4-2012

A Cross-National, Longitudinal Test of Institutional Anomie Theory

Marc Alan Kittleson
Western Michigan University

A CROSS-NATIONAL, LONGITUDINAL TEST OF INSTITUTIONAL ANOMIE THEORY

by

Marc Kittleson

A Thesis
Submitted to the
Faculty of the Graduate College
In Partial Fulfillment of the
Requirements for the
Degree of Master of Philosophy
Department of Sociology
Advisor: Susan Carlson, Ph.D

Western Michigan University
Kalamazoo, Michigan
April 2012

A CROSS-NATIONAL, LONGITUDINAL TEST OF INSTITUTIONAL ANOMIE THEORY

Marc Alan Kittleson, M.A.

Western Michigan University, 2012

Institutional anomie theory, developed by Messner and Rosenfeld (1994), explains variations in crime rates across geographic areas and time as resulting from the interrelationship between social institutions and culture. Their theory predicts that when the institution of the economy dominates all other social institutions, and when norms and values focus heavily on monetary success, crime rates will be higher than when there is less dominance of the economy. Institutional anomie theory has been tested using a number of different methods and data from county-level to international-level aggregates. This study addresses the research question of whether variations in crime victimization can be explained across European nations using institutional anomie theory, and whether relationships specified by the theory have changed across time as the European Union has adopted neoliberal labor and welfare policies. The study uses hierarchical generalized linear modeling to test for variations in crime victimization across European countries at four points in time. Using survey data from the European Social Survey, I develop measures of social institutions, and macro-level measures of social institutions that provide a unique test of Messner and Rosenfeld's theory.

TABLE OF CONTENTS

Table of Contents-continued

CHAPTER

LIST OF TABLES

CHAPTER I

INTRODUCTION

Messner and Rosenfeld developed institutional anomie theory based heavily on Merton's anomie theory to explain cross-national differences in crime rates, particularly the higher rates of crime in the United States compared with other advanced capitalist nations, and changes within countries over time. In Messner and Rosenfeld's latest edition of *Crime and the American Dream* (2007), homicide rates are compared across 45 advanced democratic nations. From 1996-2000, all but two of these nations had homicide rates under 2.0 per 100,000, Finland (2.6) and the United States (5.9) were the only two above that mark. As one can see, the U.S. rate was more than double that of Finland's (2007:20-21). Messner and Rosenfeld theorize that higher homicide rates are the result of a social structure that is more subservient to the institution of the economy, and cultural values that heavily stress monetary success. About half of the research testing institutional anomie theory has been done using cross-national data, while the other portion has used only the United States or smaller aggregates from within the United States as the unit of analysis. The most notable examples include Chamlin and Cochran's (1995) test of institutional anomie theory across all 50 states within the United States, and Messner and Rosenfeld's (1997b) test of their own theory in which they used international data to test their hypothesis that homicide rates have a negative relationship with the decommodification of labor within 45 nations. Both of these studies, along with the vast majority other studies testing institutional anomie theory, provide at least partial empirical support for the theory.

The main focus of the current study is to provide a more rigorous test of institutional anomie theory, as well as to cover gaps in the literature. To test the theory, I will use cross-national data to attempt to explain variations in homicide rates across European nations at four points in time. My research question is: Do nations that have a more dominant economy, as an institution, have higher rates of crime victimization? Similar to all other tests of institutional anomie theory, this study uses measures of major institutions as independent variables, while the dependent variable is crime victimization. This study will use a quantitative approach to test institutional anomie.

The major departure from previous literature is the use of advanced multivariate techniques in testing institutional anomie. Quantitative techniques such as ordinary least square (OLS) regression have been used in previous studies such as in Chamlin and Cochran (1995), Messner and Rosenfeld (1997b), and Maume and Lee (2003). OLS regression provides a basic method to provide some support for cause and effect relationships between variables, while being able to control for problems that might be present in the data. However, more advanced techniques have been made available in the past few years that allow researchers to better test for cause and effect relationships between variables over time and at multiple levels of analysis. Batton and Jensen (2002) and Freichs, Munch, and Monika (2008) provide the only studies that use an advanced quantitative approach, time-series analysis. I make a contribution to the literature by providing a study that uses multilevel modeling. This will be accomplished by testing for changes in crime victimization at four different points in time. Overall, I expect to find that the nations with a more dominant economy over other social institutions will have higher crime victimization. This can be tested at different points in time across nations.

A second contribution is the use of survey data as a way to measure social institutions. Only a few studies use survey data to test institutional anomie theory. In addition to the survey data from European Social Survey (ESS), I also use macro-level measures of social institutions that have been used in previous research in a second model. More traditional ways of measuring institutions include percentages or activities within particular institutions. An example of this would be by creating a measure of decommodification to measure the relative strength of the economy over the polity.

The purpose of this study is to expand on the literature testing institutional anomie theory. The next chapter provides a detailed explanation of the original theory stated by Messner and Rosenfeld, as well as its evolution by Messner and Rosenfeld and other authors who theoretically assessed institutional anomie. Chapter 3 gives a brief summary and critique of all the studies that have been published on institutional anomie theory. Chapter 4 details the methods and plan for the analysis. Chapter 5 covers the findings of the models. Finally, Chapter 6 discusses implications of the study for institutional anomie theory, limitations of the current study, and suggestions for future research.

CHAPTER II

THE DEVELOPMENT OF INSTITUIONAL ANOMIE THEORY

Merton's Anomie Theory

Messner and Rosenfeld's explanation of variations in crime rates across social units has its roots in Robert Merton's work on anomie theory. Merton (1938) suggested that the cultural structure and the social structure are interrelated with one another and help create conditions that lead to higher crime rates. The emphasis on material success in the United States is due to cultural values that stress monetary success. At the same time

> …the pressure of prestige-bearing success tends to eliminate the effective social constraint over means employed to this end. 'The-end-justifies-the-means' doctrine becomes a guiding tenet for action when the cultural structure unduly exalts the end and the social organization unduly limits possible recourse to approved means (Merton 1938:681).

High crime rates are due to the erosion of adherence to institutionalized norms for achieving monetary success. This is referred to as a strain toward anomie and use of innovative practices. Even with high levels of social inequality, every member of society is expected to reach the same goals. People unable to reach these culturally-defined goals, even with access to legitimate means, nonetheless will still feel the pressure to achieve these goals, and will sometimes turn to illegitimate means to accomplish these goals, a process Merton refers to as innovation.

Merton (1957) expanded on and critiqued his own theory throughout his career. The main addition to his original 1938 work is the concept of the American Dream and how it is perceived in terms of monetary success. Merton also adds that equivalent

legitimate means must exist for all to reach cultural goals. If these goals are not attainable, then crime will increase.

Thus, according to Merton, all in U.S. society are socialized to the same cultural goals of material success. The cultural structure places too much emphasis on these goals while deemphasizing the importance of following normative means (e.g., educational attainment and hard work) for achieving these culturally prescribed goals, while the social structure blocks access to the legitimate means for achieving success for those at the bottom of the socioeconomic hierarchy. The result is both higher crime rates in the United States than in other nations that have more of a cultural balance between goals and means for achieving them coupled with a more open opportunity structure of access to legitimate means for success, and changes in crime rates within the United States over time. Messner and Rosenfeld build on these ideas in developing their institutional anomie theory.

Messner and Rosenfeld's Institutional Anomie Theory

Two criminologists who followed up and expanded on Merton's work on anomie theory are Steven F. Messner and Richard Rosenfeld. However, Messner and Rosenfeld (2007) conclude that

> The anomie perspective as developed by Merton and his followers does not… provide a fully comprehensive sociological explanation of crime in America. The most conspicuous limitation of Merton's analysis is that it focuses exclusively on one aspect of social structure: inequality in access to the legitimate means for success. As a consequence, it does not explain how specific features of the broader institutional structure of society, beyond the stratification system, interrelate to produce the anomic pressures that are responsible for crime (14).

The last sentence in this passage from *Crime and the American Dream* (2007) is the key extension of Merton's work added in Messner and Rosenfeld's institutional anomie

theory. Messner and Rosenfeld believe that one must examine the institutional makeup of society and how these institutions interact with one another, particularly noting if other major institutions such as the polity, family, and education share a balance of power with the economy, or if they instead are subordinated to it. Messner and Rosenfeld agree with Merton that the concept of the American Dream is something unique to the United States and does not exist in other nations.

As noted earlier, the American Dream represents "a commitment to the goal of material success, to be pursued by everyone in society, under conditions of open, individual competition" (Messner and Rosenfeld 2007:68). However, the playing field is not equal. Messner and Rosenfeld see the American Dream as representing four cultural values—achievement, individualism, universalism, and the fetishism of money. Achievement simply refers to a person achieving a goal they set for themselves. Individualism is something that is revered in the United States, as much of the framework of the United States is based on individual rights and autonomy. This is also tied into achievement as people are supposed to achieve the goals they set on their own. This makes every citizen competitive and impedes an individual's pursuit of the American Dream, and these aspects of culture together can create a strain toward anomie. Universalism relates to societal goals being largely determined by American culture. Whether or not an individual achieves these goals, mostly monetary goals, dictates how likely they are to be perceived as a success or failure. One can see how this last statement alone could create a strain toward anomie in a social environment. The final cultural value that is probably the most unique in the United States is the fetishism of money. The fetishism of money occurs when money takes on a life of its own. Besides what can be

purchased with money, the possession of it takes on value of its own, and possession of money alone becomes a symbol of success. Because of this, money is the ultimate symbol of success in the United States. The more money an individual has or appears to have, the more successful they are perceived to be. This can become problematic in the United States as there is no upper limit, one can never have enough money. This can cause norms to lose their power in preventing use of criminal means in accumulating more money. All of these four cultural features combined help make up the American Dream. Culture must be looked at in its relationship with, and impact on and from social structure for one to truly grasp high crime rates in the United States and significantly lower ones elsewhere (Messner and Rosenfeld 2007:68-70).

Societies are composed of and held together by social institutions. These social institutions develop slowly over time and with their stability help establish norms, values, roles, and beliefs in a given society. Messner and Rosenfeld (2007) discuss three important functions that social institutions perform–"adaptation to the environment, mobilize and deploy resources for the achievement of collective goals, and socialize members to accept the society's fundamental normative patterns" (72). For a given society to function, institutions must be coordinated together in an efficient manner with one institution playing one role, while another institution plays another. Messner and Rosenfeld focus on four of the largest and most easily identifiable social institutions, namely, education, polity, family, and the economy.

Messner and Rosenfeld describe how conflict can arise when institutions become subservient to others. In the United States, the economy has become by far the most dominant institution, as every other major institution serves the interests of the economy.

The economy involves the production and distribution of necessary goods and services. Messner and Rosenfeld explain why an institutional imbalance has occurred, noting that it results because of the inflated importance placed on monetary success goals and acceptance of criminal innovation in meeting these goals.

Three unique interrelated characteristics have caused the economy in the United States to be dominant over all other social institutions—reduced power of noneconomic institutional functions and roles, subservience to economic necessities by other noneconomic institutions, and diffusion of economic norms into other noneconomic institutions realms. An example of the devaluation of noneconomic institutional functions and roles is the role education plays in our society. Education is primarily used as a means to obtain monetary rewards through a job. Education loses its value if it does not provide a means to a monetary reward. As a result, people in the United States use education less and less as a means to better themselves through acquiring knowledge.

An example of accommodation that noneconomic institutions make to meet the needs of economic necessity is the lack of consideration given to parents after giving birth. The United States does not require paid leave for new parents and only when companies have 50 or more employees are they required by law to provide unpaid parental leave. Compare this with most other industrialized nations, which provide generous paid parental leave. With this type of policy in the United States, family roles are subordinated to the economic roles of parents, as is not the case with most similar industrialized nations.

An example of penetration of economic norms into other institutions can be seen in the polity, as politics focus heavily on reducing costs whenever possible. Politicians

often act like business leaders addressing their board of directors, in that they strive to create the most positive climate for profitability as possible. Typically because of this, social welfare programs are not well funded or, if they are, they are imbued with a negative stigma, such as being viewed as a burden for those who work hard (Messner and Rosenfeld 2007:76). The United States in general does not provide a social safety net to vulnerable members of society that equals the one provided by most other industrialized nations.

It is both the cultural and social structures that are interrelated and work together, and as a result, create the environment for particular forms of social behavior. In Messner and Rosenfeld's case, the relationship between the cultural and social structures in the United States explains high crime rates, particularly homicide rates.

> At the cultural level, the dominant ethos of the American Dream stimulates criminal motivations and at the same time promotes a weak normative environment (anomie). At the institutional level, the dominance of the economy in the institutional balance of power undermines the vitality of non-economic institutions, reducing their capacity to control disapproved behavior and support approved behavior (2007:84).

Messner and Rosenfeld (2007) argue that these macrosocial institutions working together in favor of the economy have created higher levels of crime in the United States than in other comparable advanced industrialized nations. Through social safety nets such as social programs for the vulnerable classes, as well as less cultural emphasis on monetary rewards, other nations have been better prepared to stop economic forces from weakening their normative environment and prevent the economy from creating an institutional imbalance in society.

Throughout all four editions of *Crime and The American Dream* (1994, 1997a, 2001, 2007), Messner and Rosenfeld maintain the same thesis that variations in crime

across geographic areas can be explained through structural and cultural orientations that over emphasize monetary success. However, Messner and Rosenfeld expanded on their key concepts as well as provided more detail through use of additional examples. In the 2nd edition they expand on the original thesis by providing statistics for cross-national differences in homicide rates and robbery rates for 16 post-industrial capitalist nations. These figures provide support that the United States, which is Messner and Rosenfeld's case exemplar for institutional anomie, has much higher homicide rates and robbery rates than other nations (1997:20-21).

Also in the 2nd edition, race and gender are considered as important factors that must be taken into consideration when discussing high crime rates in the United States. Messner and Rosenfeld discuss how women are insulated from some of the anomic pressures of the economy within the United States due to the large role they play within the family. This insulation is used to explain why women are much less likely to commit instrumental crimes than men. African Americans, especially males, have little insulation from noneconomic institutions, particularly the family. They are exposed to the full effects of the American Dream, as they are expected to achieve success in the economy, while social controls are weak due to little involvement in family and education institutions (1997:80-81). This part of the theory is later expanded to include juveniles, drugs, and guns as important correlates to take into consideration within the United States.

Finally, throughout the evolution of *Crime and the American Dream*, more attention is paid to the social response to crime and how this has affected crime itself. Messner and Rosenfeld explain that through mass incarceration, crime has continued to

stay at much higher levels than other nations, despite locking up offenders at higher rates than other nations. Messner and Rosenfeld also discuss how street offenders are punished much harshly than white-collar offenders. They explain that these levels of punishment reflect stratification in our society, as white-collar criminals are usually not punished to the same extent as street offenders, due the economic roles white-collar criminals play in our society and the resources they possess (2007:94).

The scope of institutional anomie theory is, for the most part, limited to democratic capitalist nations that are advanced enough to provide some form of social welfare to their citizens. Literature on the topic has shown that many different forms of crime and deviance are applicable as dependent variables. Studies have shown that rates of homicide, robbery, white collar crime, and also other forms of deviance such as cheating, can be explained by institutional anomie theory. As far as independent variables go, all the literature to this point has focused on measures of the major institutions, with measures of the economy always being included as they are necessary in any test of institutional anomie theory. Support has also been provided for institutional anomie in both qualitative and quantitative research.

One of the major criticisms of institutional anomie theory when it was originally developed was the lack of clarity of key concepts. Since then the theory has been better developed throughout the four editions of *Crime and the American Dream*. Some of ambiguities in the key concepts have been clarified by Messner and Rosenfeld (1997b, 2006, 2008) in journal articles. Several other authors have attempted to critique and clarify and develop some of the unaddressed issues in institutional anomie theory. I discuss these more recent contributions to institutional anomie theory next.

Recent Contributions to Institutional Anomie Theory

Bernburg (2002) examines institutional anomie theory by comparing the theory with other classic anomie theories. The author examines Durkheim, Merton, and Polanyi's works along with that of Messner and Rosenfeld. By examining these previous theorists' work, Bernburg attempts to fill in some of the gaps that are present in institutional anomie theory. Many of the gaps that are present are filled in by comparing Merton's theory of anomie with Messner and Rosenfeld's institutional version of the theory. Bernburg does not see institutional anomie theory as just complementary to anomie theory, but rather he argues that the theories could be integrated with each other to create a more complete theory.

Bernburg explains how institutional anomie theory stays faithful to Merton's theory of anomie by focusing on any means necessary to achieve goals. Like Merton, institutional anomie does not see crime as resulting from deregulated ends, but rather from deregulated means of social-action. Messner and Rosenfeld (1994) go beyond Merton in that they note that deregulated means of social action result from an unbalanced institutional structure. This unbalanced institutional structure, with a focus on a dominant economy, creates the anomic cultural ethos present in capitalist market societies (2002:732). Messner and Rosenfeld also believe that the anomic cultural ethos can be present in all capitalist market societies without strong social safety nets, not just the United States.

The notion of a dominant economy, unchecked by other major institutions, is what Polanyi refers to as a disembedded economy. However, Polanyi does not focus on how disembedded the economy is. Durkheim also recognizes a disembedded economy as

a major source of deregulation. Durkheim also acknowledges that a capitalist market economy's anomic ethos is limitless and is universal to all members of society. Bernburg (2002:736) notes that "institutional anomie theory makes use of Merton's elaboration of anomie, but brings us back to the type of social criticism that Durkheim and Polanyi emphasize."

Bernburg further argues that combining macro-level aspects of Messner and Rosenfeld's theory with individual-level aspects of Merton's theory can create a much stronger theory. For example, Merton does not discuss the structures that cultural anomie result from, while Messner and Rosenfeld fail to discuss the unequal distribution of conditions that people face when they react to the anomic environment by committing crimes. Thus, one improvement Bernburg suggests for Messner and Rosenfeld's theory is acknowledging the interrelation between the conditions that create specific goals and norms that are in play that can create potential criminogenic activity (2002:739).

Messner and Rosenfeld (2006) discuss the basic tenets of institutional anomie theory, as well as previous research on the topic, and note several insights and implications from recent research. Messner and Rosenfeld address Bernberg's (2002) critique that states that the theory of institutional anomie has abandoned the Mertonian idea of motivations and opportunities that are conditioned through social stratification. Messner and Rosenfeld agree that motivations and opportunities are important factors in determining whether an individual decides to engage in criminal activities. However, they argue that traditional anomie fails to take into consideration the importance of social institutions and the effects they have on crime (Messner and Rosenfeld 2006:139).

Messner and Rosenfeld also address American cultural exceptionalism, which has received very little attention in research on institutional anomie theory. Cao (2004) and Jensen (2002) found that Americans do not actually differ from other nations in values, goals, and beliefs based on World Values Survey data. However, Messner and Rosenfeld state that some of the questions used from the survey lack validity as they do not capture the meaning of key concepts. For instance, Jensen (2002) used a question that asked respondents if "less emphasis on money and material possessions is a good thing?" Jensen concluded that the United States actually views money and material possessions as less important than other countries based on the United States ranking near the top on this question. However, individuals from nations with little emphasis on materialism would be less likely to say even less emphasis needs to be given to materialism. Nations such as the United States, with a strong emphasis on materialism, would be more likely to have individuals from the country say less emphasis is a good thing (Messner and Rosenfeld 2006:141).

Messner and Rosenfeld also discuss Cao's (2004) conclusions that the United States is no less anomic that most other nations. However, Messner and Rosenfeld see a validity problem once again in how the questions are asked and what they actually measure. For example, Cao uses responses from questions about justifications that were developed by respondents for certain crimes. Cao uses this as a measure of anomie and claims this is evidence that the United States is not an exceptional case in its level of anomie. However, Messner and Rosenfeld note that in a truly anomic society, moral considerations for justifying a crime for obtaining culturally prescribed goals is not necessary. Using the same dataset, Messner and Rosenfeld use the questions on private

ownership and competition as a good thing to demonstrate that the United States does have a greater cultural emphasis on materialism. They agree with Cao that the measurement of anomie can only be narrowly defined (Messner and Rosenfeld 2006:142).

Messner and Rosenfeld conclude that when using survey data, the context of the question is the most important aspect when research is trying to use it as a measure of a theoretical construct. They note that future research needs to be done on the cultural dynamics that underlie institutional anomie theory and that these dynamics can be used to explain cross-national variations in crime. In addition, future research needs to address the connection between institutional anomie theory, criminal motivations, and opportunities (2006:144).

Chamlin and Cochran's (2007) theoretical critique of institutional anomie theory takes into consideration several assumptions that need to be addressed in future research. The authors of this piece argue that certain parts of the theory need to be revised in future work by Messner and Rosenfeld (2007:57) First, Chamlin and Cochran examine the variables used in testing institutional anomie theory in past research. In all editions of *Crime and the American Dream,* Messner and Rosenfeld do not clearly state how theoretical constructs within institutional anomie theory are to be operationalized. Due to this ambiguity, falsifying this theory becomes difficult or impossible (2007:41-42).

A second critique of institutional anomie theory is that the nations that are included in most of the studies, including in *Crime and the American Dream*, are not justified. In *Crime and the American Dream* (1997, 2001, 2007), 16 advanced capitalist nations are used in the sample to examine variations in robbery and homicide rates with

American exceptionalism as the main focus. Chamlin and Cochran (2007) do not see why less advanced capitalist nations cannot be included, as no theoretical justification is given in any of Messner and Rosenfeld's work as to what countries can and cannot be included. Chamlin and Cochran compared the United States with a much larger sample of nations that included many less advanced capitalist countries. The United States ranked 45th out of 70 nations in their examination of homicide rates and 63rd out of 73 nations in their examination of robbery rates (2007:49) This shows that the U.S. crime problem is nowhere near the worst across the globe.

The idea that the United States has a disproportionate emphasis on monetary success is also challenged by these authors. Similar to Jensen (2002), Chamlin and Cochran use the third-wave of the World Values Survey to determine if American respondents value income as the most important feature of work. The United States ranked 19th out of 45 nations with regards to this question, showing that U.S. citizens do not value income more than citizens in some other nations. They also assess whether U.S. citizens have a lower rank with regard to viewing less emphasis on money and material possessions as a good thing. The United States ranked 44th out of 47 in regards to the this question, showing that only three nations ranked higher on this question (2002:53-55) Although this does not by any means completely capture economic dominance within cultural attitudes, it does point to the possibility that U.S. citizens are not as driven by monetary success as Messner and Rosenfeld make it seem.

Baumer (2007) states that Merton's macrolevel explanation of variations in crime and his microlevel strain theory are not two distinct theories, but rather one multilevel theory.

> Merton suggested that the cultural prescriptions and proscriptions of a society are transmitted to individuals through a process of socialization, and individuals who have assimilated those cultural values act in ways that might be expected on the basis of the values to which they have committed, their economic position in the social structure and their risk assessment of various courses of action (2007:66).

Baumer suggests that by using a multilevel theory, one could create a two-level model with the individual level being at the first level and the institutional level being at the second level. Thus, explanations for the variations within a given group can be explained, as well as across macrosocial units.

Messner and Rosenfeld (2008) elaborate on the cultural component institutional anomie theory drawing on the work of two classical theorists, Parsons and Durkheim. They elaborate the core cultural principles of institutional anomie theory by adopting a Parsonian perspective, particularly how Parsons conceptualizes institutions. Messner and Rosenfeld also incorporate the Durkheimian idea of a society's evolution from mechanical to organic solidarity. In a Durkheimian sense, a society that has gone from a collective, mechanical society to an organic society is more likely to experience the break down in norms and cultural values in favor of individualism. This will result in higher rates of deviance and crime. This rise in individualism may have led to a weakening of the nation-state, where nation-states now conform to the notion of individual success. This is particularly evidenced by more socioeconomic inequality and the lowering of taxes.

Testing institutional anomie theory is not well defined in any of the versions of *Crime and the American Dream* (1994, 1997a, 2001, 2007). Messner and Rosenfeld (2008:169) conclude in this piece that patterns of crime and deviant activity besides robbery and homicide can be explained by institutional anomie theory, as a weakening of

norms and controls should have the same effect on all types of deviant and criminal activity.

Vagueness in the units of analysis covered by institutional anomie theory is also considered by Messner and Rosenfeld (2008). They argue that the theory is applicable at many levels, including at the individual level. At the individual level,

> [w]ith respect to the relative valuation of institutional roles, the prediction from IAT is that actors who perceive economic roles to be more attractive and more highly valued than non-economic roles are expected to be at comparatively high risk of criminal behavior, including violent crime (2008:173).

Using individual-level data also allows researchers to adequately create a multilevel model by having individual-level data at the first level and macrolevel data at the second level. However, when using survey data, measures should include the amount or total involvement within a particular institution. Messner and Rosenfeld leave the door open for future modifications to the theory that may strengthen its explanatory power.

