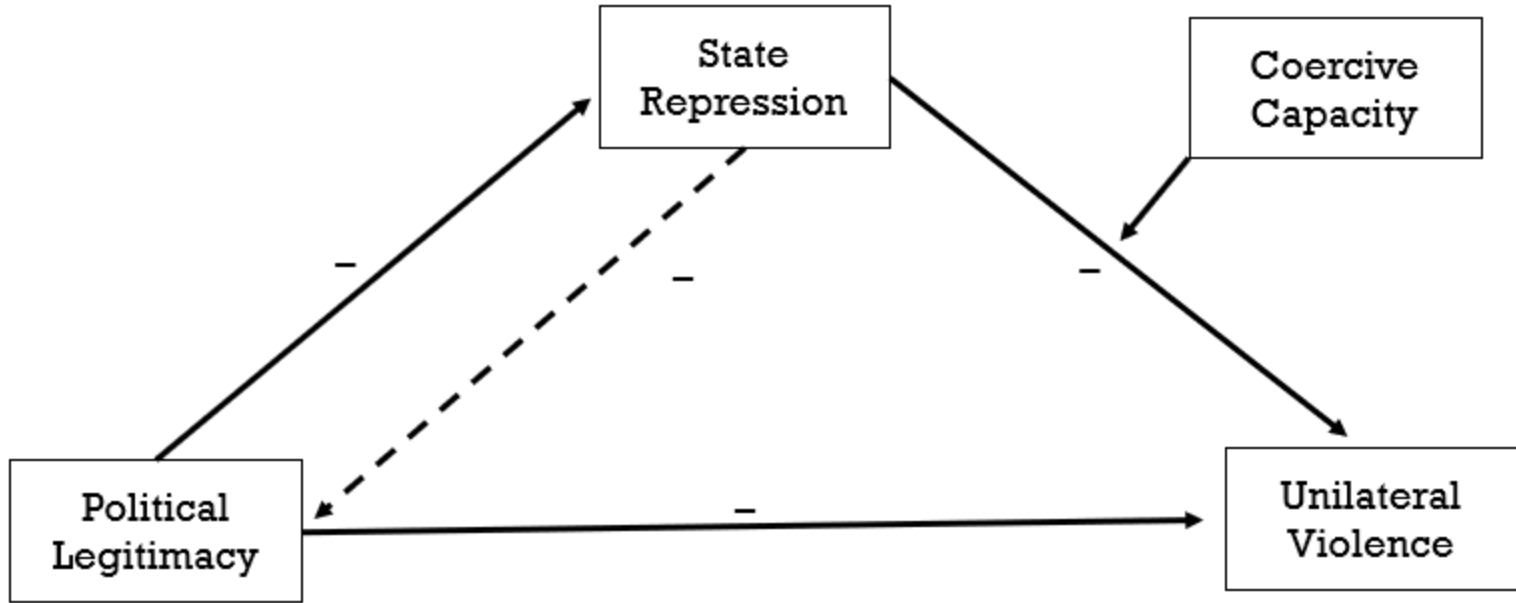


Figure 2  
Relationship between Political Legitimacy, State Repression and Violent Crime.

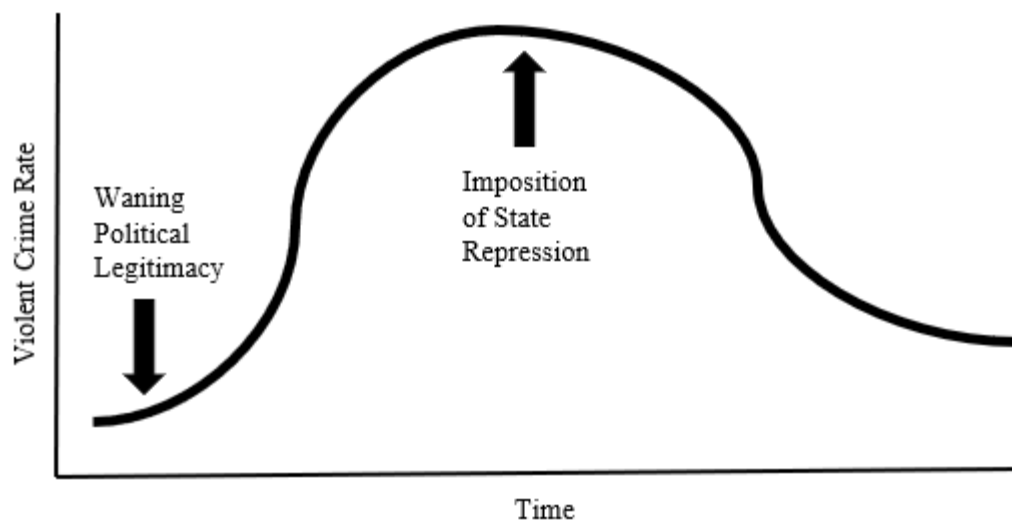


Figure 3  
Temporal Relationship between Waning Political Legitimacy, Rates of  
Violent Crime and State Repression.