The theory itself has mostly changed with regards to how it can be properly tested. Messner and Rosenfeld (2008) state that the theory does not have to be tested across nations. Tests of institutional anomie theory can include forms of deviance that are not necessarily illegal. The current study tests institutional anomie taking into account the theoretical considerations purposed in the aforementioned studies; for instance, using both individual and macro-level data. Thus, institutional anomie theory is tested using multilevel modeling. The next chapter addresses the quantitative research that has been done on the theory. This research helps guide the current study on how to measure variables, as well as modeling techniques that should be given more consideration.

CHAPTER III

REVIEW OF EMPIRICAL LITERATURE

Chamlin and Cochran (1995) conducted the first empirical assessment of institutional anomie theory by testing the hypothesis that "an improvement in economic conditions [should] result in a reduction of instrumental crime only when there is a simultaneous strengthening of noneconomic institutions" (414). In their study, Chamlin and Cochran defined improvement in economic conditions as having fewer families in poverty as a result of stronger social safety nets provided through more social welfare programs and stronger noneconomic institutions that help insulate individuals from anomic pressures. Chamlin and Cochran tested their hypothesis by including measures of three major noneconomic institutions—family, polity, and religion. They also used absolute economic deprivation as a measure for economic dominance within the institutional balance of power

All 50 U.S. states were used as the sample for this test of institutional anomie theory. All measures came from 1980, or the closest year with data available. The percentage of families below the poverty level was used to measure economic dominance. Property crime rates per 1,000 for the year 1980 were used as the dependent variable. Family was measured by a ratio of yearly divorces to yearly marriages per 1,000 in 1980. Religion was measured using Stark's (1997) data for adjusted rate of church membership per 1,000 in1980. Polity was measured by the percentage of voting age individuals who voted in 1980 congressional contests. Racial heterogeneity was measured as the percentage of the state's population that was black in 1980, and the age

structure was operationalized as the percentage of the population aged 18 to 24 in 1980. These latter two variables were included as control variables to account for differences in the age and race composition across states.

Weighted least squares regression was used due to the problem of heteroskedasticity, with each case being weighted by the square root of the 1980 population size of the state. Product terms were created for the respective measures of the family, polity, and religion with the economy. Product terms are brought into the model separately, as bringing all of them in at once caused multicollinearity. Results show that (1995:9) "[h]igher levels of church membership, lower levels of the divorce-marriage ratio, and higher levels of voting participation reduce the criminogenic effects of poverty on economic crime." Separate alternative models were estimated using the Gini index and the unemployment rate as measures of economic dominance. A different measure of the polity, percentage voting in the presidential election in 1980 also was used. Other than with family disruption, all of the results in these alternative models were similar to the first model, leading the authors to conclude that their study provides overall support for institutional anomie theory.

One major limitation in Chamlin and Cochran's study is that it is cross-sectional rather than longitudinal. Research can best test institutional anomie theory over time within an aggregate unit of analysis rather than at a single point in time. To conduct this type of test, multilevel regression analysis should be used in place of OLS regression. Also, institutional anomie theory was originally formulated to be tested on larger aggregates such as nations where there are greater social structural and cultural differences. A third limitation is the exclusion of the noneconomic institution of

education in the model, thus the research underrepresents the institutional balance of power. Fourth, the measure of economic dominance does not capture the strength of the economy in relation to other noneconomic institutions, but rather just economic conditions within states. Finally, many of the analytical procedures were missing in this study or not reported. Tests for normality are not discussed anywhere and results of the follow up models with different measures are not directly available.

In the first cross-national assessment of institutional anomie theory, the originators of institutional anomie theory, Messner and Rosenfeld (1997b), tested the hypothesis that decommodification would vary inversely with homicide rates, with higher decommodification producing lower homicide rates. Following Esping-Andersen (1990), Messner and Rosenfeld (1997:1394) saw decommodification as "the empowerment of the citizenry against the forces of the market…[It] frees people from the market" through provision of goods, services, and income by the state. Moreover, "…decommodification signals that the balance of institutional power in market society has shifted from the economy toward the polity…" (Messner and Rosenfeld 1997:1397). When decommodification is low, the economy dominates the polity; a condition that institutional anomie theory suggests will increase serious crime rates.

Messner and Rosenfeld (1997) collected data for 45 countries at varying levels of capitalist development. They used the natural log of World Health Organization homicide rates per 100,000 people averaged over available years 1980-1990 as the dependent variable in their study. To test their hypothesis, they developed a decommodification index that was the sum of the z-scores of welfare expenditures as a percentage of gross domestic product (GDP), the percentage of welfare spending for

employment injuries, and welfare expenditures per capita. To control for other factors that may explain cross-national differences in homicide rates they included three control variables—the natural log of the sex ratio, an ordinal economic discrimination index developed by Gurr and Scarritt (1989), and a development index that included the natural log of the gross national product (GNP) per capita, the infant mortality rate, the percentage of the population over 64, the percentage of the population living in urban areas, and the life expectancy at birth. To handle missing data, Messner and Rosenfeld used mean substitution, but they also estimated models using listwise deletion of missing data to test the sensitivity of their findings.

In support of institutional anomie theory, Messner and Rosenfeld (1997) found a statistically significant, moderate, negative zero-order correlation between the decommodification index and homicide rates for their sample of 45 nations ($r = -.48$). Ordinary least squares (OLS) regression models including all control variables using all 45 nations and mean substitution of missing data, deleting a possible outlier (Syria) and mean substitution of missing data, and listwise deletion of missing data (N=39) showed a significant, weak, negative relationship between decommodification and homicide rates (β=-.209, β= -.161, and β=-.161, respectively). A series of four additional models eliminating one control variable per model yielded standardized regression coefficients for the effect of decommodification on homicide rates in the same direction and of similar magnitude.

The use of a cross-national sample is the most effective way to capture variations in crime and deviance across nations. The measures do adequately capture the institutional relationship between political and economic institutions. Nonetheless,

Messner and Rosenfeld's research suffers from several limitations. First, as Messner and Rosenfeld (1997:1408) acknowledge, their study is limited to the restraint the political institution exerts on the economy. Thus, it fails to assess the full "balance of power" (p. 1396) among the social institutions that institutional anomie theory purports to affect cross-national differences in crime as well as changes in crime rates over time within nations. A more complete test of institutional anomie theory needs to include measures of the relative dominance of the economy vis-á-vis other social institutions such as the family, religion, and education that all play a role in socialization and informal social control of crime. Second, Messner and Rosenfeld's study is cross-sectional rather than longitudinal. A more complete test of institutional anomie theory not only should examine differences in crime rates across countries, but it should also examine changes over time in crime rates within nations. Such a test would necessitate multilevel regression analysis rather than OLS regression. Finally, Messner and Rosenfeld logged the average homicide rate in order to reduce the considerable positive skewness they found in the distribution of the variable. They reported that this "reduced" the skewness, but did not report whether the residuals of their models were normally distributed and homoskedastic, two necessary assumptions for OLS regression to yield consistent, efficient estimates of standard errors, and thus accurate hypothesis tests. A better approach would be to use poisson or negative binomial regression analyses that are appropriate techniques when the dependent variable is a count of rare events, as it is with the homicide rate.

Savolainen (2000) also tested institutional anomie theory using cross-sectional, cross-national data. Savolainen (2000:1021) hypothesized that "the positive effect of

economic inequality on level of lethal violence is limited to nations characterized by relatively weak collective institutions of social protection." This study builds on previous tests of institutional anomie by Messner and Rosenfeld (1997b). Savolainen used a dataset directly from Messner and Rosenfeld's (1997b) study to try to provide further support for institutional anomie theory. Savolainen also drew from Chamlin and Cochran's (1995) study by including measures that show how strong noneconomic institutions can insulate citizens from the criminogenic effects of a strong economy. This study also sought to clear up the ambiguity of Messner and Rosenfelds's (1997a) analytical model by specifying in more detail the relationships between key theoretical variables that would create a more definitive theory (2000:1025-1026).

The first sample (N= 45) came from Messner and Rosenfeld's (1997b) study on cross-national homicide rate variation. World Health Organization data on homicide deaths averaged from 1980-1990 were used to calculate homicide rates. These rates were logged to reduce skewness from outlier nations. Messner and Rosenfeld's (1997b) measure of decommodification collected from the International Labor Organization was used to measure economic dominance. The other independent variables in this study included a measure of income inequality (based on Gini coefficients from circa 1969), economic discrimination, development index, and sex ratio. A single index of socioeconomic development, a control variable from Messner and Rosenfeld's (1997b) study, was used to reduce problems of multicollinearity. The single index is made up of the items GNP per capita, infant mortality, size of the elderly population, population growth, and levels of urban development. The logged sex ratio was included as a separate

control variable. All variables were computed using multiyear averages for the years1980-1990 (Savolainen 2000:1028).

The second set of data differed slightly from Messner and Rosenfeld's first dataset. First, a different sample (N=32) of nations was used. The second supplementary sample included seven developing market economies from Europe. Due to the limited amount of data available for this area of the world, single year statistics were used for all of the variables, as opposed to the multiyear averages used with the first sample. National homicide rates disaggregated by sex provided two dependent variables for this study, i.e., male and female victimization rates. Disaggregated victimization rates were used to separate the difference in situations under which each sex is likely to be victimized. Research shows that females are more likely to be the victim of a homicide in domestic disputes, while males are more likely to be the victim in crimes related to instrumental gain. A third difference was that the supplementary dataset used the Gini index as the measure for economic inequality, as it was seen by the authors as a better single measure of such inequality. The fourth difference was "the institutional balance of power is measured by the amount of government spending on social security and other welfare programs as a percentage of total public expenditures" (Savolainen 2000:1029). In the supplementary sample, GDP per capita and population age structure (those aged15 to 24 as percentage of the total population) were used as control variables. Sex ratio was also used, but not logged in this model.

Ordinary least squares (OLS) regression was used in this test of institutional anomie theory. Savolaninen also used a p-value of .10 to determine statistical significance due to the small sample size. Interaction terms were created between each of

the noneconomic institutions and the measure of the economy. All interaction terms were centered to reduce potential multicollinearity. The variables that were centered in the first dataset were income inequality, economic discrimination, and decommodification, while in the second set they included income inequality and social security spending (2000:1031).

Along with the follow up to the first dataset, a second sample of nations was used that employed different measures including disaggregated homicide rates by sex and the Gini index as a measure of economic inequality. Only the development index in the first dataset was reported as having serious problems of multicollinearity. The second set had minimal multicollinearity, with no variance inflations factors above 4.0. Mean substitution was used for missing cases for the variables income inequality and economic discrimination.

With the first dataset, Model 1 had all of the explanatory and control variables in the regression. Models 2-3 introduced separate interaction terms into the regression. Models 4-6 were identical to 1-3, except the outlier case (Syria) was removed. Overall, in the first set of models, logged sex ratio was significant in models 1-3 at the .10 level. The decommodification index was significant in models 1, 2, 4, and 5 at the .10 level. The interaction terms for economic discrimination and decommodification were significant at the .10 level in models 3 and 5. The explained variance in these models ranged from .319 in Model 2 to .509 in Model 6 (2000:1032).

The second set of models used the second dataset that was disaggregated by sex. Homicide rates were still used as the dependent variable. Model 1 included all variables and controls, while Model 2 included the interaction terms for a regression done only on

male homicide rates. Models 3 and 4 are the same as 1 and 2, except the regressions were run on female homicide rates. GNP per capita was significant at the .10 level in Model 2. The logged sex ratio was a significant predicator of homicide rates at the .10 level in all four models. Income inequality was significant at the .10 level in models 1, 2, and 4. Welfare spending was a significant predictor of homicide rates in Models 2 and 4. Interactions terms for income inequality and welfare spending were significant in both Models 2 and 4. The explained variance ranged from .379 in Model 1 to .756 in Model 4 (2000:1030-1033).

Overall, Savolainen (2000) found support for institutional anomie theory using both datasets. The interaction terms for economic discrimination and decommodification in the first model set, and the interaction terms for income inequality and welfare spending were both statistically significant predictors of homicide. The use of two cross-national samples is a major strength in this study. The strength of the economy was also measured appropriately using a decommodification index. However, this study is only a partial test of institutional anomie theory due to a lack of measures for the noneconomic institutions. Finally, all of the assumptions were met with regard to OLS regression.

Batton and Jensen (2002) examined the impact of decommodification on homicide rates using time-series analysis within the United States. They hypothesized that decommodification should result in a dampening effect on violent crimes through social welfare programs and policies that will insulate citizens from the pitiless effects of a free-market economy (2002:13). Jensen and Batton looked at several points in time from 1900 to 1997. Studying the period before the beginning of the New Deal should be

able to determine whether homicide rates are historically constant or vary over time. Batton and Jensen (2002:20) hypothesized that under institutional anomie theory

> decommodification should result in lower homicide rates because it (a) buffers the impact of market events and fluctuations and (b) shifts the institutional balance of power, which diminishes anomic pressures and strengthens social control mechanisms.

As noted earlier, Batton and Jensen (2002) used time-series from 1900 to 1997 to study homicide trends within the United States. The dependent variable is measured by NCHS annual homicide mortality rates from 1933 to 1997. Homicide rates within the United States were not reported until 1933 by the NCHS, therefore Batton and Jenson (2002) used econometric-forecasting techniques developed by Eckberg (1995) to estimate the homicide rates within the United States from 1900 to 1932.

> In calculating estimates, Eckberg accounted for the composition of the early death registration area, which largely excluded southern and western states where homicide rates were highest. He also adjusted for differences in the proportions of urban and rural areas in the registration area and nonregistration area states (2002:15).

The independent variable used in this study was a time-series replication of Messner and Rosenfeld's (1997a) decommodificaiton index based on summed z-scores. Batton and Jensen's decommodification index spans the years 1929 to 1995. Inflation was controlled by dividing per capita expenditures by the 1982 to 1984 Consumer Price Index and converting to constant 1982 to 1984 dollars by multiplying by 100.

Several control variables were used for different time periods for explaining other factors that may have caused variations in homicide rates. Cirrhosis deaths per 100,000 were used as a measure of alcohol consumption. For the years 1900 to 1970, data were obtained from *Historical Statistics of the United States* (HSUS), 1971 to 1994 data came from *Vital Statistics* and issues of the *Statistical Abstract of the United States* (SAUS),

and 1995 to 1997 data comes from NCHS web site tables (2002:16). The control variable prohibition legislation was measured with a count variable developed by Cashman in 1981 that reflects states with legislation that enacted prohibition for any given year. A dummy variable for mob-related murders was used for years that murders may have been related to the popular illegal trade of liquor. The control variable immigration was measured as the percentage of the U.S. resident population made up of newly admitted immigrants. Data for this variable came from HSUS (1900-1970) and SAUS (1971-present). HSUS, SAUS, and the Bureau of Labor Statistics web site provided the data for the control variable unemployment rates, which shows the conditions and fluctuations in the market that citizens experienced (2002:17). Divorce rates per 1,000 were used as a control for social integration. The U.S. Bureau of the Census (1931) provided data for 1900 to 1929, while Vital Statistics provided data for the years 1930 to 1982, and SAUS provided the data for 1983 to 1997. Data from HSUS for the years of 1900-1970 and SAUS for the years of 1971-1997 were used to measure the percentage of people in the armed forces. Homicide rates tended to be lower in periods with a high percentage in the armed forces, as military positions are usually filled by those most likely to commit violent crimes, young males. A dummy-coded control variable was used for times that immediately followed wars, which tended to have higher homicide rates. Data were taken from HSUS for the years 1900-1959 and the Centers for Disease Control for 1960-1997. The percentage of the population aged 15 to 24 and 65 and older was used to control for age structure (2002:18).

Ordinary least squares time-series regression was conducted using 2001 EViews software. The assumption of stationarity was tested using Augmented Dickey-Fuller tests.

> The results indicate several of the series contain unit roots in levels and are difference stationary processes. In consideration of problems posed by nonstationarity, we difference our data. However, we also attempt to model the effects of trends and eliminate autocorrelated error terms through the inclusion of theoretically and historically relevant variables (2002:19).

Durbin-Watson statistics for basic-models, Durbin's h for higher ordered processes, Breusch-Godfrey LM test, and Box-Ljung Q test were used to test for autocorrelation and partial auto-correlation. A lagged endogenous term was added to deal with autocorrelation. After testing different break points in time and running recursive models, the model differentiates between two time periods 1900 to 1945 and 1946 to 1997. Controls for prohibition and mob violence were used only for the time periods from 1900 to 1945, while divorce rates were used from 1946 to 1997.

The results of the model showed no significant autocorrelation using the autocorrelation tests. Consistent with the research hypothesis, results revealed that unemployment had a positive effect on homicide in the early period for the level model (b= .117, α= .001) and differenced model (b= .075, α = .01) and good model fit with respective adjusted R^2's of .896 and .337. In the period from 1946 to 1997 unemployment rates had an unexpected negative effect on homicide rates for the level model (b = –.091, α = .05) and the effect became nonsignificant for the differences model (b = .009, α =.86). Rising levels of juvenile violence and more males dropping out of the workforce completely started in the 1980s and gender composition may be responsible for the unexpected negative relationship between unemployment and homicide rates (2002:26).

Carlson and Michalowski (1997) proposed using four different contextual periods from 1933 to 1997. Batton and Jensen (2002:22) follow up on this by replicating using bivariate regression. They found that there

> was a positive and weak (b = .167, α = .000) during exploration (1933-1947), nonsignificant (b = –.115, α = .211) during consolidation (1948-1966), positive and weak-moderate (b = .329, α = .020) during decay (1967-1979), and nonsignificant (b = –.034, α = .854) but in the expected direction during recent exploration (1980-1992)

between unemployment and homicide rates. However, they acknowledge the limitations of not being able to use controls in bivariate regression. Chow breakpoint tests were also run for the total time span (1900 to 1997) and the two time periods used in the model. The test supported the periodization proposed in the models. However, the Chow test should be used with caution as every time period in this research, as well as with a similar model by Carlson and Michalowski (1997) was found to be significant.

The authors of this study concluded that the post World War II period is better conceptualized as one period, as opposed to three distinct eras for explaining variations in homicide rates. Conclusions remain the same with regards to unemployment and homicide rates, no matter if one conceptualizes the first period at one point (1900 to 1945) or two points (1900 to 1932 and 1933 to 1945). Although support was found for institutional anomie theory, change in decommodification was not a significant predicator of homicide rates over time (2002:29). Future research should follow up on Batton and Jensen's work on homicide over time.

This study was the first to use a longitudinal approach necessary to capture in the effect of changes in the social structure on crime rates over time. However, it fails to capture this across different units of analysis that have different institutional structures and cultural values. The use of a decommodification index does capture the strength of the economy. However, the absence of noneconomic institutions in the model, which could capture economic dominance is a serious limitation.

Jensen (2002) went in a much different direction than previous cross-national research on institutional anomie theory. Jensen focused on the limitations of institutional anomie theory, theoretically and empirically. One of the major methodological shortcomings that Jensen noted is how there is a lack of valid and reliable measures for important concepts in institutional anomie theory. A second major limitation Jensen identified is that there is no empirical support or evidence that society embraces the cultural goals that Messner and Rosenfeld discuss as central tenets of their theory. A third major issue is the lack variables from other competing theories used as controls in past studies. Using such control variables can help to establish how much variation in crime rates across nations is explained by key concepts such as decommodification.

Jensen also conducted his own test of institutional anomie theory. He hypothesized "that the United States should rank relatively high among nations in the importance accorded economic roles relative to other activities" (Jensen 2002:58). A second hypothesis was that "the United States should rank relatively high among nations in exhibition of calculating, self-interested and utilitarian standards concerning law breaking" (Jensen 2002:58). Jensen used World Values Survey data with a maximum sample size of 38 nations to find evidence of some of the limitations in institutional anomie theory. Logged homicide rates per 100,000 from World Health Organization data were used as the dependent variable. Using other data sources such as MicroCase Corporation, Lester (1996), and Fox and Levine (2001) to fill in missing data, a maximum sample of 84 nations was available. Jensen used self-report data from the World Values Survey for his measures of the institutions. The measure of decommodification came from the International Labor Organization. All other measures

came from MicroCase Corporation. Jensen measured the strength of each institution based on respondents' answers to how much they value work, leisure, family, and religion as being very important.

Based on the percentages of respondents who answered yes, the United States tied for second for stating that family is very important, as well as fifth and ninth respectively, for stating religion and leisure are very important, while it was fifteenth for the percentage of respondents who said that work was very important. The United States also had the fifth highest response indicating that less emphasis on material possessions would be a good thing.

Next, Jensen ran a bivariate correlations between decommodification and the family using measures of marriage and divorce rates, with birth rates being used as a control variable. He found no statistical evidence that higher decommodification will result in a stronger family. After this, he ran two regression models using logged homicide rates. In the first model divorce rates, birth rates, and marriage rates were used as predictors. In the second model, the four items from the WVS were used as predictors of homicide rates. Jensen did not use both sets of predictors in the same model due to the lower number of nations in the WVS sample (N=34, as opposed to 54 with the first model). With regards to the first two models, Jensen found that only the measure for religion (b= .046) and the control variable of birth rates. (b= -.067) were significant predictors of logged homicide rates. In a third model (N=34), Jensen used the variables importance of religion, decommodification, birth rate, diversity, Latin nation, and per capita wealth as predictors of logged homicide rates. Latin nation, diversity, and per capita wealth were significant at the .05 level, while the variables for decommodification

and religion were not. In the final set of models, Jensen showed how running a regression with decommodification and each significant predictor from the third set of models (N=43) revealed that the relationship between decommodification and homicide rates was not statistically significant (2002:67). Jensen also showed that decommodification and burglary rates were very strongly correlated (r= .864), and including Latin nation, diversity, and wealth per capita as predictors only increased this correlation (2002:68-69).

Jensen concluded that "institutional anomie has serious limitations for explaining both lethal violence and property crime" (2002:69). This remains one of the only studies that openly criticizes institutional anomie theory and had findings that were not supportive. This study did try to introduce different measures to be used when testing institutional anomie theory. However, this study has numerous flaws that should be addressed.

First, this study was cross-sectional and does not examine variations over time that time-series or growth modeling could include. Second, the measures used for noneconomic institutions only covered respondents' opinions on the importance of the institutions, and were not actual indicators of the strength of the institutions that would be tapped better by measures of respondents' involvement with these institutions. The institution of education, which is clearly defined by Messner and Rosenfeld (2007a) as an important institution, was not included in this study.

Maume and Lee (2003) tested institutional anomie theory on a smaller geographic unit within the United States, counties. The authors argued that counties still fit under the criteria of marco-level social unit, as Messner and Rosenfeld never clearly state that nation-states can be the only unit of analysis. They also tested the theoretical emphasis

on instrumental crimes rather than expressive crimes. They expected that noneconomic institutions would mediate the effect of the economy with regards to creating criminogenic pressures, as opposed to moderating the effect of the economy on crime rates. "The analytical focus is on the effects of the prevalence of and commitment to both economic and noneconomic institutions on serious crime, homicide in particular" (2003:1153).

Cross-sectional county-level data from around 1990, with a total of 454 U.S. counties with populations of 100,000 or more, were used in this study. The total number of homicides for each country was obtained from the Supplementary Homicide Reports offender file for the years 1990-1992. Ages below 10 and above 64 were removed, due to the low number of homicides committed by people within these age groups. Using the Supplementary Homicide Report allowed the researchers to separate homicides that were seen as instrumental (usually in the commission of another felony) and expressive (e.g., crimes of passion). The Supplementary Homicide Reports are a good source of data on homicides because most law enforcements agencies participate, the proportional frequency of reporting homicide is much higher than any other crime, the clearance rate is higher with homicide than other crimes, and no better alternatives exist for measuring instrumental versus expressive homicidal deaths (2003:1154).

The measure of strength and dominance of the economy was based on the 1990 Gini coefficient for family income inequality, which was derived from the Census of Population and Housing Summary. The polity was measured using the average of the voting rates for the 1988 and 1992 presidential elections. The lack of commitment to the family was measured as the rate of divorce for people 15 years of age and over.

Education was measured as the average of educational expenditures per person of school age in the county for the years of 1987 and 1992. Religion was measured by the adherence rate to civically-engaged religious denominations for 1990. The social welfare system was also included as a noneconomic institution and was measured as welfare generosity. The measure was made up of average monthly welfare payments per poor person adjusted for cost of living and also the proportion of families receiving welfare. These measures were standardized and averaged into an index. Indicator variables were created at each quartile to account for correlation problems encountered from the 3rd and 4th quartiles. The variable was dummy coded by making counties in the first three quartiles, counties with low to moderate monthly social welfare payments, as 1, while the last quartile, counties with high monthly social welfare payments, as 0 (2003:1157). The first variable that was included to control for the differences in population composition across counties in the model was population structure, which consisted of the z-scores for the logged population size and population density. Second, the percentage of people aged 15-29 was included as this tends to be the most crime prone age group. Percentage of black residents and an indicator for counties in the southern region were used as other control variables.