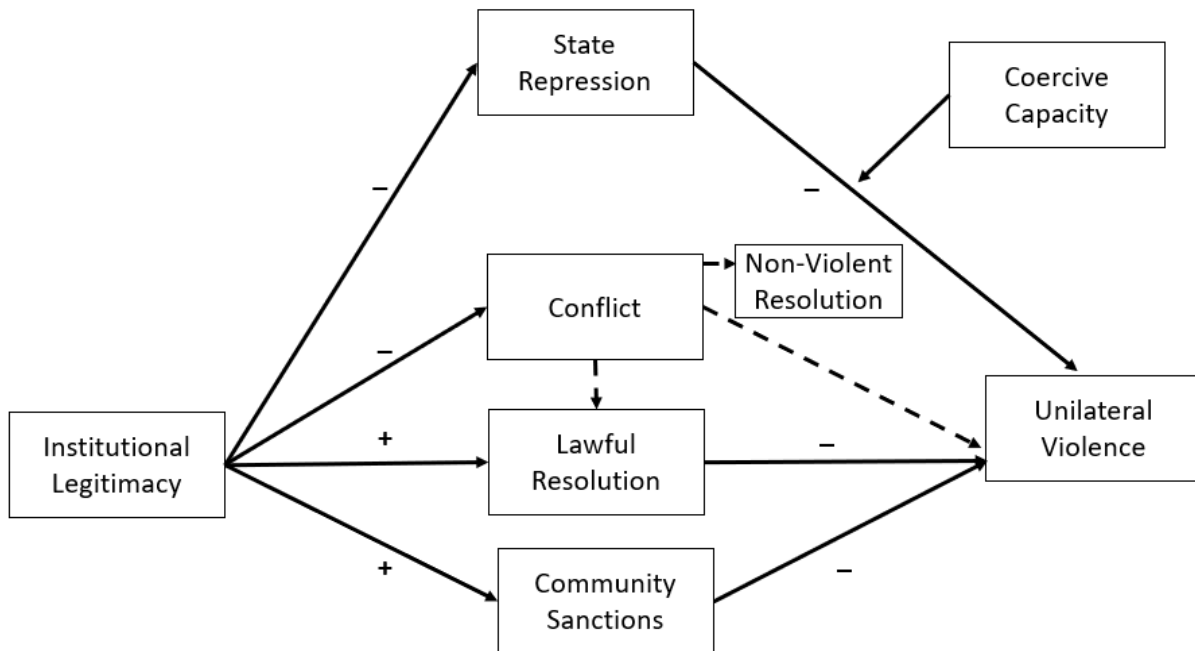


Figure 4  
Full Theoretical Model of Institutional Legitimacy Theory.