Negative binomial regression estimation was used in place of OLS, as negative binomial regression is more appropriate when rare events such as homicide are analyzed. A negative binomial estimation strategy was used to predict the rates of the three dependent variables—total homicides, instrumental homicides, and expressive homicides. Multicollinearity did not appear to be problematic according to the variance inflation factors which were all under 2.5. The first series of models used total homicide rates as

the dependent variable, while instrumental and expressive homicide rates were used in the second and third series of models, respectively. The percentage reduction in the effect of the Gini coefficient on homicide was calculated across models.

In the first series of models, only the Gini coefficient and control variables were used in the model with total homicide rates as the dependent variable. Model 2 introduced the noneconomic institutions as a mediation model. Models 3-7 introduced interaction terms for the Gini coefficient and each separate noneconomic institution to test for moderation effects. The Gini coefficient and percent black had a positive effects on the dependent variable and were significant at the .01 level across all 7 models. Population structure had a positive effect on the dependent variable and was significant at the .01 level in Model 1 and at the .05 level in Models 2-3 and 5-7. Voter turnout (negative relationship) and divorce rate (positive relationship) were significant at the .01 level across models 2-6. Welfare expenditures had a positive effect on the dependent variable and was significant at the .01 level across models 2-6 and at the .05 level in Model 7. Only the the interaction term for welfare expenditures and the Gini coefficient used in Model 7 was significant at the .01 level. The percentage reduction in the Gini coefficient from Model 1 to Model 2 was 34.38 percent. This shows evidence of strong mediation of the effect of the economy on homicide rates by noneconomic institutions. The pseudo R^2 for Model 1 ranged from .07 to.09 for Models 2-7.

In the second series of models, only the Gini coefficient and control variables were used in the model with instrumental homicide rates as the dependent variable. Model 2 introduced the noneconomic institutions in a mediation model. Models 3-7 introduced interaction terms for the Gini coefficient and each separate noneconomic

institution to test for moderation effects. The Gini coefficient, population structure, and percent black all had a positive effects on the dependent variable and were significant at the .01 level across all 7 models. Voter turnout (negative effect) and divorce rate (positive effect) were significant at the .01 level across models 2-6. Welfare expenditures had a negative relationship with the dependent variable and was significant at the .01 level across models 2-6. Only the interaction term for welfare expenditures (negative effect) and the Gini coefficient used in Model 7 was significant at the .05 level. The percent reduction in the Gini coefficient from Model 1 to Model 2 was 43.2 percent, indicating a substantial mediation effect. The pseudo R^2 was .08 in Model 1 and .10 Models 2-7.

In the third series of models, only the Gini coefficient and control variables were used in the model with expressive homicide rates as the dependent variable. Model 2 introduced the noneconomic institutions and was used in a mediation model. Models 3-7 introduce interaction terms for the Gini coefficient and each separate noneconomic institution. The Gini coefficient and percent black had a positive effect on the dependent variable and were significant at the .01 level across all 7 models. Voter turnout (negative effect) and divorce rates (positive effect) were significant at the .01 level across models 2-6. Welfare expenditures had a negative relationship with the dependent variable and was significant at the .01 level across models 2-6 and at the .05 level in Model 7. Only the interaction term for welfare expenditures and the Gini coefficient used in Model 7, which had a negative relationship with the dependent variable, was significant at the .05 level. The percent reduction in the Gini coefficient from Model 1 to Model 2 was 30.92 percent, again indicating strong mediation of the effect of the economy on crime by noneconomic institutions. The pseudo R^2 was .05 in Model 1 and .07 in Models 2-7.

In conclusion, the researchers found a strong mediating effect of the noneconomic institutions on the relationship between income inequality and instrumental crime. However, little to no support was found for a moderating effect of the noneconomic institutions on the relationship between income inequality and instrumental crime. This study does capture a full range of noneconomic institutions and includes several good control variables. However, there are limitations within this study. First, it is hard to study true changes within the same nations as national sub-units like counties tend to have a generally similar institutional structure and cultural values. Nation-states can better serve as the units of analysis as they can show social structural and cultural variations between countries. Second, the Gini coefficient for income inequality is not necessarily a valid measure of economic dominance within a given unit. More valid measures such as a decommodification index could be used instead. Third, a cross-sectional model does not allow one to see the change that occurs to a particular unit over time, as the social structure may change as when the economy becomes more or less dominant.

Cullen, Parboteeah, and Hoegl (2004) tested to see if the conditions of institutional anomie increase unethical behavior in their study of institutional anomie theory. Previous research on unethical behavior had mostly focused on national culture. In this study, the authors used the theoretical components of social structure and cultural dynamics to explain cross-national variations in unethical behavior. This study tested eight hypotheses—four tested cultural dynamics and four tested the institutional balance within nations. Cullen Parboteeah, and Hoegl (2004:413-15) hypothesized

> (1) The stronger the achievement values in a nation, the greater the willingness of its managers to justify ethically suspect behaviors. (2) The

> stronger the individualism values in a nation, the greater the willingness of its managers to justify ethically suspect behaviors. (3) The stronger the universalism values in a nation, the greater the willingness of its managers to justify ethically suspect behaviors. (4) The stronger the pecuniary materialism values in a nation, the greater the willingness of its managers to justify ethically suspect behaviors.... (5) The more industrialized a nation, the greater the willingness of its managers to justify ethically suspect behaviors... (6) The more welfare socialist a nation's political system, the less willing its managers to justify ethically suspect behaviors... (7) The lower the family strength in a nation, the greater the willingness of its managers to justify ethically suspect behaviors. (8) The greater a nation's educational attainment level, the less the willingness of managers to justify ethically suspect behaviors.

Individual-level data from a sample of 3,450 managers across 28 nations were used to test the hypotheses. The sample used in this study was a subset of the World Values Survey from 2000. Nations were selected based on the reliability of individual-level data.

The dependent variable was created by taking seven items that represent unethical behavior on a 1-10 scale and combining them based on a factor analysis. The cultural value of achievement was measured by combining three items from Trompenaars and Hampden-Turner (1998) and the WVS reflecting a sense of achievement. The cultural value of individualism was measured using three items from Hefstede (2001) stressing the importance of the individual in the work place. Universalism was measured through combining two items created by Trompenaars and Hampden-Turner (1998) that capture collective thought processes. Materialism was measured by combining items from the WVS and Inglehart (1997) relating to the importance of money and stability (2004:415).

> The social institution variable industrialization was measured by the degree of urbanization, measured by the percentage of urban population (Duch and Taylor: 1993); energy use, measured in coal-equivalent units (Parboteeah and Cullen, 2003); and demographic distribution of the workforce into nonagricultural sectors, was measured by the percentage of workers in the nonagricultural sector (2004:416).

Welfare socialism strength was measured by three items: taxes collected as a percentage of the gross domestic product, government expenditure as a percentage of gross domestic product, and government revenues as a percentage of gross domestic product. Family strength was measured as the ratio of marriages to divorces per 1,000 people. Education was measured as the educational attainment score from the United Nations Development Program. Control variables included age, gender (recoded with 0 equal to male and 1 equal to female), marital status (0 equal to single and 1 equal to married, divorced, or widowed), and attendance at religious services more than once a week (2004:416).

Hierarchical linear modeling was used for this study. Control variables and the dependent variables were included at the individual level, while cultural values and social institutions were included at the national level. According to the authors, a multiple regression was first run to test for multicollinearity, which revealed no evidence of excessive multicollinearity according to the variance inflation factors, which were all under 10 (2004:417). This can be seen as problematic, as the standard for VIF now is considered to be under 2.5 for each variable (see Allison 1999:141). Overall, level-2 variables explained 35 percent of the variation between nations. Running tests with the regression analysis and analysis of covariance gave them estimates of the total explained variance between individuals of 16-24 percent. Support was found for hypotheses 3 (b= .23, s.e.=.03), 4 (b= .11, s.e.=.03), 5 (b= .44, s.e.=.03), and 7 (b = .12, s.e.=.03) (2004:417-418).

This study provided moderate support for institutional anomie theory. They used cross-national data to test their hypotheses derived from institutional anomie theory. The use of HLM is appropriate when modeling cross-national variations. However, this study

is cross-sectional and does not examine changes over time. A second weakness of this study is that the full range of institutions was not considered at the second level, particularly the institution of religion. Third, most of the assumptions underlying the use of multilevel modeling, such as multivariate normality and homoskedasticity were not assessed in this study. Multicollinearity was assessed, but the standard used to assess variance inflation factors of less than 10 is far in excess of the 2.5 recommended by Allison (1999:141). Hence, standard errors may be inflated due to the presence of problematic multicollinearity resulting in a lack of statistical significance of some of the model effects. Finally, the degree of industrialization does not accurately show the dominance of the economy over other institutions.

Kim and Pridmore (2005b) tested institutional anomie theory using 78 regional units throughout Russia. They hypothesized that "the association between (socio-economic) change and (property) crime is conditioned by the strength of non-economic social institutions" (2005b:81). Previous research has shown a similar relationship to what the researchers were expecting between homicide and socio-economic change. The researchers explained that structural situations are indeed similar to those in the United States, as Russia's new capitalist system has provided many of its people without the means to achieve economic goals. A unique problem Russia faces is the goals themselves, as Russian citizens are often disconnected from cultural goals due to the rapid change in the economic structure from communism to capitalism.

Two separate dependent variables were used in this study: armed robbery and robbery rates per 100,000 residents. These data were obtained from the Russian Ministry of Interior for the year 2001. Socioeconomic change was used as the measure of the

institution of the economy. This measure was created by using residual change scores for a composite index made up of measures of the population, poverty, unemployment, privatization, and foreign capital investment. This information was obtained from the Goskomstat. These change scores were from the year 2000 or closest year available to 1992 or closest year available. Family strength was measured as the proportion of single-parent families with at least one child under 18 in 1994. Educational strength was measured as the logged rate of people enrolled in college per 1,000 according to Goskomstat in 2001. Polity strength was measured as the logged proportion of registered voters who participated in the 2000 presidential elections (Kim and Pridemore 2005b:85-86).

Many control variables were used in this study. Economic inequality was measured as the logged ratio of the top 20 percent and bottom 20 percent of the distribution of individual incomes. Heavy alcohol consumption was measured as the rate of deaths due to alcohol poisoning. A control was included that measured the proportion of the population living in cities with a population over 100,000. A control was included for the logged population of males aged 25-44. The Northern Caucasus and the regions east of the Ural Mountains were dummy coded to control for the differences in overall crime rates in these areas, as crimes tend to be lower in the Caucasus region and higher in the regions east of the Ural Mountains (Kim and Pridemore 2005b:87). Interaction terms between socioeconomic change and the three measures of noneconomic institutions of the family, education, and polity were also included.

Ordinary least squares regression was used to test for the effects of socioeconomic change, institutional strength, and the interaction terms in the two models with different

sets of robbery rates. Missing data were handled by replacing "missing values by using the other regressors in the model as instrumental variables" (2005b:87). Normality assumption violations were addressed by logging education, polity, development, inequality, and males aged 25-44. Four models were run, with models 2-4 including interaction terms one by one. Mean centering the interaction terms took care of problems with multicollinearity.

For tests on the dependent variables, armed robbery and robbery rates, the interaction effects between socioeconomic change and family (b= .147, β=.136), socioeconomic change and education (b= .147, b= .136), and socioeconomic change and polity (b=.212, b=.358) all were nonsignificant. The actual hypothesis testing institutional anomie theory showed that there was no significant relationship between robbery and the interaction terms. The results of this study show that the measures used for social institutions do not appear to condition the effect of socioeconomic change on property crime in transitional Russia. The authors acknowledge that their results are different from studies such as Chamlin and Cochran (1995) and Piquero and Piquero (1998) that showed that noneconomic institutions conditioned the effect of a measure of the economy on property crime (Kim and Pridemore 2005b:92-93). This was more than likely due to a difference in the cultures studied. The United States has had a stronger cultural ethos toward monetary success for decades, while Russia has only been a capitalist nation for a little over a decade (in 2005) and is still a developing nation.

This study did address every major assumption necessary for successfully using OLS regression. However, many limitations methodologically and theoretically still exist. Kim and Pridemore (2005b) acknowledge that reporting errors and bias are likely to

occur in a country such as Russia due to poor record keeping and intentional underreporting of crime. They also note that they did not directly test institutional anomie as it was intended theoretically by Messner and Rosenfeld. They explained that

> Institutional anomie theory was not developed to explain the relationship between socio-economic change and crime. Instead, it focuses on cultural pressures for monetary success, the dominance of the economy in the institutional balance of power and the interaction of these cultural and institutional structures. Nevertheless, Bernburg (2002) argues that Messner and Rosenfeld's theory provides an important link between anomie, contemporary social change and crime, due to its consideration of an unchecked market economy (2005b:93-94).

A third limitation is that this test of institutional anomie theory does not look at the proper unit of analysis originally intended theoretically for institutional anomie theory. Messner and Rosenfeld (1997a) looked at nations-states and applied their theory to cross-cultural differences. A final limitation is the use of a cross-sectional approach instead of a longitudinal study that could capture variations of the impact of institutional anomie over time.

In a second study, Kim and Pridemore (2005a) tested institutional anomie theory by looking at the effect of socioeconomic change on homicide rates. They employed "an index of negative socioeconomic change and measures of family, education, and polity to test the hypothesis that institutional strength conditions the effects of poverty and socioeconomic change on homicide rates" (2005a:1377). The study aggregated Russia into 78 different regions that were available for analysis. All data were collected for the year 2000, unless specifically noted.

The dependent variable was measured through the regional homicide victimization rate per 100,000. Socio-economic change was used as the measure of the institution of the economy. This measure was created by using residual change scores for

a composite index made up of measures of the population, poverty, unemployment, privatization, and foreign capital investment. This information was obtained from the Goskomstat. These change scores were from the year 2000 or closest year available to 1992 or closest year available. Family strength was measured as the proportion of single-parent families with at least one child under 18 in 1994. Educational strength was measured as the logged rate of people enrolled in college per 1,000 according to Goskomstat in 2001. Polity strength was measured as the logged proportion of registered voters who participated in the 2000 presidential elections (2005a:1383-1385).

Many control variables were used in this study. Economic inequality was measured as the logged ratio of the top 20 percent and bottom 20 percent of the distribution of individual incomes. Heavy alcohol consumption was measured as the rate of deaths due to alcohol poisoning. A control was included that measured the proportion of the population living in cities with a population over 100,000. A control was included for the logged population of males aged 25-44. The Northern Caucasus and the regions east of the Ural Mountains were dummy coded to control for the differences in overall crime rates in these areas, as crimes tend to be lower in the Caucasus region and higher in the regions east of the Ural Mountains (Kim and Pridemore 2005b:1385-1386). Interaction terms between socioeconomic change and the three measures of noneconomic institutions of the family, education, and polity were also included.

Ordinary least squares regression was used to conduct cross-sectional tests of institutional anomie theory. Negative binomial regression was used to estimate models of the rare event data of homicide rates. Missing data were handled by regressing the variables with missing observations on the other independent variables that had no

missing, and predicted values from these regressions were used to fill in the missing data (2005b:1386). First, four models were run including poverty, social institutions, and then interaction terms. In model 1, logged poverty, family, polity, alcohol, and the dummy coded east variable were all significant at the .05 level. All of these variables remained significant across all four models. In models 2-4, interaction terms were added and mean centered to remove any possible multicollinearity. However, none of the interaction terms conditioned the effect of poverty on homicide (2005a:1389). The second set of models regressed the homicide rate on the socioeconomic change index, social institutions, and interaction terms. Socioeconomic change, polity, alcohol, and east were all significant at the .05 level. However, like the first set of models, none of the interaction terms in models 2-4 conditioned the effect of socioeconomic change on homicide rates (2005a:1390).

Kim and Pridemore (2005a) concluded that support was found for the first and second hypotheses that poverty has a positive relationship with regional homicide rates and that socioeconomic change has a negative relationship with homicide rates. Partial support was found for the third hypothesis that institutional strength is negatively associated with homicide rates, particularly the family and polity, which both had a negative relationship with homicide. Finally, no support was found for the hypothesis that the effects of poverty and negative socioeconomic change on homicide rate were conditioned by the strength of noneconomic institutions (2005a:1390).

This study did not measure the institution of economy in a manner that showed its strength in relation to other institutions. Kim and Pridemore (2005a:1393) stated that

> institutional anomie theory was not developed to explain the role of rapid socioeconomic change on crime. It focuses instead on the specific cultural

> pressure for monetary success that gives rise to anomie because of the (1) imbalance between the economic institution and other noneconomic institutions and (2) interplay between cultural pressure for material desire and the structural imbalance of social institutions.

The use of a cross-sectional approach limits the potential of this study. A longitudinal study could better capture the variation in the effect of institutional anomie across time. Using a cross-national sample may offer a better test of institutional anomie since nation-states differ in their institutional balances and cultural values.

Baumer and Gustafson (2007) tested the empirical validity of Merton's anomie perspective, as well as Messner and Rosenfeld's institutional anomie theory. The authors admit that a full test of institutional anomie theory would need to include global measures of the degree of cultural emphasis on monetary success, and the balance of the major institutions. They admitted that due to a lack of these measures, a complete test of the theory would not be possible. They ran a partial test of the theory that examined some of the relationships that are central to institutional anomie and have also not received a lot of previous scrutiny by past research (2007:628). The researchers proposed an integrated model of Merton and Messner and Rosenfelds' theories of anomie. Baumer and Gustafson (2007:629) theorized that

> commitment among citizens to pursue monetary success goals, weak commitment among citizens to legitimate means of pursuing monetary success goals, limited legitimate opportunities for pursuing monetary success, limited or unequal educational and economic attainment, and commitment to and investment in education, family, political, community, and religious institutions

are responsible for explaining differences in instrumental crime across geographic units. However, separate models were run for Merton's and Messner and Rosenfeld's theories of anomie.

Data for 77 counties were used in this study that were obtained from three sources—Uniform Crime Reports (dependent variable), General Social Survey, and U.S. Census Bureau. GSS data, which are household-level data, were aggregated for each county in the study. Data were taken from 1975-1976, due to the relevant measure only being available for this time period. Crime rates were for 1977 and were measured as a composite variable of the number of robberies, burglaries, larcenies, and auto thefts per 100,000 residents. The degree of commitment to monetary success goals, which conceptualizes an important cultural value, was measured by the GSS question "next to health, money is the most important thing." The degree of weak commitment to legitimate means for pursuing monetary success goals also came from the GSS and was measured by aggregating the question whether respondents agree "there are no right or wrong ways to make money, only hard and easy ways" (2007:633). The two questions from the GSS survey were combined for the years 1973 to 1976.

The concept of the economy was measured by limited job availability, which was measured by the work force to job ratio. The variable low educational and economic attainment was composed of six items. Educational and income inequality was measured by the income Gini and education Gini coefficients. Strength of noneconomic social institutions included measures of education, family, polity, religion, and community. Education was measured by percentage of government expenditures on education, as well as a separate measure using pupils per teacher. Familial strength was measured by a composite of three items related to time spent with close relatives over the past month, as well as a separate measure that operationalized marriage. The polity was measured by separate measures of welfare assistance and voter participation. The institution of religion

was measured by church adherence rates. The community was measured by a composite of four items that tap social capital (2007:639-640).

Baumer and Gustafson ran separate models, one to test Merton's theory, and one to test institutional anomie theory. The model that tested institutional anomie theory included the variables commitment to monetary success and weak commitment to legitimate means, as well as interaction terms between commitment to monetary success and weak commitment to legitimate means in the model. Three-way interaction terms were also created between commitment to monetary success and weak commitment to legitimate means and each separate noneconomic institution variable. This was to test to see if interaction between cultural dynamics and social structure significantly predict instrumental crime. Each of the eight models included the cultural value variables, the two-way interaction terms between these two variables, and one of the three-way interaction terms. The R^2 of each model ranged from .758 to .806. In Models 1 and 2, only the two-way interactions were significant (b= 8.68) and (b= 8.62) respectively, at the .05 level. In model 3, weak commitment to legitimate means (b= 46.59), the two-way interaction terms (b= 12.12), and the three-way interaction term for time spent with family and the cultural values (b= -3.23) were significant at the .05 level. In Models 4 and 5, only the two-way interaction terms of commitment to monetary success and commitment to legitimate means (b= 7.82) and (b= 9.59), respectively, were significant at the .05 level. In Model 6, the two way interaction terms (b= 9.01) and the three-way interactions between welfare assistance and cultural values (b= -5.08) were significant at the .05 level. In Models 7 and 8, only the two-way interaction terms (b= 6.84) and (b= 8.02) were significant at the .05 level (2007:648). Results show that welfare

assistance and time spent socializing with family members are moderators of dominant economic values on crime. Next, simple slopes were run for the significant three-way interactions. The results from this model show

> the effects of commitment to monetary success goals when weak commitment to legitimate means is prevalent (1 and 2 standard deviations above its mean), and the effects of weak commitment to legitimate means when commitment to monetary success goals is strong (1 and 2 standard deviations above its mean), dampen significantly as the two higher order moderators (welfare assistance and time spent with family) take on larger values (2006:651).

This was very consistent with the results from the OLS regression and also with the theory itself. However, when indicators welfare assistance and time with family have high values, the moderation effect vanishes. Overall, support was found for institutional anomie theory, at least with regards to the significant effects.

Overall, this study had the major strength of integrating cultural dynamics with social structure, as well as combining survey data with macro-level data. Providing multiple measures for certain institutional variables, as well as providing a full range of noneconomic institutional variable also are a key strengths in this study. However, this study could be improved by using cross-national data, instead of county-level data from the United States. Also, conducting a longitudinal analysis over a cross-sectional analysis can better capture change in the effects of institutional anomie variables over time. Finally, testing assumptions of ordinary least squares regression was never mentioned in the article, thus it cannot be determined if the analysis results can be trusted.

Muftic (2006) tested to see if variations in the deviant behavior of cheating at the university level could be explained by institutional anomie theory. The study examines if American students and international students studying in the United States have different cheating behaviors, due to cultural differences regarding the importance of monetary

success. More specifically, the author hypothesized "that American students, relative to foreign-born students, will have an increased adherence to economic goal orientations that increase cheating behaviors" (2006:630). This study incorporates both measures of cultural values and the more traditional measures of institutions within the model. Muftic discussed how most studies only focus on institutional imbalance and how that increases the potential for crime, but rarely do they discuss the intersection between the institutional imbalance and cultural values that weigh monetary success heavily.

This study used individuals as the unit of analysis, and a convenience sample 122 American born students and 48 international students. The students in this sample were asked to fill out a survey that included questions relating to cheating behaviors and their own beliefs about the fulfillment of economic goals (2006:634). This study used an additive model to see if an emphasis on the American Dream had an effect on whether an individual cheats or not. A second interactive model was used to determine if noneconomic institutions moderate the effect of the economy on crime rates. Eight general hypotheses were tested in this study (2006:637):

> (1) The adherence to the cultural values of the American Dream will be higher among U.S.-born students compared to non-U.S.-born students. (2) U.S.-born students will be more involved in the economy and less involved or committed to noneconomic social institutions (i.e., education, family, and the polity) compared to non-U.S.-born students. (3) U.S.-born students will have a higher likelihood of student cheating compared to non-U.S.-born students. (4) Involvement in noneconomic social institutions (i.e., education, family, and the polity) will moderate the influence of the economy on student cheating. (5) In the additive model, students who have higher adherence to the cultural values composing the American Dream (i.e., individualism, achievement, universalism, and the fetishism of money) will be more likely to cheat. (6) In the additive model, students who are more involved or committed to the economy will have a higher likelihood of cheating. (7) In the interactive model, students who are high in adherence to the American Dream and more involved or

> committed to the economy will have a higher likelihood of cheating. (8) In the interactive model, the relationship between students' adherence to the American Dream and likelihood of cheating will be moderated by involvement or commitment to noneconomic institutions (i.e., family, education, and polity).

All of the variables in these hypotheses were measured at the micro level and attempted to stay true to institutional anomie theory by incorporating data from international students.

Data for the study were collected from a convenience sample of students at a medium-sized, land grant university, in the upper Midwest during 2004. The total number of students used in the final sample was 162–114 that were U.S. born and 48 that were international students attending college in the United States. The study overrepresents non-U.S. students who make up 28.2 percent of the sample, while at the university level, non-U.S. students only made up 6.3 percent of the population. Other overrepresentations of groups such as minorities were also in the sample. Logistic regression was used, as the dependent variables were from 11 survey questions relating to whether a student has cheated, which was coded as 1 for yes and 0 for no (2006:640). Overall, 65.9 percent of respondents had cheated in one form or another.

The four cultural values that make up the American Dream—achievement, individualism, universalism, and the fetishism of money were used to create variables that measure cultural values. One to seven questions were used to measure each value. Using factor analysis, these values were then transformed into one variable for each cultural value. Cronbach's alpha revealed that all of the four cultural values measures had high internal consistency. Thus, all of the measures were transformed into one variable that captures the entire American Dream. This variable was split at the median and recoded as low and high emphasis on the American Dream. The institutions of the family

and education were measured in a similar fashion. Using factor analysis, numerous questions regarding the institutions of the family and education were reduced to four. Seven-point scale questions were created for these two variables, with higher scores representing higher participation in the given institution (2006:640-641). The economy was measured categorically by whether the respondent was employed or not. Polity was measured categorically by whether the respondent regularly performed community service. Age and categorical measures of gender, U.S. born, and citizen of the United States were used as control variables (2006:642-643).

First, one-way ANOVAs were run between U.S. born students and non-U.S. born students and revealed significant differences among the cultural values of individualism ($t = 4.516$ $p < .001$), universalism ($t = -2.938$ $p < .001$), and the fetishism of money ($t = -2.940$ $p < .01$). Partial support for the first hypothesis was shown for the universalism, fetishism and money, but not individualism, due to the direction of the relationship being opposite of the hypothesis (2006:644).

The second model included all of the institutional variables and control variables for place of birth and gender. Partial support was obtained for hypothesis 4, as interactions terms ($\beta = -.307$, $p < .01$) for students who were employed and had high level of family bonding were less likely to cheat (2006:645). Using bivariate analysis to test hypothesis 3, U.S. students were significantly more likely than non-U.S. students to cheat ($\chi^2 = 57.189$, $p < .001$).

The final set of models used logistic regression to test hypotheses 5 through 8. The first logistic model included the variables for cultural values, institutions, and the control variables. Age ($\beta = -.199$, $\text{Exp}\beta = .819$), female ($\beta = -1.270$, $\text{Exp}\beta = .281$), fetishism

of money (β= .229, Expβ=1.257), family (β= –.201, Expβ=.818), and polity (β= –.557, Expβ=.573) were all significant at the .05 level. Born in the United States (β= –2.272, Expβ=.9.703) was significant at the .001 level, individualism (β= –.272, Expβ=.762) and education (β= –.2.155, Expβ=.116) were significant at the .01 level, and universalism (β= .229, Expβ=1.257) was significant at the .07 level. Consistent with the hypotheses, the institutions of the family and polity had an inverse relationship with cheating (2006:647). In partial support of hypothesis 5, universalism and fetishism of money predicted cheating, when all other variables were controlled. In the second model, the moderating effects of culture and social institutions on cheating behavior were examined. "Specifically, separate models were calculated that examined the impact involvement in or commitment to social institutions have on student cheating behaviors while separating out high and low adherence to the American Dream" (2006:649). No support was provided for hypotheses 7 or 8, as only born in the United States was significant in both models.

Overall, the results show that the measure for the economy, employment, has a moderating effect on cheating behavior. However, this behavior ran counter to the theory and actually reduced the likelihood of cheating by a student. This is due to the economy not being measured as being dominant over other institutions. The author does not clarify how much a student who is employed works in a given week, which could determine if the economy has precedent over how the individuals spend their time. The study also reveals that not all citizens of the United States may accept the concept of the American Dream. The notion of every American being socialized to the American Dream is a key part of institutional anomie theory that is open to debate. A second problem is that this is

not a true cross-national study which would be necessary to fully test Messner and Rosenfeld's (1994) theory. Third, tests of assumptions of logistic regression such as linearity and multicollinearity are never mentioned in the study, therefore no one can discern if the data have been properly analyzed. Fourth, religion is left out as a major noneconomic institution. Fifth, a longitudinal study can show any change over time in the effect of the institutional balance and cultural values on cheating behavior. However, this study does include measures of cultural values, which most quantitative studies fail to capture. More studies in the future should include measures of cultural values.

Schoepfer and Piquero (2006) tested to see if one type of white-collar crime, embezzlement, is a form of crime that can be explained by institutional anomie theory. This is justified by the offender being motivated under a strong cultural emphasis on monetary success. Economic institutional dominance can also create an environment in which people feel the only means of achieving goals is through crime and deviance. Although white-collar criminals differ from street criminals, who have traditionally been studied using institutional anomie theory, both should face the same structural pressures to commit crime. Schoepfer and Piquero (2006:232) hypothesized that

> (1) lower percentages of the population without high school degrees lessens the effect of unemployment on rates of embezzlement; (2) lower divorce/marriage ratios (less divorces than marriages) lessen the effect of unemployment on embezzlement rates; (3) higher percentages of registered voters who voted lessens the effect of unemployment on embezzlement.

The sample used in this study was the 50 states in the United States. The dependent variable, embezzlement rates, was taken from UCR data from 1990 and Census data were used to calculate rates of embezzlement per 100,000 in 1991. Embezzlement is the only measure that would capture white-collar crime that is recorded

by the Uniform Crime Reports. Other measures of noneconomic institutional variables were gathered from 1990 U.S. Bureau of Census data. The institution of education was measured as the percentage of the adult population who did not graduate from high school. The polity was measured by the percentage of people from each state who participated in the 1990 general and local elections. Family was measured as the ratio of people divorced to those who were married in 1991. Interaction terms were also created between each noneconomic variable and the variable for the economy, which was measured as the percentage of the population unemployed.

Poisson regression was used to analyze the rare event data of embezzlement rates in a smaller macrosocial unit. Each interaction term was mean-centered to deal with possible multicollinearity. Model 1 included only the dependent variable and the variable for each institutional independent variable. Education (β= .050) and polity (β= -.025) were both significant at the .01 level, while the economy (β= -.136) was significant at the .05 level. A pseudo R^2 of .133 was found in the first model. Model 2 incorporated the interaction terms for economy and education. Education (β= .050) and polity (β= -.025) were significant at the .01 level, while the economy (β= -.139) was significant at the .05 level. A pseudo R^2 of .133 was found in the second model. Model 3 incorporated the interaction term for economy and family. Education (β= .050) and polity (β= -.025) were significant at the .01 level, while the economy (β= -.148) was significant at the .05 level. A pseudo R^2 of .134 was found in the third model. Model 4 incorporated the interaction terms for economy and polity. Education (β= .048), economy (β= -.151), and polity (β= -.019) were significant at the .01 level. A pseudo R^2 of .154 was found in the fourth model (2006:233).

> The results of this investigation were supportive of IAT. The additive effects indicated that higher levels of voter participation were prohibitive of embezzlement while increasing high school dropout rates exacerbated embezzlement… Finally, with regard to the three interaction effects only one, economy (and) polity, was significant. The sign of this interaction implied that higher rates of polity weakened the effect of unemployment on embezzlement (2006:223).

This study suffers from several limitations as a test of institutional anomie theory. First, unemployment rates do not capture the dominance of the economy over other institutions, but instead capture economic instability. Second, a full range of institutions was not used, as the noneconomic institution religion was left out in this study. This is clearly stated as an important institution by Messner and Rosenfeld (2007). Third, this study is cross-sectional and does not capture change over time, which is necessary to see if variations in crime are related to changes in the social structure. Fourth, using larger marcosocial units such as nation-states allows a researcher to test institutional anomie using units that differ more markedly in their social and cultural structures.

Freichs, Munch, and Monika (2008) focused on growing cultural individualism and increased structural inequalities to create an integrated anomie model. The first part of their approach was one of the main tenets of Mertonian anomie theory, the mismatch between culturally prescribed goals and structural means or lack of means of obtaining these goals. Based on institutional anomie theory, the second part of their theoretical explanation was the structural balance or imbalance of institutions. The third part combined both of the first two parts of their approach. Higher crime rates were hypothesized to result at the individual level by an individual failure to obtain goals and a failure at the structural level to integrate members of society successfully. Finally, they argued that nations that favor more individualism as a result of global economic pressures

and nations that rely less on institutions to integrate members would have higher crime rates (2008:197-198).

Four sets of hypotheses were tested in this study. With regards to relative deprivation, hypotheses 1a and 1b respectively stated that higher income inequality and higher high school enrollment would increase anomic crime. With regards to the devaluation of the family, hypotheses 2a and 2b respectively stated that higher female employment and higher divorce rates would lead to anomic crimes. Decommodification was tested in hypotheses 3a and 3b, in which higher union density and higher public social expenditures were predicted to result in lower anomic crimes. Hypothesis 4a stated that higher long-term unemployment increases crimes, and tests for labor market flexibility on crime. Hypothesis 4b stated higher imprisonment rates reduce anomic crime, was used to test for punitiveness (2008:201-202). Twenty nations were used in this cross-national time-series study that allowed the researchers to test for variations within and across nations from 1974-2000.

Two dependent variables were used in the study—the robbery rate per 100,000 people from the UN survey of crime trends, and homicide rates per 100,000 people from the World Health Organization. Economic inequality was operationalized by two measures—the Gini coefficient and P90/P10 earnings ratio, which were compiled separately from two different sources, the OCED and World Income Inequality databases. Both datasets for income inequality were used for separate models and the results were compared. Tertiary school enrollment rates were used as a measure of education. Female employment and divorce rates were used as measures of family disruption. Union density rates and rates of public expenditure were used as measures of

decommodification. Long-term unemployment was used as a measure of labor market flexibility. Imprisonment rates were used as a measure of punitiveness that was used as an exogenous variable. Controls included the proportion of men aged population for 15-29 and also the proportion of men unemployed 15-24. GDP per capita was used and a set of dummy variables was constructed for each year to control for time (2008:202-203).

Multiple imputation was used to handle missing data. The dependent variable was logged for this model. A generalized method of moments (GMM) was used to address the problem of the logged dependent variable being correlated with the error term. The first models were run with only the controls, income inequality, and education. In the second step, they included the decommodification index. After this they replaced decommodification with the six explanatory variables that represent the social institutions of the family, state, and labor market. Minor multicollinearity was not addressed. In the third step, only variables related to labor-market policies were introduced, while in the fourth step, only indicators of more general socio-political conditions were included. Finally, the full model was tested with all of the measures included, except for the decommodification index. It should be noted that for the multivariate models, robbery rates were used as the dependent variable (2008:204).

Bivariate correlations over time that should be noted were female employment and long-term unemployment (r=-0.40), female employment and public social expenditure (r=-0.32), and public social expenditure and union density (r=0.25). Overall, 25 out of 105 of the possible correlations over time were significant at the .05 level. Following this, model misspecification did not seem to be a problem according to tests of GMM estimations. The Sargan test revealed that the null hypothesis of overidentifying

restrictions could not be rejected. The Arellano-Bond test showed autocorrelation of the first order, which was expected. However, there was no evidence of significant autocorrelation at the second-level (2006:206).

Overall, four different sets of models were used. One set with the steps aforementioned using the OCED Gini coefficient, one using the OCED P90/P10 earnings ratio, one using the World Income Inequality Database Gini coefficient, and one using World Income Inequality Data P90/10 earnings ratio. A difference GMM was applied in models 1-5 in each set of models and system GMM was applied in model 5a for each. Results for both sets of model 1 with the Gini coefficient revealed that the dependent variable and both controls were significant. Tertiary education was also significant in both models. Decommodification had the only significant effect in the World Income Inequality Database (obtained for WIDER), but was a positive relationship which would run contrary to institutional anomie theory. When the measures of institutions were included, imprisonment was significant in the set of models with OECD inequality measures. However, all of the variables became significant at the. 05 level in the WIDER Gini coefficient set of models. The WIDER model with all indicators included except for decommodification confirmed the significant results of the previous models. OCED versions were not as conclusive when all the indicators were included. When the earnings ratio was included, more equal earnings ratios significantly increased the rates of robberies, with the relationship going from positive in the Gini coefficient to negative in the P90/10 earnings ratio. Other than this, most of the results remained the same throughout the all sets of models with different measures of economic inequality. The

biggest divergence in the differenced GMM full model and system GMM model is the reduced number of significant effects in the system GMM model (2008:208-209).

Freichs, Munch, and Monika (2008:209) concluded that

> overall, our research design proved successful as we were able to demonstrate that individual inclusion and stratified exclusion on the one hand and different strategies of integration (represented by our institutional indicators) on the other hand interlink in regulating the incidence of crime.

Although this study did not directly focus on institutional anomie, it does have strengths that future studies of IAT should try to incorporate. The most important strengths are that it is a cross-national study and that it is longitudinal. A weakness in this study was the absence of religion as a social institution.

Bjerregaard and Cochran (2008) used more innovative and more theoretically sound measures in their test of institutional anomie theory. They aimed to better test the theory using cross-national data. This study also used better operationalizations of key concepts, while taking into consideration the effects of noneconomic institutions. The main innovation of this study was the inclusion simultaneously "of open competition, where monetary achievement and individual economic success are emphasized and portions of the population are impeded from achieving success" (2008:185) into the model. Bjerregaard and Cochran (2008) argued that nations with the highest structural anomie would have the highest rates of homicide.

The sample for this test included 49 nations. Cross-national average homicide rates for years 1996-1999 were used as the dependent variables. This variable was logged to reduced skewness. Logging the dependent variable also reduced any problematic heteroskedasticity. The first measure of the economy was an index of economic freedom that was developed by the Heritage Foundation. Each country was rated on fifty

economic variables across ten broad categories. Economic inequality was measured using the Gini coefficient of household income. This coefficient was scaled 0-100, with perfect income equality being a 0 and a perfectly unequal distribution being 100. The strength of the economy was measured by the GDP in U.S. dollars, and was logged to reduce skewness. Finally, all of these measures were mean-centered so that they could be turned into two-way interaction terms with each other, as well as a three-way interaction that includes each economic variable (2008:187).

A variable for economic growth was used to serve as an indicator of how advanced a given country's economy was. Economic growth was the annual percentage growth in GDP. A 1995 to 1997 average was employed to reduce year to year fluctuations in GDP growth. Family disruption was measured by the divorce rate. Lack of voter turnout was used to measure the polity or ineffectiveness of it. The strength of the institution of education was measured by the expenditures on education as a percentage of the GDP (2008:187).

Ordinary least squares regression was used to test the effects of the indicators for the dominance of economy, economic growth, and noneconomic institutions on cross-national homicide rates. Model 1 only included the variables for economic dominance and economic growth without any of the interaction terms. The total variation explained in the first model was 52 percent. The Gini (β= .057) and GDP (β= -.644) were significant at the .01 level. Model 2 introduced the interaction terms for economic dominance. The total variation explained increased to 64 percent. The Gini (β= .075), GDP (β= .723), and the interaction term for the Gini and GDP (β= .072) were significant at the .01 level. Model 3 included every variable in the model. The explained variation

increased to 71 percent. The Gini (β= .061), GDP (β= –.716), and the interaction term for the Gini and GDP (β= .064) were significant at the .01 level, while three-way interaction terms for the economic strength variables (β= .082) and the polity (β= .027) were significant at the .05 level.

These models provided mixed support for institutional anomie theory. Although, the GDP and Gini coefficient were significant as predictors of homicide rates, only the polity was significant as a noneconomic moderator of economic dominance on homicide rates. Finally, a graph with predicted homicide rates under varying economic conditions was created. Values ranged from either low to high across the three measures of economic strength. Homicide rates were predicted to be the highest (predicted mean of 143.452) when all three of the measures are high. Homicide rates were predicted to be the lowest (predicted mean of .087) when the Gini index is low, GDP is high, and economic freedom is high (2008:190).

Using a cross-national study is a much better way to test institutional anomie theory. However, capturing changes over time is also important to fully testing institutional anomie theory. The lack of measures of religion and other control variables also reduces the value of this study. The presence of high VIFs in the models and any tests of multicollinearity are not addressed in the study, which violates a major assumption of OLS regression.

In a second study, Bjerregaard and Cochran (2008b) tested the effect that noneconomic institutions have on crimes rates, particularly if they mediate or moderate the effects of the economy. The authors discussed how previous work on institutional anomie theory had mixed results on whether noneconomic institutions moderate or

mediate the effects of the economy on crime rates. Messner and Rosenfeld (1999) stated that social institutions will foster weak social controls when the economy is dominant, thus that the economy will have an indirect or mediated effect on crime rates via other noneconomic social institutions, while Chamlin and Cochran (1995) argued that social institutions have a moderating effect on crime rates when weak social controls are met with cultural pressures to achieve monetary success (2008b:33).

The sample was composed of 49 nations and data for the study were collected from numerous agencies including the World Bank, INTERPOL, United Nations, and the World Health Organization. The independent variables were taken from 1997 if possible, or if not, were taken from 1996. Variables that had problems with collinearity were combined based on the results of a principal components analysis. Two dependent variables were used in this study—total thefts, which came from INTERPOL, and homicide rates from both the World Health Organization (multiple year average from 1997 to 1999) and INTERPOL. INTERPOL data were only used for homicide rates when World Health Organization data were missing. Homicide rates were logged to address the problem of positive skewness (2008b:34).

The economy was measured by the Gini coefficient of household income as a measure of economic inequality. This coefficient was scaled 0-100, with perfect income equality being a 0 and a perfectly unequal distribution being 100. A second operationalization of the economy was used with social welfare being measured as annual total expenditures on social security as a proportion of the gross domestic product. A third operationalization of the economy was an index of economic freedom that was developed by the Heritage Foundation. Each country was rated using fifty economic

variables across ten broad categories. The family was measured as a factor variable that combined divorce rates and percentage of females in the labor force. Higher scores on this measure represent more family disruption. The institution of education was measured by combining illiteracy rates and pupil-to-teacher ratios into one variable based on the results of a principal components analysis. The polity was measured by the percentage that did not turn out for the latest election. This measure showed the ineffectiveness of the polity. Interaction terms were also created between the economy measures and measures of each noneconomic institution (2008b:37-38). The sex ratio, an index of racial heterogeneity, and percentage of population aged 15-29 were combined into one control variable to address problems of multicollinearity. A second control variable of affluence consisted of a composite measure that combined measures of GDP per capita in U.S. dollars, life expectancy, and annual health expenditures (2008b:38).

Ordinary least squares regression was used to analyze the data. First, five sets of models were run using the dependent variable, homicide rates. The second set of models is the exact same as the first set, except that the dependent variable used was theft. The first set of models tested the effect of each measure of the economy directly on the dependent variable. The second set of models included the social institutions and one measure of the economy for each model. Models 3-5 include the same variables as Model 2 but used a different interaction term for each model. Every model also included the control variables to ensure that they took the possibility of spuriousness into account (2008b:39).

Overall, the models explained 38.6 to 58.4 percent of the variation in homicide rates across nations and 43.2 to 74.3 percent of the variation in theft rates across nations.

Out of the three economic measures, only the Gini coefficient had a significant direct effect on homicide rates (β= .045). The measure for social security was the only measure to have a significant direct effect on theft rates (β= .091). With the Gini coefficient as the measure for the economy, the economy's effect on homicide rates was mediated by noneconomic institutions. Family disruption had a positive relationship with cross-national homicide rates when the economic freedom index was used as the economy variable. Voter turnout also had a significant relationship with homicide rates when annual expenditures on social security were used as the economy variable. High levels of family disruption was associated with homicide rates when levels of social security expenditures were also high (β= .056). The relationship between lower levels of education and economic inequality led to an increase in homicide rates (β= .050). In the second set of models, a positive relationship was found between social security expenditures and theft (β= .091). This actually runs counter to the effect of social safety nets hypothesized in institutional anomie theory. However, this may be the result of the lack of mediation by other noneconomic institutions. The effects of these institutions remained significant at the .05 level (β=.061). The positive relationship of economic inequality with theft rates was significantly enhanced when family disruption was high (β = 0.095). Low levels of voter turnout had a significant relationship with economic inequality (β=-.002). The last two results are more in line with the results one would expect with institutional anomie theory.

The study yielded very limited results in support of institutional anomie theory. However, it is almost impossible to do a complete test with an OLS regression, even when every assumption is met. One needs to conduct a longitudinal study that captures

variations in crime rates with changes in the social structure and cultural dynamics. The authors captured the economy and other noneconomic institutions very well. However, Messner and Rosenfeld (2007a) state that religion needs to be included as a noneconomic institution. The use of nations as the unit of analysis is the best way to capture variations across units.

Stults and Baumer (2008) tested an integrated model of Merton's anomie theory and Messner and Rosenfeld's institutional anomie theory. They argued that the two theories have failed to adequately address the core concepts of the anomie perspective on lethal violence. Stults and Baumer (2008:216) hypothesized

> an expanded anomie model in which an unbalanced pecuniary value system – the core causal variable in Merton's theory and IAT – translates into higher levels of homicide primarily in indirect ways by increasing levels of firearm prevalence, drug market activity, and property crime, and by enhancing the degree to which these factors stimulate lethal outcomes.

Much of the previous research on institutional anomie had focused heavily or completely on the social structure in explaining spatial variations in crime rates.

Stults and Baumer (2008) expanded on the previous integrated anomie model by Baumer and Gustafson (2007). In their new model, citizens' commitment to pursing monetary goals and weak commitment to using legitimate means still act as exogenous variables. Social stratification and commitment to and investment in social institutions also acted as exogenous variables. Their modified integrated model of lethal criminal violence introduced the concept of criminal violence as property crimes, illicit drug market activity, and property crime rates as having a direct effect on spatial differences in homicide rates. Criminal violence variables act as mediating variables in this study. All

four exogenous variables have a direct effect on homicide rates, as well as an indirect effect through criminal violence (2008:222).

The modified integrated model of lethal criminal violence was tested using 74 of the 87 counties within the United States that make up the sampling frame for the General Social Survey for the time period of the mid-to-late 1970s. Missing data for key variables prevented the use of the complete data set. Individual responses to GSS questions were aggregated to create measures at the county-level. Explanatory variables were calculated from the years 1975 and 1976. However, the levels of criminal violence and homicide rates were calculated from 1977.

A three year average from 1976-1978 was created for the dependent variable, homicide rates per 100,000 people. Homicide rates were collected from the National Center for Health Statistics. The mediating variable firearm prevalence was taken from two sources and combined into one measure, survey-based percentages of household ownership of at least 1 gun, and health data on the percentage of firearm-related suicides. NCHS drug-related mortalities per 100,000 and UCR data on arrests for sale or manufacturing drugs for the averaged year of 1976-1978 was used as the dependent variable. The variable was logged to address problems with skewness. Property crime was measured using the UCR 1977 data on robberies, thefts, and larcenies per 100,000.

The degree of commitment to monetary success goals, which conceptualizes an important cultural value, was measured by the GSS question "next to health, money is the most important thing." The degree of weak commitment to legitimate means for pursuing monetary success goals also came from the GSS and was measured by aggregating to the county level the question whether respondents agree "there are no right or wrong ways to

make money, only hard and easy ways" (2006:230). The two questions from the GSS survey were combined from the years 1973 to 1976. Interaction terms were created for these two variables and were included in the multivariate models.

Drawing from Baumer and Gustafson (2007), Stults and Baumer (2008) used many of the same measures for key variables in their study. Social structural positions were computed from three separate variables. Limited job opportunities were measured as the ratio of total persons aged 16 and older active in or seeking a job in the labor market to the number of jobs available. The variable low educational and economic attainment was composed of six items. Educational and income inequality were measured by the income Gini and education Gini coefficients. Strength of noneconomic social institutions were included for five institutions—education family, polity, religion, and community. Education was measured by percentage of government expenditures on education, and pupils per teacher. Familial strength was measured by a composite of three items related to time spent with close relatives over the past month, as well as a separate measure that operationalizes marriage. The polity was measured by separate measures of welfare assistance and voter participation. The institution of religion was measured by church adherence rates. The community was measured by a composite index of four items that measure social capital (2008:247)

A number of control variables were used in this study. The mean number of hours watching television was used as a measure for daily television viewing. Logged population size and logged population density were combined to create a population structure variable. Age structure was a control variable that was measured by the percentage of the population aged 16 to 34. Police strength was a control variable that

was measured by the police officers per 100,000 residents. The South was coded as a region dummy variable. Resource deprivation was a control variable that was measured by combining the percentage who were poor, the percentage of families with children headed by a female, the percentage of residents who were black, and median family income into one variable (2008:247).