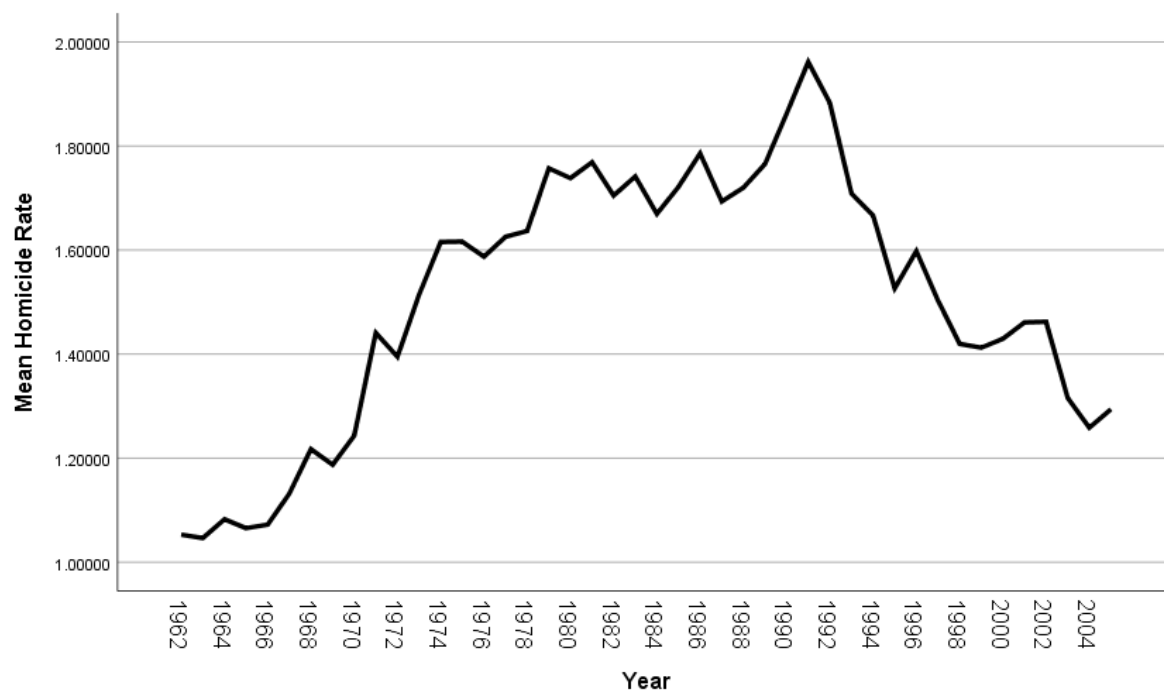


Figure 5  
Homicide Rates Across 22 OECD Nations, 1962-2005.

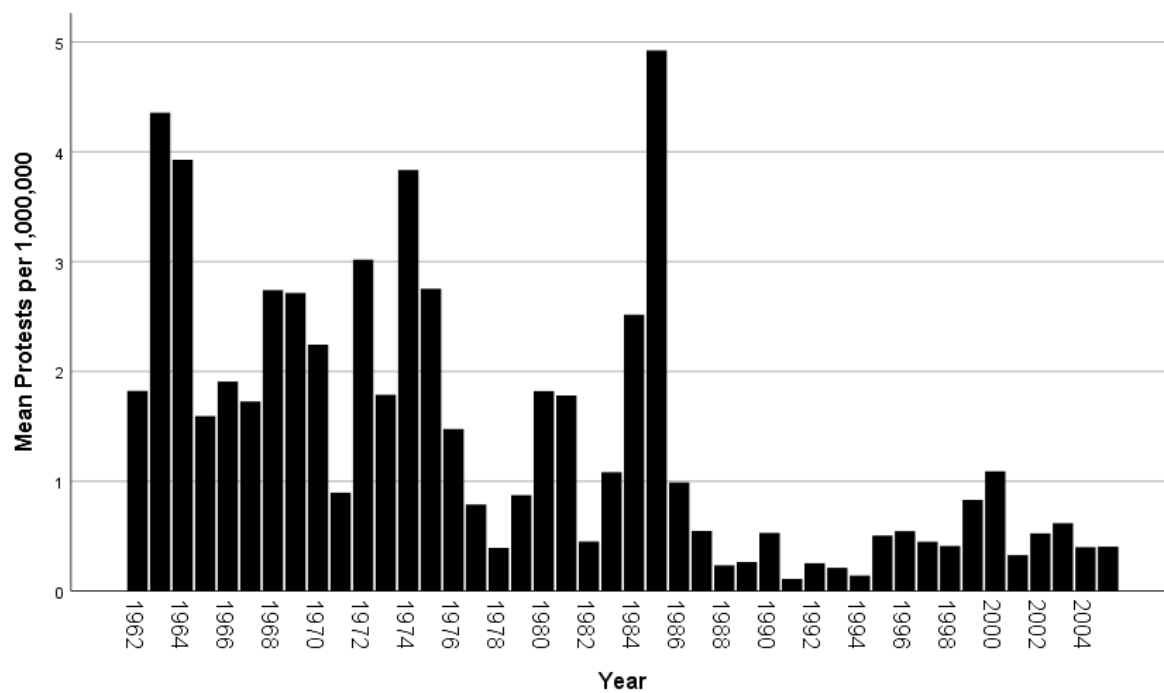


Figure 6  
Protests per 1,000,000 across 22 OECD Nations, 1962-2005.