Ordinary least squares regression was used to analyze the data. First, a multivariate regression was run by regressing the dependent variable on all of the explanatory and control variables. In Model 1, the interaction terms between commitment to monetary success and weak commitment to legitimate means (β= .018), time spent with family (β= -.549), percent of government expenditures spent of education (β= -.186), and social capital (b = -.409) were all significant predictors of homicide rates at the .05 level. The explained variance in Model 1 was .649. Models 2-5 looked at the effects of the explanatory variables and controls on the four mediating variables: firearm prevalence, drug arrest, drug mortality, and property crime rate. Time spent with family was a significant predictor in Models 2, 3, and 5. The interaction terms were significant at the .05 level in models 3 and 5. Limited job availability was significant at the .05 level in Model 2. Percent of government expenditures was significant in Model 5. Finally, the civically-engaged church adherence rate was significant in model 5.

Model 1 in the second series of models was identical to Model 1 in the first series. Models 2-4 introduced the potentially mediating variables of firearm prevalence, drug arrests and mortality, and property separately as independent variables. In Model 5, every variable was included. In Model 2, the interaction terms (β= .018) and percent of government expenditures on education are significant (β = -.185) at the .05 level. In

Model 3, the mediating term for drug arrest rate (β = .012), low educational and economic attainment (β = .548), percent government expenditure on education (β = -.142) were all significant at the .05 level. In Model 4, property crime (β= .001), commitment to monetary success (β= -.128), commitment to marriage (β =.976), and social capital (β = -.489) are significant at the .05 level. In Model 5, property crime (β = .001), low educational and economic attainment (β = .503), commitment to marriage (β = .844), and social capital (β = -.416) were all significant at the .05 level. Explained variation in these models ranged from .645 in Model 2 to .716 in Model 5.

Overall, Stults and Baumer (2008:241) concluded that

> homicide rates tend to be higher in areas where a strong commitment to monetary success is paired with a weak commitment to legitimate means, even after controlling for a broad array of characteristics identified by various theoretical perspectives as predictive of homicide. However, after introducing several theoretically meaningful intervening mechanisms, we no longer found a direct effect of this unbalanced value system on rates of lethal violence. Specifically, we found that drug arrest and property crime rates reduced this effect by more than 80 percent and rendered it non-significant.

Property crime was the strongest moderator of the effect of social structure on homicide rates. In the second series of models, social institutions had a mixed effect on different dependent variables. These findings yield only weak support with regard to institutional anomie theory.

This study did an excellent job of incorporating well-conceptualized control variables, as well as potential mediating variables in models of violent crime. The study also used a wide range of institutional variables and included important measures of cultural dynamics. However, this is not a full test of institutional anomie theory because it relied on data from a single nation, instead of examining a sample of nations which are more likely to have a different cultural dynamics and institutions. Cross-sectional data do

not allow one to capture change in the effects of institutional anomie variables over time that occur that could provide evidence for or against institutional anomie theory.

Conclusion

Table 1 summarizes the key elements of the empirical studies reviewed in this chapter. Overall, all of the studies at best only provide moderate support for institutional anomie theory. This is for varying reasons, whether it is because the tests are cross-sectional or utilize poor measures of key theoretical constructs such as the dominance of the economy. The current study attempts to fill in the gaps by looking at variation over time. This test of institutional anomie theory also attempts to use the best measures possible for each key concept. This test also includes the full range of institutions that were mentioned by Messner and Rosenfeld. Based on my review of the literature, I conclude that an ideal test of institutional anomie theory should have several essential components.

First, every test of institutional anomie theory should include a measure that taps the level of economic dominance. As we will see, one such measure used in past studies is the decommodification index. Messner and Rosenfeld (1997b) used a docommodification index, as they argue that it best measures the relationship between the relative strength of the economy in relation to noneconomic social institutions. Second, the noneconomic institutions of the family, polity, education, and religion should be included as predicators of crime rates. Each measure of these institutions should reflect the relative strength they have vis-à-vis the economy. Messner and Rosenfeld (2007) mention these institutions as the most important noneconomic institutions. Other variables should also be used to control for other competing explanations of variations in

crime rates across nations. Third, the interrelationship of the social structure and cultural dynamics needs to be addressed. Most tests of institutional anomie theory only take into consideration social structure and fail to address the interrelationship it has with cultural dynamics. Both of these factors, together, contribute to variations in crime rates. Fourth, to best explain variations in crime rates across geopolitical areas, the study should be cross-national. Changes within geopolitical areas such as within the United States do not best capture variation in social structure and cultural dynamics, as much of the sample tends to not differ. Fifth, studies should test for variations in the effect of institutional anomie variables on crime rates over time. Using a longitidunial approach can capture additional structural changes that can provide additional evidence in support of institutional anomie theory.

In Chapter 4, I discuss the research design of the present study, where I attempt to incorporate the essential features of an ideal test of institutional anomie theory delineated above. This discussion includes hypotheses to be tested, data and measures, analytical methods, and limitations of the study.

Table 1- Studies that Test Institutional Anomie Theory

Study	Hypothesis(es)	Units of Analysis	Longi-tudinal?	Dependent Variable	Institutional Variables	Control Variables	Statistical Method(s)	Findings
Chamlin and Cochran (1995)	We would expect an improvement in economic conditions to result in a reduction of instrumental crime only when there is a simultaneous strengthening of noneconomic institutions (4). More on page 7	States (N=50)	No	Property crime rate is measured as the total number of robbery, burglary, larceny, and auto theft offenses per 1,000(1980) (5)	Absolute economic deprivation (families below poverty level)(1979). Family- (ratio of yearly divorces/ yearly marriages per 1,000 for 1980). Religion- (Stark 1980 data for adjusted rate of church membership per 1,000). Polity- percentage of voting age individuals who voted in 1980 congressional contests. Alternative model variables on Pg. 9-10	Racial heterogeneity measured as percentage of population that is black in 1980 and the age structure is percentage of population aged 18 to 24 in 1980.	OLS resgression; weighted least squares regression due to model residual problem. Each case is weighted by the square root of the 1980 population size of the state.	Higher levels of church membership, lower levels of the divorce-marriage ratio, and higher levels of voting participation reduce the criminogenic effects of poverty on economic crime(9). Must examine tables.
Messner and Rosenfeld (1997)	Homicide rates and decommodification vary inversely	Countries (N=45)	No	WHO homicide rates per 100,000 averaged over available years 1980-1990	Decommodification index (Welfare expenditures as % of GDP; % for employment injuries; spending per capita—z-scores summed; α=.701); measures relative dominance of economy over polity (high values=low economic dominance)	Sex ratio (ln); Gini income inequality; economic discrimination index (Gurr and Scarritt 1989); development index (GNPC (ln), infant mortality, % >64, pop growth, % urban, life expectancy at birth)	OLS regression; homicide rates logged; missing data mean substitution	Weak to moderate negative relationship in support of theory
Savolianen (2000)	Economic inequality has positive effect on lethal violence(6)	Countries (Same as Messner and Rosenfeld 1997). Second separate sample(p. 9)- N=32	No	Same WHO stats as Messner and Rosenfeld (1997), logged for sknewness. Second, uses WHO 1990 disaggregated by sex	Economic inequality based on GINI and institutional balance of power based on government spending on social security and other welfare programs as a percent of total welfare expenditure(Pg. 9). Each dataset has interaction terms between indicator of economic inequality and decommodification	GDP per capita (World Bank). Population age structure (UN for years around 1990). Sex Ratio	OLS regression; no multicollinearity; missing data means substitution	Both models provide some support.

Table 1- Continued

Study	Hypothesis(es)	Units of Analysis	Longi-tudinal?	Dependent Variable	Institutional Variables	Control Variables	Statistical Method(s)	Findings
Batton and Jensen (2002)	Decommodification and homicide vary inversely	US (N=1)	Yes	Homicide rate data came from Eckberg for 1900 to 1932 and fromNCHS annual mortality tables for 1933 to 1997.7	Homicide rate data came from Eckberg for 1900 to 1932 and fromNCHS annual mortality tables for 1933 to 1997.Inflation is controlled for over time.	Cirrhosis death rates per 100,000 as a proxy for alcohol consumption Prohibition legislation, Mob murders, immigration, unemplorment rates, divorce rates, armed forces, postwar period, age structure of the population	Time-series regression. Tests for stationarity and autocorrelation. Chow breakpoint tests.	Moderate support. Although no support for changes in decommodifiation significantly affecting homicide
Jensen (2002)	The U.S. should rank higher than other nations in the importance of the economy. Citizens of the U.S. should rank higher with regards to self-interest and utilitarian standards concerning law breaking (58).	International (N34-54)	No	Logged homicide rates per 100,000 from World Health Organization from 1990.	Economy- Decommoficiation from International Labour Organization. Survey measures of family, work, leisure, and religion. marriage/divorce ratio. Survey measures of legitimate means and commitment to goals.	Latin Country, Birth rates, Diversity, and per capita wealth	OLS regression. Normality tested. Missing data filled in from other sources such as Microcase (58)	No support. Results counter to IAT.
Maume and Lee (2003)	Noneconomic institutions will have a mediating effect on the economy with regards to creating criminogenic pressures, as opposed to moderating effects	U.S. Counties with population of 100,000 or more (N= 454)	No	Total homicides were obtained from the Supplementary Homicide Reports offender file for the years 1990-1992.	1990 Gini coefficient for family income inequality. Polity- average of the voting rates for the 1988 and 1992 presidential elections. Family- divorce for people 15 years of age and over. Education-average of educational expenditures per person of school age in the county for the years of 1987 and 1992. Religion-adherence rate to civically-engaged religious denominations for 1990. Average monthly welfare payments per poor person adjusted for cost of living and also the proportion of families receiving welfare in an index.	Population structure- z-scores for the logged population size and population density. Percentage of people aged 15-29. Percent black. Dummy coded South region	Negative binomial regression. Multicollinearity addressed.	Moderate support. strong mediating effect of the noneconomic institutions on the relationship between income inequality and instrumental crime.

Table 1- Continued

Study	Hypothesis(es)	Units of Analysis	Longi-tudinal?	Dependent Variable	Institutional Variables	Control Variables	Statistical Method(s)	
Cullen, Parboteeah, and Hoegl (2004)	The more dominant the economy, the greater the willingness of its managers to justify ethically suspect behaviors	Individual-level data from 3,450 managers across 28 nations in 2000.	No	Seven items that represent unethical behavior on a 1-10 scale and combining them using factor analysis	Several items measuring each of the four cultural values: individualism, achievement, universalism, and fetishism of money. Economy- Three-item measure for welfare socialism. Family- Marriage/divorce ratio. Education- educational attainment score.	Age, gender (dummy-coded), marital status (dummy coded), religious attendance.	HLM modeling. Multicollinearity addressed. Normality and homoscedasticity not addressed.	Moderate results in support of IAT.
Kim and Pridemore (2005b)	The association between (socio-economic) change and (property) crime is conditioned by the strength of non-economic social institutions (81).	Regions in Russia (N=78) for 2000.	No	Two separate DVs- Armed robbery rates and robbery rates per 100,000	Socioeconomic change- residual change (from 1992-2000) scores for a composite index made up of measures of the population, poverty, unemployment, privatization, and foreign capital investment in 2000 or closest year. Family- 1994 proportion of single-parent families with at least one child under 18. Education- logged rate of people enrolled in college per 1,000. Polity- logged proportion of registered voters who participated in the 2000 presidential elections (85-86).	Economic Inequality- P80/20 income ratio. Alcohol- Deaths rates from alcohol poisoning. Cities over 100,000 people. Males aged 25-44. North Caucasus and East of Ural Mountains were dummy coded. Interaction terms between socioeconomic change and the three measures for noneconomic institutions of the family, education, and polity were also included.	OLS regression. Normality, multicollinearity, and homoskedasticity are all taken care of. Missing data handled using other indicators to regress on variables with missing cases.	Little support found for hypothesis.

Table 1- Continued

Study	Hypothesis(es)	Units of Analysis	Longi-tudinal?	Dependent Variable	Institutional Variables	Control Variables	Statistical Method(s)	Findings
Baumer and Gustafson (2007)	Commitment among citizen to pursue monetary success, weak commitment among citizens to legitimate means of pursing monetary success goals, limited legitimate opportunities for pursuing monetary success, limited or unequal educational and economic attainment, and commitment to and investment in education, family, political, community, and religious institutions (629) are responsible for explaining differences in instrumental crime across geographic units.	U.S. counties (N=77) for 1975-1976	No	Crime rates- composite variable of the number of robberies, burglaries, larcenies, and auto thefts per 100,000 residents in 1977	Degree of commitment to monetary success goals and degree of weak commitment to legitimate means for pursuing monetary success goals were each measured with GSS questions. Economy- work force to job ratio. low educational and economic attainment - six items. Education and income inequality- income Gini and education Gini coefficients. Education- percentage of government expenditures on education, as well as a separate measure using pupils per teacher. Family- a composite of three items related to time spent with close relatives over the past month, and a separate measure that operationalizes marriage. Polity- separate measures of welfare assistance and voter participation. Religion- church adherence rates. Community- four items measuring social capital.	none	OLS regression. Assumptions never mentioned.	Support was shown through welfare assistance and time spent socializing with family members are moderators of dominant economic values on crime.
Muftic (2006)	Overall, that American students, relative to foreign-born students, will have an increased adherence to economic goal orientations that increase cheating behaviors (630)	Individual, U.S. born and non U.S. born students (N=162) from Midwest university from 2004.	No	Series of 11 questions on whether the student has cheated or not.	Cultural values of achievement, individualism, universalism, and fetishism of money were measured using a composite of one to seven questions from a survey. These four measures with factored into one variable; The American Dream, which was spilt into high and low measures. Family and Education- several measures for each variable factored into one variable for each measure. Economy- whether student was employed or not. Polity- whether student was civically active.	Age and categorical measures of gender, U.S. born, and citizen of the United States were used as control variables	Binary logisitc regression. No mentioned of assumptions of logistic regression.	Moderate support- the institutions of the family and polity had an inverse relationship with cheating. Universalism and fetishism of money predicted cheating, when all other variables were controlled

Table 1- Continued

Study	Hypothesis(es)	Units of Analysis	Longi-tudinal?	Dependent Variable	Institutional Variables	Control Variables	Statistical Method(s)	Findings
Schoepfer and Piquero (2006)	(1) Lower percentages of the population without high school degrees lessens the effect of unemployment on rates of embezzlement; (2) Lower divorce/marriage ratios (less divorces than marriages) lessen the effect of unemployment on embezzlement rates; (3)Hhigher percentages of registered voters who voted lessens the effect of unemployment on embezzlement (232)	U.S states (N=50)	No	Dependent variable-embezzlement rates per 100,000 from UCR data from 1990 and Census data to predicted rates of embezzlement in1991	Education- Percentage that did not graduate from high school. Polity-Percentage of people who participated in 1990 general and local elections. Family-Divorce/marriage ratio. Economy-percentage of population unemployed. Interaction terms between each noneconomic measure and the economy.	None	Poisson regression. Multicollinearity addressed	Moderate support-The results of this investigation were supportive of IAT. The additive effects indicated that higher levels of voter participation were prohibitive of embezzlement while increasing high school dropout rates exacerbated embezzlement… economy (and) polity, was significant. The sign of this interaction implied that higher rates of polity weakened the effect of unemployment on embezzlement (2006:223).
Freichs, Munch, and Monika (2008)	Overall, higher crime rates will result at the individual level by an individual failure to obtain goals and a failure at the structural level to integrate members of society successfully	Cross-national (N=20)	Yes	Two - robbery rate per 100,000 and homicide rate per 100,000.	Economic inequality- two measures—the Gini coefficient and P90/P10 earnings ratio. Education-Tertiary school enrollment rates. Family- Two measures, Female employment and divorce rates. Decommodification (Economy)-Union density rates and rates of public expenditure	Labor market flexibility- long-term unemployment. Punitivenes-imprisonment rates. proportion of men aged population for 15-29 and also the proportion of men unemployed 15-24. GDP per capita-dummy variables for each year to control for time	Normality was assessed. GMM used to correlate for possible autocorrelation. Minor multicollinearity was not addressed. Multiple imputation used to handle missing data.	Little direct support for IAT. Tested a different version of anomie. However, their research design proved successful as they were able to demonstrate that individual inclusion and stratified exclusion on the one hand and different strategies of integration (represented by the institutional indicators) on the other hand interlink in regulating the incidence of crime (209)

Table 1- Continued

Study	Hypothesis(es)	Units of Analysis	Longi-tudinal?	Dependent Variable	Institutional Variables	Control Variables	Statistical Method(s)	Findings
Bjerregaard and Cochran (2008a)	Nations with the highest structural anomie will have the highest rates of homicide.	Cross-national. (N=49)	No	Logged homicide rates from 1996-1999.	Economy- measure of economic freedom. Economic inequality- Gini coefficient of household income. Strength of economy- logged GDP in U.S. Dollars. All were mean centered Two-way interaction terms between each of the three economic variables, as well as a three-way interaction term. Family- divorce rate. Polity- Percentage of registered voters who did not participate. Education- expenditures on education as a percentage of the GDP	Economic growth- How advanced each nation's economy was. Measured through annual percentage growth in GDP, averaged from 1995 to 1997.	OLS Regression- All assumptions met. However, VIFs were higher and should be considered problematic.	These models provided mixed support for institutional anomie theory. Although, the GDP and Gini coefficient were significant as predictors of homicide rates, only the polity was significant as a noneconomic moderator of economic dominance on homicide rates.
Bjerregaard and Cochran (2008b)	The effect that noneconomic institutions will have either a mediating or moderating effect on crimes rates.	Cross-National (N=49)	No	Two - Total thefts and logged homicide rates per 100,000 for 1997 or 1996 if not available	Economy- measure of economic freedom. Economic inequality- Gini coefficient of household income. Strength of economy- logged GDP in U.S. Dollars. Family- combination of measures for divorce rates and females in the labor force. Education- combined variable of the measures illiteracy rates and pupil-to-teacher ratios. Polity- percentage of registered voters who did not participate in last election.	Due to problem of multicollinearity, the sex ratio, an index of racial heterogeneity, and percentage of population aged 15-29 were combined into one control variable. Affluence- composite measure that combined measures of GDP per capita in U.S. dollars, life expectancy, and annual health expenditures.	OLS regression- All assumptions were met.	The study yielded very limited results in support of institutional anomie theory.

Table 1- Continued

Study	Hypothesis(es)	Units of Analysis	Longi-tudinal?	Dependent Variable	Institutional Variables	Control Variables	Statistical Method(s)	Findings
Stults and Baumer (2008)	An expanded anomie model in which an unbalanced pecuniary value system – the core causal variable in Merton's theory and IAT – translates into higher levels of homicide primarily in indirect ways by increasing levels of firearm prevalence, drug market activity, and property crime, and by enhancing the degree to which these factors stimulate lethal outcomes (216).	U.S. Counties (N=74). GSS data from mid-to-late 1970s.	No	DV-1976-1978 averaged homicide rates per 100,000 people	Mediation variables- firearm prevalence measured by combining measures regarding ownership and suicide rates. Logged drug mortality rates per 100,000 from NCHS averaged from 1976-1978. Property crime per 100,000 from 1977 UCR data. Separate GSS questions responses capture the variables degree of commitment to monetary success goals and degree of weak commitment to legitimate means. Interaction terms for the two cultural values were used. Education- percentage of government expenditures on education, as well as a separate measure using pupils per teacher. Family- a composite of three items related to time spent with close relatives over the past month, and a separate measure that operationalizes marriage. Polity- separate measures of welfare assistance and voter participation. Religion- church adherence rates. Community- four items measuring social capital. Social structural positions are computed from three separate variables. Limited job opportunities are measured as the ratio of total persons aged 16 and older activity in or seeking in the job market to the number of jobs available. The variable low educational and economic attainment was composed of six items. Educational and income inequality were measured by the income Gini and education Gini coefficients.	Daily T.V.- mean number of hours watching television. Logged population size and logged population density were combined to create a population structure variable. Age structure- percentage of the population aged 16 to 34. Police strength - police officers per 100,000 residents. The South- region dummy variable. Resource deprivation- measured by combining the percentage who are poor, the percentage of families with children headed by a female, the percentage of residents who are black, and median family income into one variable	OLS regression- Assumption of linearity met.	Weak support- property crime was the strongest moderator of the effect of social structure on homicide rates. In the second series of models, social institutions had a mixed effect on different sets of models.

CHAPTER IV

METHODS

The Setting: Institutional Anomie Theory in Europe

The aim of this thesis is to explain the changes that occurred within Europe that have led to increases in crime victimization. Beginning in the 1970s and 1980s, and continuing after the formation of the European Union, a shift began for once strong social welfare states. This shift moved these nations toward economies that emphasized the free-market and individual responsibility, and a diminished social safety net. This also caused a shift in the institutional balance of power, as the economy became more dominant over other noneconomic institutions. For example, the four Nordic countries of Norway, Sweden, Finland, and Denmark had traditionally provided their citizens with the most access to social welfare programs of all of the European nations. This was possible as unemployment had been relatively low since the end of World War II. However, in the 1990s unemployment rose due to a hard recession that caused production and revenues to fall sharply. Within a few years, out of a reaction to the high unemployment rates, neo-liberal policies began to be passed in these nations, making it harder to obtain unemployment benefits. This led to changes towards stricter welfare policies throughout each of the four Nordic nations up to the present time (Johannson 2001:63-64).

A second case that follows a similar trajectory is the Netherlands. Oorschot (2006:58) describes how the Netherlands, which three decades ago could have been labeled a social democratic state, has shifted "…from a system based on collective solidarity towards one predominantly based on individual responsibility. In the process, the degree of social spending has decreased significantly." Many of the original social

welfare programs had begun following the conclusion of World War II with the notion that the citizens of the Netherlands deserve security and protection. Beginning in the late 1970s and early 1980s, in the context of an economic crisis and other domestic challenges such as a large aging population and high inactivity rates, many of the social welfare benefits Dutch citizens had enjoyed were changed or removed. However, in the mid-1980s, the economy recovered and unemployment rates slowly dropped from just over ten percent in 1985 to six percent in 1990 (Orrschot 2002:401), and economic and monetary reasons were no longer the argument for the reduction of social welfarism, but instead such reductions were justified based on a growing moral objection that individuals needed to be more responsible for their actions. Since 1980, total welfare expenditures as a percentage of its GDP has dropped from 26.9 to 21.8 percent, while old age, disability, unemployment, and family benefit expenditures, as well as active labor market policies, have all been reduced during this timeframe (Oorschot 2006:60-62).

Although not nearly as severe, the shift from social welfarism to a more free-market economy in Europe was similar to what happened to the United States beginning in the 1970s. The nations used in the example were nations that had tried to protect their citizens from the harsh effects of a free-market economy. These two sets of nations have not been the only nations in Europe experiencing welfare retrenchment. Korpi (2003) examines the overall state of social welfare policy and the shift from the social contract of full employment and a social welfare state to the reduction of social rights. In many instances these policies can be seen as reactive measures to short term problems (e.g., recession, high unemployment) that have had very long term consequences. With the growth of the European Union, many nations have had to deal with market policies that

have opened their borders to migrant workers, with many of these migrant workers willing to work for less money and without benefits. Employees who still want to remain members of the work force have to often do so with lower wages, slashed benefits, and little job security. Once again this follows a trend that began in the United States.

Using institutional anomie theory, this study will test to see if this transition from autonomous nations to one unified economy has led to an institutional dominance of the economy over other social institutions throughout Europe. In direct relation to this, we will see if this change has caused a cultural shift towards monetary success over other values and norms. Finally, this study will test to see if this structural and cultural shift towards economic dominance is responsible for increases in crime victimization over the last decade.

The study is unique in that it tests institutional anomie theory in the context of the changing landscape of Europe over time. Although the examples given focus on more advanced nations, less developed nations such as some of the Eastern European nations that belong to the European Union are also used in this study. This is due to the policies that have affected the institutional balance of power towards one that greatly favors the economy have been felt throughout the EU and nations that have close ties with it.

Data Sources

Two different datasets are be used in this study. The use of two datasets can provide greater reliability if they yield similar findings. The main dataset is the European Social Survey. Beginning in 2002, the ESS provides data for the full sample of the study (N=19) with 17 being members of the European Union (Austria, Belgium, Czech Republic, Germany, Denmark, Spain, Finland, France, United Kingdom, Greece,

Hungary, Ireland, Netherlands, Poland, Portugal, Sweden, Slovenia), while two (Switzerland and Norway) are not members. The second supplementary dataset will come from the Eurostat database. The Eurostat database was selected because it is identified by the European Social Survey as being a compatible dataset for providing contextual variables. The major difference is that the European Social Survey relies on individual survey responses from citizens of each of the respective countries, while Eurostat provides macro-level data from each respective nation.