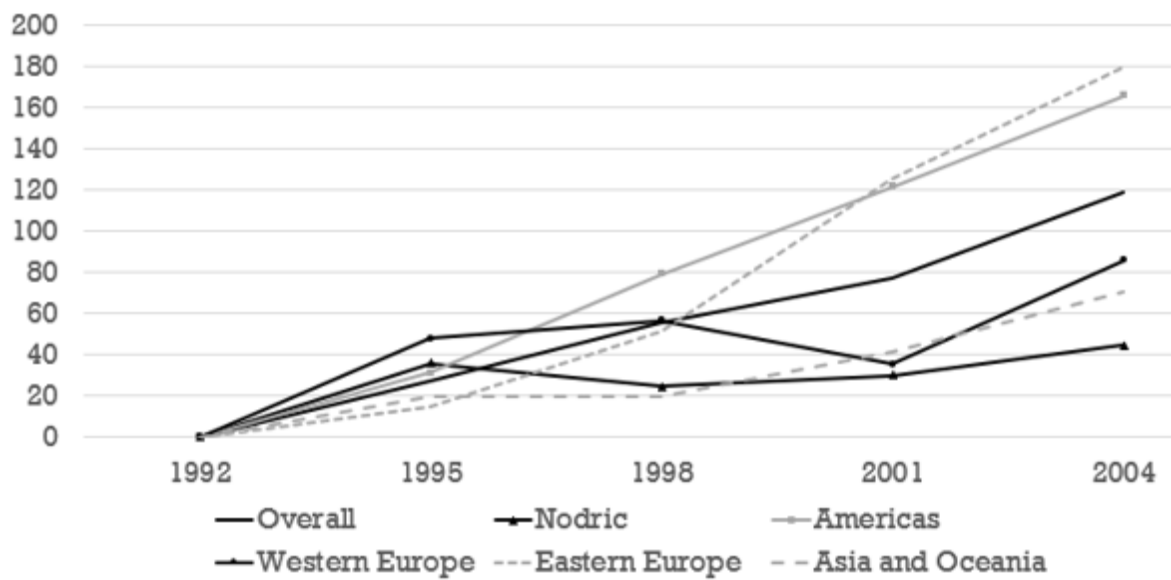


Figure 7  
Percent Increase in Repression Index across 27 OECD Nations, 1992-2004.

**APPENDICES**

Appendix A  
List of Nations and Political Territories Included in Sample of 108 Nations.

Albania	Hong Kong	The Philippines
Argentina	Hungary	Poland
Armenia	Iceland	Portugal
Australia	India	Romania
Austria	Indonesia	Russia
Azerbaijan	Iran	Rwanda
The Bahamas	Ireland	Sierra Leone
Bangladesh	Italy	Singapore
Belarus	Jamaica	Slovakia
Belgium	Japan	Slovenia
Bolivia	Jordan	South Africa
Bosnia and Herzegovina	Kazakhstan	South Korea
Brazil	Kenya	Spain
Bulgaria	Kyrgyzstan	Swaziland
Burkina Faso	Laos	Sweden
Burundi	Latvia	Switzerland
Cambodia	Lesotho	Tajikistan
Cameroon	Liberia	Tanzania
Canada	Lithuania	Thailand
Cabo Verde	Luxembourg	Togo
China	Malawi	Turkey
Costa Rica	Malaysia	The United Kingdom
Croatia	Mali	Ukraine
Cyprus	Malta	Uruguay
The Czech Republic	Mauritius	The United States
Denmark	Mexico	Vietnam
The Dominican Republic	The Republic of Moldova	Zambia
Ecuador	Mongolia	
Egypt	Mozambique	
El Salvador	Myanmar	
Estonia	Namibia	
Ethiopia	Nepal	
Finland	The Netherlands	
France	New Zealand	
Germany	Niger	
Ghana	Nigeria	
Greece	Norway	
Guinea	Pakistan	
Guyana	Panama	
Honduras	Peru	



Appendix B  
Pooled Ordinary Least Squares Regression Fixed-Effects Coefficients on  
Homicide Rates of 20 OECD Nations, 1983-2005.

(N=440)	
Protests per 1,000,000 (t-2)	.01** (.01)
Inflation	.01** (.003)
Income Inequality	-.004 (.01)
Divorce Rate	-.01 (.02)
Percent Aged 15-29	.02 (.01)
Percent Urban	-.04 (.04)
GDP per Capita (In Thousands)	.01 (.01)
Infant Mortality	.04 (.05)
Social Welfare Expenditures (t-3)	-.01** (.003)
<b>R<sup>2</sup> -Within</b>	
	<b>.15</b>

Note: Unstandardized regression coefficients with robust standard errors in parentheses. All fixed-effects models presented control for nation fixed-effects, country-specific trends, common linear trend and period effects. \* =  $p < .10$ , \*\* =  $p < .05$ , \*\*\* =  $p < .01$  (one-tailed test)