The ESS datasets are available from European Social Survey website (http:/www.EuropeanSocialSurvey.org). Background information for the project and datasest can be found by clicking on the data documentation on the main page. On the next page the user will click on data archive, as this will direct the user to files that can be downloaded for each round of surveys (round 1 was collected in 2002, round 2 in 2004, round 3 in 2006, and round 4 in 2008) and provides information on the data collection methods employed in each round (http://ess.nsd.uib.no/). Each round differs slightly from the others, as each has a different focus. However, each round contains the same variables that will be used for this test of institutional anomie theory. Level-1 and level-2 data will come from the survey responses. Level-1 variables are based on questions that serve as control variables. Level-2 captures measures of institutions by aggregating up survey questions to the country level that capture the relative strength of a particular noneconomic institutions.

Data for the first round of the European Social Survey were collected in 2002. Originally 22 nations were used in the sample, with 15 being European Union nations, and 7 not being from the European Union. However, I removed one case (Israel), as it

really is not a part of Europe. A random probability sample of adults was used in each nation. The surveys were conducted through hour long face-to-face interviews. Survey question responses included discrete response choices (nominal and Likert scale questions), as well as continuous response choices (full-range of responses). Topics covered included, but were not limited to

> Immigration and asylum; citizenship and engagement; public trust; political interest and participation; socio-political orientations; governance and efficacy; moral, political and social values; social exclusion; national, ethnic and religious allegiances; well-being, health and security; demographics and socio economics (Norwegian Social Science Data Services 2002:5).

The second round of the European Social Survey was done in 2004. In all there were 23 nations in the sample, with 20 being European Union nations (Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, and Sweden), and 3 not being from the European Union (Iceland, Norway, and Switzerland). Random probability samples of adults were used in each nation. The surveys were conducted through hour long face-to-face interviews. Survey question responses included discrete response choices (nominal and Likert scale questions), as well as continuous response choices (full-range of responses). Topics covered included, but were not limited to, media; social trust; political interest and participation; socio-political orientations; social exclusion; national, ethnic and religious allegiances; health and care seeking; economic morality; demographics and socioeconomics; family, work and well-being (Norwegian Social Science Data Services 2004:6).

The third round of European Social Survey was conducted in 2006. There were 20 nations in the sample, with 18 being European Union nations (Austria, Belgium,

Bulgaria, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and United Kingdom), and 2 not being from the European Union (Norway and Switzerland). A random probability sample of adults was used in each nation. The surveys were conducted through hour long face-to-face interviews. Survey question responses included discrete response choices (nominal and Likert scale questions), as well as continuous response choices (full-range of responses). Topics covered included, but were not limited to

> media; social trust; political interest and participation; socio-political orientations; social exclusion; national, ethnic and religious allegiances; timing of key life events and the life course; personal and social well-being and satisfaction with work and life; demographics and socio economics (ESS Documentation Report 2006:6).

The fourth round of European Social Survey was conducted in 2008. In this round there were 22 nations in the sample, with 20 being European Union nations (Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and United Kingdom), and 2 not being from the European Union (Norway and Switzerland). A random probability sample of adults was used in each country. The surveys were conducted through hour long face-to-face interviews. Survey question responses included discrete response choices (nominal and Likert scale questions), as well as continuous response choices (full-range of responses). Topics covered includes, but were not limited to

> media; social trust; political interest and participation; socio-political orientations; social exclusion; national, ethnic and religious allegiances; attitudes towards and experiences of ageism; attitudes to welfare provision and service delivery; demographics and socio economics (ESS Documentation Report 2008:7).

Two sets of analyses were run to test institutional anomie theory. One set of tests used all of the European countries available in each survey. Thus, the level-2 sample size is different for each survey year (2002, N=19; 2004, N=23; 2006, N=20; and 2008, N=22). The second set of tests used the set of countries that is common across survey rounds (N=16)[i]. Use of the full set of countries available for each year increased the number of cases and hence the power of the statistical tests, while use of the common set of countries increased comparability. If both sets of tests yield the same results, confidence in the findings will be increased.

In our second dataset, Eurostat statistics (http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes), was used to provide macro-level institutional measures for the same points in time. The use of a second dataset can lend support for the findings from the first dataset and vice versa. Using this second dataset can also allow this study to use some of the measures that were used in previous studies to see if similar results are obtained. The Eurostat data were only be used for measures of the institutions, thus it was only used at level-2. For example, this dataset allowed creation of a decommodification index, which is used as a measure of economic strength in relation to the institution of the polity. Three variables were created using statistics from these data. These three measures are the ones reflecting the relative strength of the economy to the polity, education, and family, respectively.

Variables

The dependent variable or outcome variable is the variable that taps into the prevalence of crime within a given country. Our level-1 unit of analysis is the individual, so this measure is from the individual level. The European Social Survey has a question

regarding crime victimization (Norwegian Social Science Data Services 2002:38), "Have you or a member of your household been the victim of a burglary or assault in the last 5 years?" This was used to measure crime at the individual level. Response choices are (1=yes), (2=no), (7=refusal to answer), (8=Don't Know), and (9= No answer). This variable was dummy coded as yes being 1 and all else being 0. It is necessary to dummy code this variable as it needs to be transformed into a binary variable for use in logistic regression.

Control variables in this study are used to account for differences in population composition across nations. Because European Social Survey data has not been used in previous studies, the control variables that were used are unique to this study for the most part. Missing data for each variable was handled by imputing missing data. This was done through in SPSS by using the multiple imputation function. Multiply imputing all of the measures for social institutions at level-1 before aggregation also removed any missing data at level-2 for the European Social Survey dataset.

The question "Are you a citizen of [country]?" (Norwegian Social Science Data Services 2002b:42) was used as a control variable in this study. The responses to this question are coded (1=yes), (2=no), (7=refusal to answer), (8=Don't Know), and (9= No answer). Respondents who are a citizen of the country where they live should be less likely to be the victim of a crime, due to the higher probability they are in more stable socioeconomic group and also less likely to be a minority in the country. Citizen of country was coded with no being 0, yes being 1.

The question, "Do you belong to a minority ethnic group in [country]" (Norwegian Social Science Data Services 2002b:43), was used as a control variable that

measures membership in a disadvantageous group. This control variable is distinct from that of citizenship as members of minority groups can be citizens of from the country. The responses to this question are coded as (1=yes), (2=no), (7=refusal to answer), (8=Don't Know), and (9= No answer). This control variable was dummy coded with 0 being yes and 1 being no.

Gender is a variable that has been used in previous research as a control variable. Research shows women are less likely to commit crimes, as well as less likely to be crime victims. The question "CODE SEX, respondent" or gender (Norwegian Social Science Data Services 2002b:62) is coded as 1 for male, 2 for female, and 9 for no answer. Gender was recoded with female 1 and male equal to 0.

"Age of respondent, calculated" (Norwegian Social Science Data Services 2002b:63) was used as a control variable. Those in younger age groups (under 25) are most likely to commit crimes as well as to be crime victims. In prior studies such as Kim and Pridemore (2006), age specific groups are examined. However, this variable is continuous and includes the full range of values. Recoding of the imputed data was done to ensure that the minimum value was set at 15 and maximum value was set at 102. Any value below the minimum age was recoded as 15 and any value above the maximum was recoded as 102.

To control for the size of the area a respondent lives in, the variable domicile was used. The respondent was specifically asked, "Which phrase on this card best describes the area where you live?" (Norwegian Social Science Data Services 2002b:65), with response choices (1= A big city), (2= The suburbs of outskirts of bit city), (3= A town or small city), (4= A country village), (5= A farm or home in the countryside), (7=refusal to

answer), (8= don't know), and (9= No answer). On average people are much more likely to be crime victims in large urban areas than in smaller towns and rural areas.

Up until the fall of the Soviet Union, several of the nations used in this study were communist, rather than democratic, free-market nations, while not every nation that adopted communism belonged to the Soviet Union, such as the former nation of Yugoslavia. By the time the Soviet Union collapsed, all these previously communist nations had adopted free-market economies. A dummy variable was created for nations that were former communist nations, as these nations may have different patterns of crime victimization, as they have more recently adopted free-market economies. This variable was dummy coded with (1= former communist nations) and (0= all other nations).

The second level (level-2) of analysis is at the nation-state level. Every analysis conducted was intended to explain variations that are occurring across nations. All of level-2 variables from the European Social Survey are aggregated to the national level from the individual responses. These variables are aggregated by creating a mean or median, depending on the level of measurement, for all of the respondents of a given country. These variables were recoded, if necessary at the first level. All of the variables used at the second level measure the relative strength of the social institutions vis-á-vis the economy. With the ESS dataset, separate measures are used for a cultural item, religion, education, and family. The second set of measures comes from Eurostat, which includes a decommodification index that measures the strength of the polity relative to the economy. Other Eurostat measures include measures for the strength of the family and education in relation to the economy.

Religion is the first noneconomic institution included in this study. People who spend more time involved in religion should be less involved in the institution of the economy and vice versa. Religion is a noneconomic institution that is typically left out of cross-national studies due to the lack of government statistics on religious adherence and membership. However, ESS data provide a measure of religious involvement through the question (C 14), "Apart from special occasions such as weddings and funerals, about how often do you attend religious services nowadays?" (Norwegian Social Science Data Services 2002b:40). This variable was originally coded as (1= Every day), (2= More than once a week), (3= Once a week), (4= At least once a month), (5= Only on special holy days), (6= Less often), (7= Never), (77= Refusal), (88= Don't know), and (99 No answer). Coding for the religion variable was reversed so that higher religious involvement would be represented by a higher value (7= Every day) and lower religious adherence would be represented by a lower score (1= Never).

Education is the second noneconomic institution used in this study. It is one of the key variables Messner and Rosenfeld (2007) discuss. Education has been measured differently in numerous studies. For instance, Bjerregaard and Cochran (2008b) measured education by combining illiteracy rates and pupil-to-teacher ratios into one variable based on the results of a principal components analysis. Maume and Lee (2003) measured education as the average of educational expenditures per person of school age in the county for the years of 1987 and 1992. Education in this study was measured from the response to the question (Norwegian Social Science Data Services 2002b:33), "What is the highest level of education you have achieved?" Response categories included (0= Not possible to harmonise into 5-level ISCED), (1= Less than lower secondary education),

(2= Lower secondary education completed), (3= Upper secondary education completed), (4= Post-secondary non-tertiary education completed), (5= Tertiary education completed), (55= Other) (77= Refusal), (88= Don't know), and (99= No answer). The value "Other" was recoded as system missing. Respondents who have obtained higher education are more likely to earn more money and thus live outside of areas that have higher rates of crime victimization.

The final noneconomic institution based on the ESS dataset is the family. The family is an important buffer from the harsh effects of a free-market economy. The stronger a family is, and the more time they spend together as a whole, the less they should be affected by the economy. A common way that the strength of the family has been measured is through divorce rates, as this is viewed as a form of family disruption (Maume and Lee 2003; Schoepfer and Piquero 2006). Family strength was measured using the question (F 58), "Could I ask about your current legal marital status? (Norwegian Social Science Data Services 2002b:87) Which of the descriptions on this card applies to you?" (Appendix A3 2002:87). Response choices to the question were (1= Married), (2= Separated (still legally married)), (3= Divorced), (4= Widowed), (5= Never married), (6= Pacte de solididarité (PACS)), (7= Refusal), (8= Don't know) (9= No answer). Marital status was measured with a variable for France and a separate variable for the rest of the ESS. First, both ordinal variables had to be recoded with the categories divorced and separated as equal to 1, with all else equal to 0. Then the variables had to be merged by combining the responses for 1 and 0 into one marital status variable.

The second set of institutional measures comes from the Eurostat database. The first measure used is the decommodification index. A decommodification index has been

used by researchers such as Messner and Rosenfeld (1997b) and Savolainen (2000) to test the strength of the economy relative to the polity. Messner and Rosenfeld (1997b:1399) originally used a decommodification index based on the justification that "…general expenditure patterns reflects the underlying logic of social welfare programs." Results in Messner and Rosenfeld (1997b) and Savolainen found that a decommodification index was highly correlated with crime rates. They measured decommodification by combining three measures—social expenditures as a percentage of gross domestic product, social expenditures per capita, and percentage of social expenditures on disability. A principal components analysis was run to determine whether these three statistics can be justifiably combined into one measure All three measures were obtained from the Eurostat database for each country. These measures were converted to z-scores prior to analysis.

Education is another institution that can be measured with data available in the Eurostat database. The relative strength of the institution of education in comparison to the economy is measured using the annual expenditure on public and private educational institutions. The higher the amount of spending, the less dominant the economy should be with regards to the institution of education. Baumer and Gustafson (2007) and Bjerregaard and Cochran (2008a) used a similar measure in their study, as they used public school expenditures as a percentage of the GDP.

The strength of the family was also measured using Eurostat data on family composition. Similar to the measure based on the ESS, the Eurostat measure for family strength was based on the prevalence of marriages and divorces. Family strength was measured as the ratio of marriages to divorces per 1,000 for a given year. This has been

used in several studies (e.g., Chamlin and Cochran 1995) as a measure of the strength of the institution of the family. More specific data on the composition of the family is not available for all the nations in the sample. Higher divorces should result from a culture and social structure that emphasize the importance of the economy and monetary success, because more time will be spent at work and less with family. Therefore, a higher ratio of marriages to divorces should result in lower rates of crime victimization.

Social structure represents only half of the theoretical framework of institutional anomie theory. To test institutional anomie theory properly, one must include measures that tap into cultural values that favor the "American Dream" or monetary success over other values. Using the European Social Survey, two items were used to tap into the cultural importance of monetary success. The first variable, ipsuces, measures the importance of being successful to an individual. The second variable, imprich, measures the importance of being rich, having money and expensive things to an individual. They were reverse coded so that the higher the values on these Likert scales, the higher importance an individual attaches to being successful or rich. Principal components and reliability analyses were conducted to verify that the variables could be combined in a summated scale. This measure was aggregated to be used as a level-2 variable.

Hypothesized Models

The level-1 model in HLM is composed of the dichotomous outcome variable, crime victimization, and the individual-level control variables. Logistic regression models the log odds of crime victimization as a function of the individual-level predictors. The logit coefficients (β's) show the increase in the log odds of crime victimization for a unit change in the independent variable of interest, and when

exponentiated, they show how many times the odds of crime victimization increase for a unit change in the independent variable. The symbol η_{ij} is used for the mixed logit model for the dichotomous variable. Presented below is the actual equation from HLM of the level-1 model. In this regression equation β_{0j} represents the intercept, while β_{1j}- β_{6j} represent the logit coefficients for each of the level-1 variables—dummy variable for citizen of nation (CTZCNTR), Minority status (MINORITY), respondents gender (GENDER), Age of respondent (AGE), size of domicile (DOMICILE), and being to the former communist bloc (CommunistBloc).

Each of these level-1 predictors is expected to have an effect on the dependent variable. Respondents who are citizens of the country are hypothesized to have lower log odds of being the victimized. Respondents who are members of a minority within a given country are hypothesized to have higher log odds of being the victimized. Being female is hypothesized to decrease the log odds of being victimized. It is hypothesized that the younger the respondent is, the higher the log odds of being victimized. Living in larger cities is hypothesized to increase the log odds of being victimized. Finally, living a former communist bloc country is hypothesized to increase the log odds of being victimized.

Level-1 Model

$$\text{Prob}(CRMVCTDV_{ij}=1|\beta_j) = \phi_{ij}$$

$$\log[\phi_{ij}/(1 - \phi_{ij})] = \eta_{ij}$$

$$\eta_{ij} = \beta_{0j} + \beta_{1j}*(CTZCNTR_{ij}) + \beta_{2j}*(MINORITY_{ij}) + \beta_{3j}*(GENDER_{ij}) + \beta_{4j}*(AGEDC_{ij}) + \beta_{5j}*(DOMICILE_{ij}) + \beta_{6j}*(\text{CommunistBloc}_{ij})$$

The Level-2 model(s) is a random-intercept model where differences in adjusted mean log odds of crime victimization across countries are modeled as a function of the social institutional variables. Only the intercept is specified as random in the model(s), which means that only the intercept can vary randomly across nations, while all of the effects of the level-1 variables are specified as fixed (i.e., the same) across nations. Presented below is the level-2 model that includes the institutional measures from the European Social Survey and Eurostat. In this model, β_{0j} represents the intercept at level-1. The symbol γ_{00} represents the intercept at level-2, while in model 1, γ_{01}- γ_{02} are the institutional and cultural variables, cultural values variable (cultural item) and decommodification index (DECOMM). Due to the small number of nations in the sample for the common set of countries, as well as the full set of nations for the year 2002, both sets of models will be broken down into more analyses, as the maximum number of variables allowed at level-2 will be three. Each subsequent model includes each one of the following institutions as γ_{01}: variable religiosity (ESSRELIG), educational attainment level (ESSEDUCA), family composition (ESSFAMIL), annual educational expenditures (ESEDUCAT), marriage-to-divorce ration (ESFAMILY). The symbol u_{0j} represents the random intercept part for the models.

With the first dataset, the level-2 (across nations) variables are each expected to affect the dependent variable. First, countries that have placed higher average importance on being rich and successful are expected to have higher log odds of crime victimization. Countries with higher average religiosity are hypothesized to have lower log odds of crime victimization. Countries that have higher average education attainment levels are hypothesized to have lower log odds of crime victimization. Countries that have higher rates of divorce on average are hypothesized to have higher log odds of crime victimization. For the second level-2 dataset, countries with higher average religiosity are hypothesized to have lower log odds of crime victimization. Countries with higher decommodification scores are hypothesized to have lower log odds of crime victimization. Countries with higher annual expenditures on education are hypothesized to have lower log odds of crime victimization. Countries with a higher ratio of married-to-divorce ratios are hypothesized to have lower log odds of crime victimization.

Level-2 Model with

$$\beta_{0j} = \gamma_{00} + \gamma_{01}*(Decommod) + \gamma_{02}*(Culturalitem_j) + \gamma_{03}*(\text{“}institutional\ measure_j\text{”}) \quad u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

$$\beta_{4j} = \gamma_{40}$$

$$\beta_{5j} = \gamma_{50}$$

$$\beta_{6j} = \gamma_{60}$$

Statistical Methods

Missing Data

Missing data from individual survey responses were handled by multiple imputation. This was done in SPSS by first separating each nation using split file. Separating the responses by each nation, gives a more accurate estimate of an actual response from a citizen of that particular country. Thus, the imputed data are more reliable than not splitting the file. Then, missing responses were estimated by running multiple imputation in SPSS. One major strength of using multiple imputation over more traditional methods of handling missing data such as listwise or pairwise deletion is it allows the researcher to maintain the highest possible sample size, as cases are not deleted if the surveys are not answered completely. Allison (2000:301-302) argues that when using multiple imputation "[i]ntroducing appropriate random error into the imputation process makes it possible to get approximately unbiased estimates of all parameters. No deterministic imputation method can do this in general settings." Repeated imputations also allow for better standard error estimates, with the average number of repeated imputations ranging from three to five. Allison also discusses three assumptions that must be met when considering the use of multiple imputation:

> [f]irst, the data must be missing at random, meaning that the probability of missing data on a particular variable Y can depend on the other variables, but not on Y itself (controlling for the other observed variables). Second, the model used to generate the imputed values must be "correct" in some sense. Third, the model used for the analysis must match up, in some sense, with the model used in the imputation (2000:302).

However, determining whether or not the data is truly missing at random is something that can easily be mistaken.

Regression Diagnostics

Since the dependent variable is dichotomous, Bernoulli binary logistic regression will be used. Normality and homogeneity of variance are not required with binary logistic regression, thus only multicollinearity and linearity must be assessed using SPSS. Both the level-1 and level-2 data must be addressed separately. There are four main tests for multicollinearity: VIFs (variance inflation factor), condition indexes, tolerances, and eigenvalues. VIFs measure how the much the variances increase because of higher correlated independent variables in a regression analysis. The cutoff value for each VIF is 2.5. Tolerance measures amount of unique variance in each independent variable. The closer the value is to 0, the more the variable has variance that overlaps with the other independent variables in the equation. Eigenvalues that are close to zero are considered problematic. The condition index is a ratio of an eigenvalue of one of the independent variables on the other independent variables. Dimensions with a condition index above 30 could be problematic. Excessive multicollinearity at level-1 would be addressed by either removing the variable from the model or leaving it in with a specific justification. The assumption of linearity must be addressed separately. A Box-Tidwell test was used to assess the linearity of the contiuous variables, age. This was done by computing Box-Tidwell variables for my continuous level-1 variables. I then ran a binary regression with all of my original predicators and my new Box-Tidwell term in the model. The Box-Tidwell term is likely to be significant at the .05 level, due to the large sample size. Thus we must look at the odds coefficients to see if they greatly differ from 1 to see if linearity is a problem.

Analysis Procedures

This study used hierarchal generalized linear modeling procedures in HLM 7.0 to test institutional anomie theory within nations, as well as testing for variations across nations. Hierarchal generalized linear modeling is a statistical tool that allows testing of multilevel models. I created two separate analysis files for each of the datasets, one with the common set of 16 countries, and the other with all available countries for the given survey year. As I was looking at four different points in time (2002, 2004, 2006, 2008), two different sets of countries per year, there will be 8 models total. After each dataset was loaded into HLM 7.0, Bernoulli logistic regression was selected. Restricted maximum likelihood estimation was selected. The design weight for the level-1 ESS data was used to make the data representative of the population in each nation.

Following Hox (2010), I ran several models with hierarchical generalized linear modeling to help justify my final two-level model. My modeling began with just my outcome variable at level-l and overdispersion on. I then ran an intraclass correlation test to see if I had enough variation between nations to justify a two-level model. When there was significant variation in crime victimization across nations the need for a multilevel model was established. When the residual variation at level 1, σ^2, is close to 1, I then turned off over dispersion for the rest of my models. After this I ran the model including all of the level-1 predictors. Following this I ran a random-intercept model with the institutional and cultural variables included as predictors of cross-national differences in crime victimization. The model first contained only the decommodification index and the cultural item. Next, separate models were run with the decommodification index, cultural item, as well as one institutional variable.

In the next chapter, I present the results of my analyses. Besides simply explaining and tabling the results for the models I also compare the results of the models using ESS institutional measures with those based on Eurostat institutional measures. This is important to see if the different sets of measures yield comparable results. Similarity in significant findings with both sets of measures can lend empirical justification to using either survey data or aggregate data for testing institutional anomie theory. Finally, Chapter 6 discusses the findings, addresses limitations, and draws conclusions for this study.

CHAPTER V

FINDINGS

Preliminary Diagnostics

There are two assumptions to be met in logistic regression—non-problematic levels of multicollinearity (i.e., no perfect or near perfect correlation or redundancy between the independent variables)—and a linear relationship between the continuous independent variables and the log odds of the dependent variable (Menard 2002:67-78).

Therefore, the first step in the analysis was to check to be sure these two assumptions were met.

Collinearity diagnostics were examined for both level-1 (within nations) and level-2 models (across nations). These diagnostics revealed that the variances and standard errors of the coefficients are minimally inflated by collinearity and that each independent variable has sufficient unique variation. The condition indexes at level 2 did show some instability in the results, but this is in part due to the small number of nations included in the analysis. [ii] Thus, there was no evidence that multicollinearity was having an adverse effect on the logistic regression results. This is consistent throughout all years, therefore no changes to the current data sets due to multicollinearity were necessary.

The Box-Tidwell test was used to test for nonlinearity. This test involved computing the Box-Tidwell term for my only continuous level-l variable, age of respondent, by multiplying it by its natural log. A binary regression with all of the original predictors at level-1 and the new Box-Tidwell term was then performed. The Box-Tidwell term for age had a p-value of <.001 indicating that it is statistically significant. The original age variable's direction of relationship flipped, causing it to now

have a positive relationship with the dependent variable. The tests were consistent for all data sets. To fix this problem of nonlinearity, three separate dummy variables were created: ages 41 to 60, 61-80, and 81 to the highest age (102). Ages 15 to 40 is the reference group. Each dummy variable has one of three age groups coded as 1 and every other age group coded as 0. At level2, there were no problems with nonlinearity with any of the continuous variables, thus nothing was done with regards to recoding variables at level 2.

Analyses and Results

Findings for 2002 Full Sample of Nations

Table 2 presents the results of the logistic regression for the full sample of nations available in 2002 (N=19). Model 1 is the intercept-only model, estimated to determine whether there is sufficient variation in crime victimization across nations to warrant a multilevel analysis. This model shows that 15.05% of the variation in crime victimization is between nations, thus showing the need for a multilevel analysis.

Model 2 shows the results of the level-1 model. Five of the level-1 variables are statistically significant, three being age dummy variables. Females were 11.6% less likely to be crime victims than males (b = -.122 , p =.001). In addition, the dummy coded variable for ages 41 to 60 was significant (b = -.151, p = <.001), as belonging to this age group reduced the odds of crime victimization by 14.0% compared with the reference group of those aged 15 to 40. Belonging to the second dummy coded age group (ages 61 to 80) reduced the odds of crime victimization by 50.0% compared with the reference group of those aged 15 to 40 (b= -.693, p = <.001). Finally, belonging to the third dummy coded age group (ages 81 to highest) reduced the odds of crime victimization by 61.6%

compared with the reference group of those aged 15 to 40 (b= -.957, p = <.001). Thus, the relationship between age and crime victimization is nonlinear as indicated by the Box-Tidwell test. Finally, living in smaller places significantly reduced the odds of crime victimization by 22.4% for every decrease in domicile size (b = -.254, p = <.001). The remaining independent variables at level 1—minority, citizen, and living in a former Soviet Bloc nation—were not statistically significant.

Models 3 through 8 present the results of the level-2 analyses that test institutional anomie theory. Each of these models contains the decommodification index that measures the strength of the polity relative to the economy, with high values indicating the polity is strong relative to the economy, and the cultural measure of the importance of being rich, having money and expensive things, and being successful, with high values indicating high importance. Model 3 includes these two measures alone. Models 4 through 8 each include one additional institutional measure. This procedure was followed due to the small sample size at level 2 and the resulting limited number of degrees of freedom.

Model 3 shows that, consistent with institutional anomie theory, decommodification significantly reduces crime victimization (b = -.071, p = .022). For each unit increase in the decommodification index, the odds of crime victimization drop by 7.1%. The cultural measure of importance of being rich and material success has a negative, significant impact on crime victimization (b = -.707, p = <.001). For each unit increase in the importance of being rich and material success, there is a 49.3% reduction in the odds of crime victimization. In other words, more emphasis on the importance of

Table 2- Logistic Regression Results for Full Sample of Nations (N=19), 2002

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-1.279	-.347	4.291	4.735	4.023	4.272	4.310	4.035
	(.086)	(.151)	(1.010)	(1.059)	(1.113)	(1.024)	(1.031)	(1.067)
	.278*	.707*	73.043*	113.868*	55.882*	71.640*	74.414*	56.563*
Across Nations								
Decommodification index (Eurostat)			-.073	-.054	-.084	-.074	-.091	-.072
			(.034)	(.034)	(.040)	(.032)	(.044)	(.032)
			.929*	.948*	.919*	.928*	.913*	.930*
ean) Cultural importance of being rich, having money and expensive things and being successful (high values=High importance, ESS)			-.707	-.721	-.682	-.702	-.693	-.675
			(.157)	(.151)	(.164)	(.165)	(.159)	(.164)
			.493*	.487*	.506*	.496*	.500*	.509*
Level of educational attainment (ESS)				-.138				
				(.124)				
				.871				
Family (ESS)					1.316			
Divorced/Separated rate over all else					(2.796)			
					3.729			
(Median) Religion (ESS) Religious attendance levels.						-.007		
						(.057)		
						.993		
Family (Eurostat) Marriage to Divorce ratio for 2002							-.036	
							(.049)	
							.964	
Spending on public education per capita (Eurostat)								<.001
								(< .001)
								1.000

Table 2- Continued

Within Country (ESS)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Domicile (size of place of residence, higher values are smaller places)		-.254 (.022) .776*	-.258 (.023) .772*	-.258 (.023) .772*	-.259 (.023) .772*	-.259 (.023) .772*	-.259 (.023) .772*	-.258 (.023) .772*
Minority		-.018 (.079) .982	-.018 (.083) .981	-.019 (.083) .981	-.019 (.083) .981	-.019 (.083) .981	-.019 (.083) .981	-.019 (.083) .981
Female		-.123 (.039) .884*	-.125 (.040) .882*	-.125 (.040) .882*	-.125 (.040) .882*	-.125 (.040) .882*	-.125 (.040) .882*	-.125 (.040) .881*
Citizen		.083 (.116) 1.086	.081 (.123) 1.085	.082 (.122) 1.085	.082 (.122) 1.085	.081 (.122) 1.085	.081 (.123) 1.085	.081 (.123) 1.085
Communist Bloc nation		.028 (.119) 1.030	.023 (.167) 1.024	.110 (.160) 1.116	-.036 (.231) .965	.019 (.170) 1.019	-.154 (.037) .940	.041 (.156) 1.042
Age 41-60 (Dummy coded) against all other ages		-.151 (.036) .860*	-.154 (.037) .858*	-.154 (.037) .858*	-.154 (.037) .858*	-.154 (.037) .858*	-.154 (.037) .858*	-.154 (.037) .858*
Age 61-80 (Dummy coded) Against all other ages		-.693 (.694) .500*	-.704 (.071) .495*	-.704 (.070) .495*	-.704 (.071) .495*	-.704 (.071) .495*	-.704 (.071) .494*	-.704 (.070) .495*
Age 81-highest (Dummy coded) against all other ages		-.957 (.134) .384*	-.969 (.138) .379*	-.970 (.137) .379*	-.969 (.138) .379*	-.969 (.138) .379*	-.970 (.138) .379*	-.969 (.137) .380*
ICC	15.05%							

Logit coefficient (standard error) odds ratio.

*Significant at $p < .10$ level , one-tailed test

being rich and material success decreases the odds of crime victimization, which goes against institutional anomie theory.

The remaining models in Table 2 show that the results found for the decommodification index and the cultural measure of being rich and material success remains statistically significant and of approximately the same magnitude when each of the other institutional variables is added to the level-2 model. However, none of the institutional measures for family, education, or religion are statistically significant, contrary to institutional anomie theory.

In sum, the results for the full set of available nations in 2002 provide partial support for institutional anomie theory. The odds of crime victimization are reduced when the polity is strong relative to the economy. However, an over-emphasis on being rich and material success *decreases* the odds of crime victimization. This relationship runs contrary to institutional anomie theory, as an over-emphasis on material success should increase the likelihood of crime victimization.

Findings for 2002 Common Sample of Nations

Table 3 presents the results of the logistic regression for the common sample of nations in 2002 (N=16). The second data set for 2002 follows the same steps as the full sample of nations. Model 1 shows that 13.14% of the variation in crime victimization is between nations, thus showing the need for a multilevel analysis. Just like the first data set, Model 2 shows the results of the level-1 model. Five of the level-1 variables are statistically significant. Females were 12.2% less likely to be crime victims than males (b = -.130, p =.002). Living in smaller places significantly reduced the odds of crime victimization by 21.0% for every decrease in domicile size (b = -.236, p = <.001).

Finally, the dummy coded variable for ages 41 to 60 was significant (b = -.185, p = <.001), as belonging to this age group reduced the odds of crime victimization by 16.9%. The second dummy coded age group (ages 61 to 80) reduced the odds of crime victimization by 53.4% for belonging to this age group (b= -.763, p = <.001). The third dummy coded age group (ages 81 to highest) reduced the odds of crime victimization by 65.4% for belonging to this age group (b= -1.062, p = <.001). Similar to the full sample of nations, the remaining independent variables at level 1—minority--, citizen, and living in a former Soviet Bloc nation—were not statistically significant.

Models 3 through 8 present the results of the level-2 analyses that test institutional anomie theory, with the same procedures that were followed in the first data set. Model 3 shows that the decommodification index is a significant predictor of crime victimization at level-2, with a one unit increase in decommodification decreasing the odds of crime victimization by 2.7% (b = -.068, p = .199). Contrary to institutional anomie theory, the cultural measure of being rich and material success has a negative, significant impact on crime victimization (b = -.677, p = .014). For each unit increase in the importance of material success, there is a 49.2% reduction in
the odds of crime victimization. Consistent with the first data set for 2002, the more emphasis on the importance of being rich and material success has an effect that decreases the odds of crime victimization.

The remaining models in Table 3 show that the decommodification index has the expected negative effect on crime victimization only in Models 4 and 5, while the cultural measure of being rich and material success remains negative, statistically

Table 3- Logistic Regression Results for Common Sample of Nations (N=16), 2002

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-1.230	-.294	4.032	4.458	3.668	4.075	4.223	3.727
	(.087)	(.174)	(1.708)	(1.603)	(1.806)	(1.719)	(1.822)	(1.756)
	.292*	.745*	56.364*	86.345*	39.181*	58.860*	68.267*	41.571*
Across Nations								
Decommodification index (Eurostat)			-.067	-.154	-.046	-.032	-.048	-.026
			(.041)	(.102)	(.033)	(.032)	(.040)	(.030)
			.935	.990	.955*	.969	.953	.974
(Mean) Cultural importance of being rich, having money and expensive things and being successful (high values=High importance, ESS)			-.677	-.680	-.652	-.676	-.690	-.637
			(.273)	(.248)	(.279)	(.275)	(.287)	(.280)
			.508*	.507*	.521*	.509*	.501*	.529*
Educational attainment (ESS)				-.154				
				(.102)				
				.857*				
Family (ESS) Divorced/Separated rate over all else					2.423			
					(2.690)			
					11.280			
Religion (ESS) Religious attendance levels.						-.022		
						(.046)		
						.978		
Family (Eurostat) Marriage to Divorce ratio for 2002							-.037	
							(.039)	
							.964	
Spending on public education (Eurostat)								<.001
								(< .001)
								1.000

Table 3- Continued

Within Country (ESS)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Domicile (size of place of residence, higher values are smaller places)		-.236 (.022) .790*	-.238 (.022) .788*	-.238 (.022) .788*	-.238 (.022) .788*	-.238 (.022) .788*	-.238 (.022) .788*	-.238 (.022) .788*
Minority		-.020 (.090) .980	-.020 (.091) .981	-.020 (.091) .980	-.020 (.091) .981	-.020 (.091) .981	-.020 (.091) .981	-.020 (.091) .980
Female		-.130 (.045) .878*	-.131 (.046) .877*	-.132 (.046) .877*	-.132 (.046) .877*	-.131 (.045) .877*	-.131 (.046) .877*	-.131 (.046) .877*
Citizen		.086 (.140) 1.090	.086 (.142) 1.090	.086 (.142) 1.090	.087 (.14) 1.091	.086 (.141) 1.090	.086 (.142) 1.090	.086 (.142) 1.090
Communist Bloc nation		-.105 (.109) .901	.354 (.194) 1.425	.378 (.195) 1.459*	.333 (.219) 1.394*	.368 (.192) 1.445*	.319 (.2221) 1.377	.350 (.187) 1.420
Age 41-60 (Dummy coded) against all other ages		-.185 (.032) .831*	-.186 (.033) .830*	-.187 (.033) .830*	-.187 (.033) .830*	-.186 (.033) .830*	-.186 (.033) .830*	-.186 (.033) .830*
Age 61-80 (Dummy coded) Against all other ages		-.763 (.058) .466*	-.769 (.058) .463*	-.770 (.058) .463*	-.770 (.058) .463*	-.769 (.058) .463*	-.770 (.058) .462*	-.769 (.058) .463*
Age 81-highest (Dummy coded) against all other ages		-1.062 (.139) .346*	-1.069 (.139) .343*	-1.071 (.139) .343*	-1.070 (.138) .343*	-1.069 (.138) .343*	-1.069 (.138) .343*	-1.069 (.138) .343*
ICC	13.14%							

Logit coefficient (standard error) odds ratio.

*Significant at $p < .10$ level , one-tailed test

significant, and of approximately the same magnitude when each of the other institutional variables is added to the level-2 model. Only one other institutional variable was statistically significant when added in with the decommodification index and the cultural measure of being rich and material success. Consistent with institutional anomie theory, the ESS measure for educational attainment is a significant predictor at level-2 (b= -.154, p= .079). For each level increase in educational attainment, there is a 14.3% decrease in crime victimization.

In sum, the results for the common set of available nations in 2002 provide partial support for institutional anomie theory. This set of nations does provide more support in favor institutional anomie than the full sample of nations. The odds of crime victimization are significantly reduced when the polity is strong relative to the economy only in Models 3-5. Contrary to institutional anomie theory, over-emphasis on being rich and material success actually decreases the odds of crime victimization. The ESS education predictor in Model 4 is the only other predictor that is statistically significant.

Finding for 2004 Full Sample of Nations

The results of the logistic regression for the full sample of nations in 2004 (N=23) are presented in Table 4. The results for 2004 follow the same procedures that were discussed for the data sets for 2002. Model 1 shows that 11.67% of the variation in crime victimization is between nations, thus showing the need for a multilevel analysis. In model 2 of the analysis, seven level-1 variables are statistically significant. First, females were 4.5% less likely to be crime victims than males (b = -.046, p =.081). Being a citizen of a country increases the odds of crime victimization by 19.8% (b = .180, p = .003). The direction of this relationship runs counter to the hypothesis. Not being a

minority reduces the odds of crime victimization by 17.0% (b = -.187, p = .003). Living in smaller places (domicile) significantly reduced the odds of crime victimization by 19.0% for every decrease in domicile size (b = -.210, p = <.001). The dummy coded variable for ages 41 to 60 was significant (b = -.101, p = <.004), as belonging to this age group reduced the odds of crime victimization by 9.6%. The second dummy coded age group (ages 61 to 80) reduced the odds of crime victimization by 45.6% for belonging to this age group (b= -.609, p = <.001). The third dummy coded age group (ages 81 to highest) reduced the odds of crime victimization by 62.9% for belonging to this age group (b= -.991, p = <.001). The variable former Soviet Bloc nation was the only independent variable at level-1 not statistically significant.

The results of the level-2 analyses that test institutional anomie theory are displayed in Models 3-8 in Table 4. Model 3 shows that the decommodification index is not statistically significant at level-2. Also, contrary to institutional anomie theory, the cultural measure of being rich and material success has a negative, significant impact on crime victimization (b =

-.524, p = .002). For each unit increase in the importance of being rich and material success, there is a 40.8% reduction in the odds of crime victimization. The more emphasis on the importance of being rich and material success has an effect that decreases the odds of crime victimization in this model.

The remaining models in Table 4 show that the cultural measure of being rich and material success remains statistically significant and of approximately the same magnitude when each of the other institutional variables is added to the level-2 model. Unlike like the results in 2002, the decommodification index is not statistically

Table 4- Logistic Regression Results for Full Sample of Nations (N=23), 2004

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-1.299	-.486	2.908	3.612	2.849	2.958	2.899	2.807
	(.071)	(.111)	(.977)	(.977)	(1.042)	(.973)	(.979)	(1.006)
	.273*	.615*	18.323*	37.057*	17.268*	19.263*	18.162*	16.567*
Across Nations								
Decommodification index (Eurostat)			-.011	-.008	-.011	-.009	-.010	-.013
			(.027)	(.029)	(.026)	(.027)	(.028)	(.027)
			.989	.992	.989	.991	.990	.988
(Mean) Cultural importance of being rich, having money and expensive things and being successful (high values=High importance, ESS)			-.524	-.568	-.517	-.538	-.527	-.511
			(.149)	(.142)	(.153)	(.150)	(.146)	(.152)
			.592*	.566*	.596*	.585*	.590*	.600*
Educational attainment (ESS)				-.150				
				(.078)				
				.861*				
Family (ESS)					.194			
Divorced/Separated rate over all else					(1.385)			
					1.214			
Religion (ESS)						.021		
Religious adherence levels.						(.034)		
						1.021		
Family (Eurostat)							.012	
Marriage to Divorce ratio for 2002							(.036)	
							1.013	
Spending on public education (Eurostat)								<.001
								(< .001)
								1.000

Table 4- Continued

Within Country (ESS)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Domicile (size of place of residence, higher values are smaller places)		-.211 (.017) .810*	-.213 (.019) .808*	-.213 (.019) .808*	-.213 (.019) .808*	-.213 (.019) .808*	-.213 (.019) .808*	-.213 (.019) .808*
Minority		-.187 (.067) .830*	-.188 (.068) .829*	-.188 (.068) .829*	-.188 (.068) .829*	-.188 (.068) .829*	-.188 (.068) .829*	-.188 (.068) .829*
Female		-.046 (.033) .955*	-.047 (.034) .955*	-.047 (.034) .954*	-.047 (.034) .955*	-.047 (.034) .954*	-.047 (.034) .955*	-.047 (.034) .955*
Citizen		.180 (.065) 1.198*	.181 (.066) 1.198*	.181 (.066) 1.198*	.181 (.065) 1.198*	.181 (.066) 1.199*	.181 (.065) 1.199*	.181 (.066) 1.198*
Communist Bloc nation		-.086 (.153) .918	.124 (.128) 1.132	.147 (.122) 1.158	.127 (.128) 1.136	.126 (.127) 1.134	.121 (.127) 1.129	.118 (.125) 1.126
Age 41-60 (Dummy coded) against all other ages		-.101 (.037) .904*	-.102 (.038) .903*	-.102 (.038) .903*	-.102 (.038) .903*	-.102 (.038) .903*	-.102 (.038) .903*	-.102 (.038) .903*
Age 61-80 (Dummy coded) Against all other ages		-.609 (.054) .544*	-.614 (.055) .541*	-.614 (.055) .541*	-.614 (.055) .541*	-.614 (.055) .541*	-.614 (.055) .541*	-.614 (.055) .541*
Age 81-highest (Dummy coded) against all other ages		-.991 (.116) .371*	-.999 (.116) .368*	-.999 (.114) .368*	-.999 (.115) .368*	-.999 (.116) .368*	-.999 (.114) .368*	-.999 (.115) .368*
ICC	11.67%							

Logit coefficient (standard error) odds ratio.

*Significant at $p < .10$ level , one-tailed test

significant. One other institutional variable was statistically significant when added in with the decommodification index and the cultural measure of material success. In Model 4, the measure for education strength from the ESS, educational attainment level, was found to be statistically significant. For each level increase in educational attainment, there is a 13.9% decrease in crime victimization (b = -.150, p = .035). In sum, the results for the full set of available nations in 2004 provide little support for institutional anomie theory. The decommodification index fails to be statistically significant in any of the models. In addition, contrary to institutional anomie theory, over-emphasis on being rich and material success actually decreases the odds of crime victimization. The statistically significant institutional measure for ESS educational attainment provides the only statistically significant support for institutional anomie theory.

Findings for 2004 Common Sample of Nations

The results of the logistic regression for the common sample of nations in 2004 (N=16) are presented below in Table 5. Model 1 shows that 11.53% of the variation in crime victimization is between nations, satisfying the assumption for a two level model. In Model 2 of the analysis, seven level-1 variables are statistically significant. First, females were 7.5% less likely to be crime victims than males (b = -.775, p =.017). Being a citizen of a country actually increases the odds of crime victimization by 16.1% (b = .149, p = .042), running counter to the hypothesis. Not being a minority reduces the odds of crime victimization by 19.8% (b = -.208, p = .006). Living in smaller places significantly reduced the odds of crime victimization by 17.7% for every decrease in domicile size (b = -.195, p = <.001). The dummy coded variable for ages 41 to 60 was significant (b = -.162, p = <.001), as belonging to this age group reduced the odds of

crime victimization by 15.0%. The second dummy coded age group (ages 61 to 80) reduced the odds of crime victimization by 49.3% for belonging to this age group (b= -.680, p = <.001). Finally, the third dummy coded age group (ages 81 to highest) reduced the odds of crime victimization by 62.5% for belonging to this age group (b= -.981, p = <.001). The former Soviet Bloc nation dummy-coded variable was the only level-1 predictor not statistically significant.

The decommodification index is not statistically significant at level-2 in Model 3. The cultural measure of being rich and material success has a negative, significant impact on crime victimization (b = -.494, p = .007). For each unit increase in the importance of being rich and material success, there is a 39.0% reduction in the odds of crime victimization. The more emphasis on the importance of being rich and material success has an effect that decreases the odds of crime victimization in this model. Despite being significant this provides no support in favor of institutional anomie theory.

The remaining models in Table 5 show the cultural measure of being rich and material success remains statistically significant and of approximately the same magnitude when each of the other institutional variables is added to the level-2 model. The decommodification index was not significant in any of the models with level-2 predictors. Two other institutional variables were statistically significant when added in with the decommodification index and the cultural measure of material success. Model 4 shows that for every level increase in ESS educational attainment (b= -.102, p= .049), the odds of crime victimization dropped by 9.7%. In Model 5, the ESS family variable is a significant predictor of crime of variation in crime victimization rates across nations (b=

Table 5- Logistic Regression Results for Common Sample of Nations (N=16), 2004

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-1.263	-.410	2.727	3.154	2.054	2.693	2.748	2.524
	(.839)	(.144)	(1.079)	(1.172)	(1.143)	(1.121)	(1.184)	(1.599)
	1.263*	.664*	15.283*	23.422*	7.801*	14.774*	15.617*	12.482*
Across Nations								
Decommodification index (Eurostat)			.022	.025	.012	.021	.021	.021
			(.028)	(.028)	(.029)	(.028)	(.036)	(.026)
			1.022	1.026	1.012	1.021	1.021	1.022
(Mean) Cultural importance of being rich, having money and expensive things and being successful (high values=High importance, ESS)			-.494	-.516	-.426	-.486	-.496	-.466
			(.172)	(.175)	(.174)	(.184)	(.181)	(.187)
			.610*	.597*	.653*	.615*	.609*	.627*
Educational attainment (ESS)				-.102				
				(.057)				
				.903*				
Family (ESS) Divorced/Separated rate over all else					2.574			
					(1.484)			
					13.119*			
Religion (ESS) Religious adherence levels.						-.008		
						(.039)		
						.992		
Family (Eurostat) Marriage to Divorce ratio for 2002							-.003	
							(.039)	
							.997	
Spending on public education (Eurostat)								<.001
								(< .001)
								1.000

Table 5- Continued

Within Country (ESS)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Domicile (size of place of residence, higher values are smaller places)		-.195 (.023) .823*	-.198 (.023) .821*	-.198 (.023) .821*	-.198 (.023) .821*	-.198 (.023) .821*	-.198 (.023) .821*	-.198 (.023) .821*
Minority		-.208 (.082) .812*	-.214 (.085) .807*	-.215 (.084) .807*	-.214 (.084) .807*	-.215 (.085) .807*	-.215 (.085) .807*	-.215 (.085) .807*
Female		-.077 (.036) .925*	-.078 (.037) .925*	-.078 (.037) .925*	-.078 (.037) .925*	-.078 (.037) .925*	-.078 (.037) .925*	-.078 (.037) .925*
Citizen		.149 (.087) 1.161*	.154 (.085) 1.167*	.154 (.085) 1.167*	.153 (.085) 1.166*	.154 (.085) 1.166*	.154 (.085) 1.166*	.153 (.085) 1.166*
Communist Bloc nation		.088 (.152) 1.093	.400 (.096) 1.491*	.394 (.093) 1.484*	.472 (.111) 1.635*	.405 (.086) 1.499*	.402 (.084) 1.495*	.391 (.090) 1.478*
Age 41-60 (Dummy coded) against all other ages		-.162 (.039) .850*	-.164 (.040) .848*	-.164 (.040) .848*	-.164 (.040) .848*	-.164 (.040) .848*	-.164 (.040) .848*	-.164 (.040) .848*
Age 61-80 (Dummy coded) Against all other ages		-.680 (.052) .507*	-.687 (.052) .503*	-.687 (.052) .503*	-.687 (.052) .503*	-.687 (.052) .503*	-.687 (.052) .503*	-.687 (.052) .503*
Age 81-highest (Dummy coded) against all other ages		-.981 (.132) .375*	-.982 (.130) .374*	-.983 (.129) .374*	-.983 (.130) .374*	-.982 (.130) .374*	-.982 (.130) .374*	-.982 (.130) .375*
ICC	11.53%							

Logit coefficient (standard error) odds ratio.

*Significant at $p < .10$ level , one-tailed test

2.574, p= .054). For every one percent increase in divorces, the odds of crime victimization increase 1211.9 percent. This agrees with the research hypothesis.

The results for the common set of available nations in 2004 provide little support for institutional anomie theory. the decommodification index is not statistically significant in any of the models. Contrary to institutional anomie theory, over-emphasis on being rich and material success actually decreases the odds of crime victimization. The statistically significant institutional measure for ESS education strength and ESS education strength do provide some evidence that is consistent with institutional anomie theory.

Findings for 2006 Full Sample of Nations

Presented below in Table 6 are the results of the logistic regression for the full sample of nations available in 2006 (N=20). Model 1 shows that 12.88% of the variation in crime victimization is between nations. This provides satisfactory evidence that a second level model is needed. Five level-1 variables are statistically significant for the full sample of nations in 2006. Being a citizen of a country increases the odds of crime victimization by 27.2% (b = .240, p = .05). The direction of this relationship actually runs counter to the hypothesis. The level-1 predictor living in smaller places significantly reduced the odds of crime victimization by 17.3% for every decrease in domicile size (b = -.190, p = <.001). The dummy coded variable for ages 41 to 60 was significant (b = -.085, p = <.003), as belonging to this age group reduced the odds of crime victimization by 8.2%. The second dummy coded age group (ages 61 to 80) reduced the odds of crime victimization by 43.2% for belonging to this age group (b= -.565, p = <.001). Finally, the third dummy coded age group (ages 81 to highest) reduced the odds of crime

Table 6- Logistic Regression Results for Full Sample of Nations (N=20), 2006

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-1.406 (.079) .245*	-.958 (.133) .384*	2.020 (1.063) 7.536*	1.371 (1.119) 3.939	2.131 (1.116) 8.426*	1.978 (1.176) 7.230*	1.943 (1.038) 6.977*	2.980 (.830) 19.685*
Across Nations								
Decommodification index (Eurostat)			<.001 (.032) 1.000	-.045 (.030) .956*	.005 (.032) 1.006	-.002 (.034) .998	.032 (.032) 1.007	-.009 (.031) .991
(Mean) Cultural importance of being rich, having money and expensive things and being successful (high values=High importance, ESS)			-.469 (.167) .626*	-.493 (.183) .611*	-.476 (.174) .621*	-.456 (.206) .632*	-.472 (.167) .624*	-.590 (.128) .555*
Educational attainment (ESS)				.301 (.078) 1.352*				
Family (ESS) Divorced/Separated rate over all else					-2.120 (2.607) .120			
Religion (ESS) Religious adherence levels.						-.011 (.086) .989		
Family (Eurostat) Marriage to Divorce ratio for 2002							.037 (.046) 1.037	
Spending on public education (Eurostat)								<-.001 (<- .001) 1.000*

Table 6- continued

Within Country (ESS)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Domicile (size of place of residence, higher values are smaller places)		-.190 (.019) .823*	-.192 (.019) .826*	-.192 (.019) .825*	-.192 (.019) .826*	-.192 (.019) .826*	-.192 (.019) .825*	-.193 (.019) .825*
Minority		.103 (.115) 1.109	.104 (.116) 1.109	.104 (.116) 1.110	.105 (.115) 1.110	.104 (.116) 1.110	.104 (.116) 1.109	.103 (.118) 1.109
Female		-.003 (.037) .997	-.004 (.038) .996	-.004 (.038) .997	-.004 (.038) .996	-.004 (.038) .996	-.004 (.038) .996	-.004 (.038) .996
Citizen		.240 (.093) 1.272*	.243 (.092) 1.275*	.244 (.092) 1.276*	.244 (.092) 1.276*	.243 (.092) 1.276*	.243 (.092) 1.276*	.245 (.092) 1.278*
Communist Bloc nation		-.188 (.170) .828	.192 (.212) 1.212	-.484 (.172) .953	.253 (.227) 1.288	.180 (.247) 1.197	.232 (.223) 1.262	.084 (.202) 1.088
Age 41-60 (Dummy coded) against all other ages		-.085 (.030) .918*	-.086 (.031) .918*	-.086 (.031) .918*	-.086 (.031) .918*	-.086 (.031) .918*	-.086 (.031) .918*	-.086 (.031) .917*
Age 61-80 (Dummy coded) Against all other ages		-.565 (.069) .568*	-.569 (.070) .566*	-.570 (.070) .566*	-.570 (.070) .566*	-.569 (.070) .566*	-.569 (.070) .566*	-.571 (.070) .565*
Age 81-highest (Dummy coded) against all other ages		-1.028 (.152) .378*	-1.035 (.152) .355*	-1.036 (.154) .355*	-1.036 (.152) .355*	-1.035 (.152) .355*	-1.035 (.152) .355*	-1.038 (.153) .354*
ICC	12.88%							

Logit coefficient (standard error) odds ratio.

*Significant at $p < .10$ level , one-tailed test

victimization by 62.2% for belonging to this age group (b= -1.028, p = <.001). The variables former Soviet Bloc nation, female, and minority, all independent variables at level-1, were not statistically significant.

Model 3 shows that the decommodification index is not statistically significant at level-2. Also, contrary to institutional anomie theory, the cultural measure of material success has a negative, significant impact on crime victimization (b = -.469, p = .07). For each unit increase in the importance of being rich and material success, there is a 37.4% reduction in the odds of crime victimization. The more emphasis on the importance of being rich and material success has an effect that decreases the odds of crime victimization in this model.

The remaining models in Table 6 show that the cultural measure of material success remains statistically significant and of approximately the same magnitude when each of the other institutional variables is added to the level-2 model. The decommodification index was only significant and negative at level-2 in Model 4. Two other institutional variables were statistically significant when added in with the decommodification index and the cultural measure of being rich and material success. The ESS education measure was a statistically significant institutional measure (b= .301, p= .001). For every level increase in education attainment the odds of crime victimization increase by 35.2%, thus running contrary to institutional anomie theory. Model 8 includes the measure for Eurostat education spending per capita in 2006 (b= <.001, p= .025). For every dollar increase in education spending, there is a less than a .01% odds decrease in crime victimization.

The results for the full set of available nations in 2006 provide almost no support for institutional anomie theory. The odds of crime victimization are reduced when the polity is strong relative to the economy in only one of the models (Model 4). Contradictory to institutional anomie theory, over-emphasis on being rich and material success actually decreases the odds of crime victimization. The education measure from the European Social Survey provides contradictory support against institutional anomie theory. The statistically significant institutional measure for education spending from Eurostat does provide only other institutional support for the theory at level-2.

Findings for 2006 Common Sample of Nations

Shown in Table 7 are the results of the logistic regression for the common sample of nations in 2006 (N=16). Model 1 shows that 11.19% of the variation in crime victimization is between nations, giving evidence that a second level analysis is warranted. In Model 2, six level-1 variables are statistically significant for the common sample of nations in 2006. Being a citizen of a country significantly increases the odds of crime victimization by 28.9% (b = .254, p = .007). The direction of this relationship actually runs counter to the hypothesis. For every unit decrease in domicile size the odds of crime victimization by 17.5% for every decrease in domicile size (b = -.193, p = <.001). Being a member of a former soviet bloc nation significantly decreases the odds of crime victimization by 39.0% (b = -.494, p = <.001). The age group 41 to 60 was significant (b = -.083, p = <.007), as belonging to this age group reduced the odds of crime victimization by 7.9%. The second dummy coded age group (ages 61 to 80) reduced the odds of crime victimization by 45.2% for belonging to this age group (b= -.602, p = <.001). Finally, the third dummy coded age group (ages 81 to highest) reduced

the odds of crime victimization by 66.3% for belonging to this age group (b= -1.086, p = <.001). The variables female and minority were not statistically significant.

Models 3 through 8 present the results of the level-2 analyses that test institutional anomie theory, with the same procedures that were followed in the first data set. Contrary to institutional anomie theory, the cultural measure of being rich and material success in Model 3 has a negative, significant impact on crime victimization (b = -.318, p = .032). For each unit increase in the importance of being rich and material success, there is a 27.3% reduction in the odds of crime victimization. The more emphasis on the importance of being rich and material success has an effect that actually decreases the odds of crime victimization in this model. The decommodification index was not significant in Model 3.

The remaining models in Table 7 show that the cultural measure of material success remain statistically significant and of approximately the same magnitude when each of the other institutional variables is added to the level-2 model. The decommodification index was significant only in Model 7 at level-2, however its effect was positive rather than the negative effect expected by institutional anomie theory. Two other institutional variables were statistically significant when added in with the decommodification index and the cultural measure of being rich and material success. The ESS education measure was statistically significant in Model 4. For every level increase in education attainment the likelihood of crime victimization actually increased by 25.5% (b = .227, p = .001). Model 8 includes the statistically significant measure for education spending from Eurostat in 2006. For every increase in education spending the odds likelihood of crime victimization were reduced <.01% (b = <-.001, p = .04).

Table 7- Logistic Regression Results for Common Sample of Nations (N=16), 2006

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-1.376	-.834	1.161	.574	1.115	1.198	1.077	2.399
	(.083)	(.133)	(.972)	(1.128)	(.981)	(1.108)	(.920)	(.844)
	.253*	.434*	3.193	1.775	3.051	3.315	2.937	11.014*
Across Nations								
Decommodification index (Eurostat)			.022	<.001	.022	.025	.028	<.001
			(.024)	(.021)	(.025)	(.022)	(.019)	(.020)
			1.022	1.001	1.022	1.025	1.029*	1.000
(Mean) Cultural importance of being rich, having money and expensive things and being successful (high values=High importance, ESS)			-.318	-.325	-.319	-.328	-.317	-.484
			(.157)	(.171)	(.156)	(.200)	(.154)	(.123)
			.727*	.723*	.727*	.720*	.728*	.617*
Educational attainment (ESS)				.227				
				(.057)				
				1.255*				
Family (ESS) Divorced/Separated rate over all else					1.406			
					(3.196)			
					4.079			
Religion (ESS) Religious adherence levels.						.011		
						(.077)		
						1.011		
Family (Eurostat) Marriage to Divorce ratio for 2002							.031	
							(.047)	
							1.032	
Spending on public education (Eurostat)								<-.001
								(< .001)
								1.000*

Table 7- continued

Within Country (ESS)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Domicile (size of place of residence, higher values are smaller places)		-.193 (.021) .825*	-.194 (.021) .824*	-.194 (.021) .823*	-.194 (.021) .824*	-.194 (.021) .824*	-.194 (.021) .824*	-.195 (.021) .823*
Minority		.041 (.096) 1.041	.042 (.097) 1.043	.042 (.098) 1.043	.042 (.097) 1.043	.042 (.097) 1.043	.042 (.097) 1.043	.042 (.100) 1.043
Female		-.026 (.042) .974	-.026 (.042) .974	-.026 (.042) .974	-.026 (.042) .974	-.026 (.042) .974	-.026 (.042) .974	-.027 (.043) .974
Citizen		.254 (.103) 1.289*	.255 (.102) 1.291*	.256 (.103) 1.291*	.256 (.102) 1.291*	.255 (.102) 1.291*	.256 (.102) 1.291*	.258 (.103) 1.294*
Communist Bloc nation		-.494 (.086) .610*	-.209 (.137) .811*	-.306 (.134) .737*	-.295 (.228) .745	-.199 (.173) .920	-.179 (.154) .836	-.311 (.091) .733*
Age 41-60 (Dummy coded) against all other ages		-.083 (.033) .921*	-.083 (.034) .920*	-.084 (.034) .920*	-.083 (.033) .920*	-.083 (.034) .920*	-.083 (.033) .920*	-.084 (.034) .920*
Age 61-80 (Dummy coded) Against all other ages		-.602 (.071) .548*	-.606 (.071) .546*	-.606 (.072) .545*	-.606 (.071) .546*	-.605 (.071) .546*	-.606 (.071) .546*	-.608 (.072) .545*
Age 81-highest (Dummy coded) against all other ages		-1.086 (.168) .337*	-1.093 (.168) .335*	-1.094 (.169) .335*	-1.093 (.167) .335*	-1.093 (.168) .335*	-1.093 (.167) .335*	-1.096 (.171) .334*
ICC	11.19%							

Logit coefficient (standard error) odds ratio.

*Significant at $p < .10$ level , one-tailed test

The results for the common set of nations for 2006 provide almost no support for institutional anomie theory; most significant results ran contrary to the theory. The decommodification index was only significant in Model 7 but the direction of the effect is contrary to institutional anomie theory. Also going against institutional anomie theory, over-emphasis on being rich and material success actually decreases the odds of crime victimization. The education measure from the European Social Survey increases the odds of crime victimization which is not consistent with institutional anomie theory.

Findings for 2008 Full Sample of Nations

Represented below in Table 8 are the results of the logistic regression for the full sample of nations available in 2008 (N=22). Model 1 shows that 17.57% of the variation in crime victimization is between nations, thus showing the need for a multilevel analysis. In Model 2, five level-1 variables are statistically significant for the full sample of nations in 2008. The dummy variable communist nations was significant (b=-.481, p= .001). Respondents belonging to former communist countries are 38.2% less likely to be the victims of crimes. For every unit decrease domicile size the odds of crime victimization by 16.9% for every decrease in domicile size (b = -.185, p = <.001). Being a female reduced the odds of crime victimization by 6.2% (b= -.020, p = .013). The dummy coded age group ages 61 to 80 reduced the odds of crime victimization by 41.0% for belonging to this age group (b= -.528, p = <.001). Finally, the dummy coded age group ages 81 to highest reduced the odds of crime victimization by 61.9% for belonging to this age group (b= -.963, p = <.001). Citizen of a country, minority, and the dummy coded variable for ages 41 to 60 were not statistically significant.

Table 8- Logistic Regression Results for Full Sample of Nations (N=22), 2008

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-1.557	-.855	1.435	1.004	1.239	.918	1.421	1.362
	(.091)	(.150)	(.765)	(.851)	(.812)	(.836)	(.775)	(.719)
	.211*	.425*	4.199*	2.730	3.453*	2.503	4.140*	3.902*
Across Nations								
Decommodification index (Eurostat)			-.013	-.009	-.019	.003	-.013	-.016
			(.027)	(.028)	(.028)	(.032)	(.027)	(.029)
			.987	.991	.981	1.003	.987	.984
(Mean) Cultural importance of being rich, having money and expensive things and being successful (high values=High importance, ESS)			-.353	-.357	-.337	-.229	-.368	-.345
			(.124)	(.124)	(.125)	(.152)	(.113)	(.119)
			.703*	.699*	.714*	.795*	.692*	.708*
Educational attainment (ESS)				.163				
				(.069)				
				1.177*				
Family (ESS) Divorced/Separated rate over all else					2.679			
					(2.649)			
					14.577			
Religion (ESS) Religious adherence levels.						-.130		
						(.074)		
						.878*		
Family (Eurostat) Marriage to Divorce ratio for 2002							.045	
							(.071)	
							1.046	
Spending on public education (Eurostat)								<.001
								(< .001)
								1.000

Table 8- continued

Within Country (ESS)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Domicile (size of place of residence, higher values are smaller places)		-.185 (.024) .831*	-.186 (.024) .830*	-.187 (.024) .830*	-.187 (.024) .830*	-.187 (.024) .830*	-.186 (.024) .830*	-.186 (.024) .830*
Minority		.020 (.081) 1.020	.020 (.081) 1.020	.020 (.081) 1.020	.019 (.081) 1.020	.020 (.080) 1.020	.020 (.081) 1.020	.020 (.081) 1.020
Female		-.064 (.029) .938*	-.064 (.029) .938*	-.064 (.029) .938*	-.064 (.029) .938*	-.064 (.029) .938*	-.064 (.029) .938*	-.064 (.029) .938*
Citizen		.096 (.084) 1.100	.095 (.085) 1.100	.095 (.085) 1.100	.096 (.084) 1.100	.096 (.084) 1.100	.095 (.084) 1.100	.095 (.085) 1.100
Communist Bloc nation		-.481 (.145) .618*	-.108 (.209) .898	-.107 (.201) .899	-.107 (.200) .899	-.221 (.213) .801	-.089 (.213) .915	-.121 (.195) .886
Age 41-60 (Dummy coded) against all other ages		-.023 (.035) .977	-.023 (.035) .977	-.023 (.035) .977	-.023 (.035) .977	-.023 (.035) .977	-.023 (.035) .977	-.023 (.035) .977
Age 61-80 (Dummy coded) Against all other ages		-.528 (.078) .590*	-.532 (.078) .587*	-.533 (.079) .587*	-.532 (.078) .587*	-.533 (.078) .587*	-.532 (.078) .587*	-.532 (.078) .587*
Age 81-highest (Dummy coded) against all other ages		-.963 (.147) .381*	-.968 (.143) .380*	-.970 (.144) .380*	-.968 (.143) .380*	-.970 (.143) .379*	-.969 (.143) .380*	-.969 (.143) .380*
ICC	17.57%							

Logit coefficient (standard error) odds ratio.

*Significant at $p < .10$ level , one-tailed test

Models 3 through 8 present the results of the level-2 analyses that test institutional anomie theory, with the same procedures that were followed in the first data set. Model 3 shows that the decommodification index is not statistically significant at level-2. Also, contrary institutional anomie theory, the cultural measure of being rich and material success has a negative, significant impact on crime victimization (b = -.353, p = .06). For each unit increase in the importance of being rich and material success, there is a 29.7% reduction in the odds of crime victimization. The more emphasis on the importance of being rich and material success has an effect that decreases the odds of crime victimization in this model.

The remaining models in Table 8 show that the results found the cultural measure of being rich and material success remained statistically significant and of approximately the same magnitude when each of the other institutional variables is added to the level-2 model. The decommodification index was not significant in any of the models with level-2 predictors. Two other institutional variables were statistically significant when added in with the decommodification index and the cultural measure of being rich and material success. The ESS education measure shows that for every level increase in education attainment the odds of crime victimization increase by 17.7%, thus running contrary to institutional anomie theory (b = .163, p = .015). Model 6 includes the statistically significant measure for religiosity in 2008. For every increase in religious attendance the odds of crime victimization were reduced 12.2% (b = .130, p = .043). This finding is consistent with the research hypothesis.

The results for the full set of available nations in 2008 provide almost no support for institutional anomie theory. As with most of the other findings, the

decommodification index is statistically significant in none of the models. Contrary to institutional anomie theory, over-emphasis on being rich and material success actually decreases the odds of crime victimization. The statistically significant institutional measure for religious attendance from Eurostat does provide support for institutional anomie theory. However, the education measure from the European Social Survey provides contradictory evidence for institutional anomie theory.

Findings for 2008 Common Sample of Nations

Table 9 results of the logistic regression for the common sample of nations in 2008 (N=16). Model 1 shows that 13.60% of the variation in crime victimization is between nations, thus showing the need for a multilevel analysis. Six level-1 predictors are significant at in Model 2. Belonging to a former communist bloc nation decreases the odds of crime victimization by 46.5% (b= -.626, p= <.001). For every unit decrease in domicile size the odds of crime victimization by decrease 18.7% (b = -.207, p = <.001). Being a female reduced the odds of crime victimization by 4.7% (b= -.048, p = .025). Being a citizen of country increases the odds of crime victimization by 19.7% (b= .179, b= .018). The dummy coded age group ages 61 to 80 reduced the odds of crime victimization by 46.9% for belonging to this age group (b= -.634, p = <.001). Finally, the dummy coded age group ages 81 to highest reduced the odds of crime victimization by 68.3% for belonging to this age group (b= -1.148, p = <.001).The variables minority and the dummy coded age variable for ages 61 to 80 were not statistically significant.

Models 3 through 8 present the results of the level-2 analyses that test institutional anomie theory, with the same procedures that were followed in the first data set. Model 3 shows that the decommodification index is significant, but not in the hypothesized

Table 9. Logistic Regression Results for Common Sample of Nations (N=16), 2008

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	-1.443	-.725	2.048	1.706	1.966	1.795	1.882	1.780
	(.100)	(.084)	(1.020)	(1.131)	(1.040)	(1.192)	(.946)	(.968)
	.236*	.484*	7.754*	5.504*	9.701*	6.020*	6.564*	5.931*
Across Nations								
Decommodification index (Eurostat)			.030	.016	.032	.017	.038	.037
			(.018)	(.018)	(.018)	(.023)	(.018)	(.020)
			1.031*	1.016	1.033*	1.018	1.057*	1.037
Cultural importance of being rich, having money and expensive things (high values=High importance, ESS)			-.439	-.450	-.439	-.379	-.434	-.402
			(.160)	(.172)	(.160)	(.208)	(.148)	(.151)
			.645*	.638*	.645*	.685*	.648*	.669*
Educational attainment (ESS)				.150				
				(.066)				
				1.162*				
Family (ESS) Divorced/Separated rate over all else					2.272			
					(2.031)			
					9.701			
Religion (ESS) Religious adherence levels.						-.058		
						(.082)		
						.944		
Family (Eurostat) Marriage to Divorce ratio for 2002							.056	
							(.032)	
							1.057*	
Spending on public education (Eurostat)								<.001
								(< .001)
								1.000

Table 9- continued

Within Country (ESS)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Domicile (size of place of residence, higher values are smaller places)		-.207 (.022) .813*	-.208 (.022) .812*	-.209 (.022) .812*	-.209 (.022) .812*	-.208 (.022) .812*	-.208 (.022) .812*	-.208 (.022) .812*
Minority		-.021 (.086) .980	-.020 (.084) .980	-.021 (.084) .981	-.020 (.083) .980	-.020 (.084) .981	-.019 (.083) .981	-.020 (.084) .980
Female		-.048 (.025) .953*	-.048 (.025) .953*	-.048 (.026) .953*	-.049 (.025) .953*	-.048 (.025) .953*	-.048 (.025) .953*	-.049 (.025) .953*
Citizen		.179 (.086) 1.197*	.180 (.086) 1.197*	.180 (.086) 1.198*	.181 (.084) 1.198*	.180 (.085) 1.197*	.180 (.086) 1.197*	.180 (.086) 1.197*
Communist Bloc nation		-.626 (.091) .535*	-.140 (.158) .869	-.126 (.164) .882	-.193 (.193) .825	-.210 (.224) .811	-.111 (.159) .895	-.147 (.157) .864
Age 41-60 (Dummy coded) against all other ages		-.038 (.040) .963	-.038 (.040) .963	-.038 (.040) .963	-.038 (.040) .963	-.038 (.040) .963	-.038 (.040) .963	-.038 (.040) .963
Age 61-80 (Dummy coded) Against all other ages		-.634 (.077) .531*	-.639 (.077) .528*	-.639 (.077) .528*	-.639 (.077) .528*	-.639 (.077) .528*	-.640 (.077) .527*	-.640 (.077) .528*
Age 81-highest (Dummy coded) against all other ages		-.1.148 (.138) .317*	-.1.156 (.136) .315*	-.1.156 (.136) .315*	-.1.156 (.135) .315*	-.1.156 (.135) .315*	-.1.157 (.135) .315*	-.1.157 (.135) .315*
ICC	13.60%							

Logit coefficient (standard error) odds ratio.

*Significant at $p < .10$ level , one-tailed test

direction (b = .030, p = .060) A one unit increase in the index results in a 3.1 percent increase in the odds of crime victimization. statistically significant in models Also, contrary to institutional anomie theory, the cultural measure of being rich and material success has a negative, significant impact on crime victimization (b = -.439, p = .009). For each unit increase in the importance of being rich and material success, there is a 35.5% reduction in the odds of crime victimization. The more emphasis on the importance of being rich and material success has an effect that decreases the odds of crime victimization in this model.

The remaining models in Table 9 show that the results found for the cultural measure of material success remain statistically significant and of approximately the same magnitude when each of the other institutional variables is added to the level-2 model. The decommodification index was significant in models 5 and 7 with other level-2 predictors. This does not yield support for institutional anomie theory, as the relationship in a direction (positive) that is not supportive of the theory. One other institutional variable was statistically significant when added in with the decommodification index and the cultural measure of being rich and material success. Displayed in Model 4, the ESS education measure was a statistically significant. For every level increase in education attainment the odds of crime victimization increase by 16.2%, thus running contrary to institutional anomie theory (b = .150, p =.021).

In sum, the results from this study mostly fail to support the hypotheses derived from institutional anomie theory. In the final chapter I will summarize the results, offer some plausible explanations for why the results of this study fail to support institutional

anomie theory, discuss some of the limitations of the study, and suggest avenues for future investigation.

CHAPTER VI

DISCUSSION AND CONCLUSION

Summary and Implications of Results

Presented below in Table 10 is a summary of the results of this study. This includes both the data sets from the common sample of nations and the full sample of nations for all years. Each variable from each data set has either an "S" for significant or a "NS" for not significant. For every model that is significant there is either a "+" for a positive relationship or a "-" for a negative relationship.

The most consistent result found over time in this study is the high importance of materialistic values having a negative effect on crime victimization across nations. This goes directly against the research hypothesis that an emphasis on the importance of materialistic values should increase crime victimization. Previous tests of institutional anomie theory have by no means been consistent in their findings when testing the importance of materialistic values and rates of crime and other deviant behaviors. Presented in the literature review chapter are four examples of different findings when testing institutional anomie theory with the incorporation of the importance of materialistic values.

Jensen (2002) found that the United States, which has always had much higher crime rates than most every other advanced nations, had a very low ranking with regards to emphasis on material possessions as a good thing. This also reflects a negative relationship between crime rates and importance of materialistic values. However, the study by Cullen et al. (2004) found theoretical support for two of their cultural

Table 10. Summary of Findings for Common Set of Nations (N=16)[†] and Full Set of Nations Available for Each Year (N=19-23)[††]

Across Nations (Level 2)	**2002 N=16**	**2004 N=16**	**2006 N=16**	**2008 N=16**	**2002 N=19**	**2004 N=23**	**2006 N=23**	**2008 N=22**
Decommodification Index	-S(3-5)	NS	+S(7 only)	+S(3,5,7)	-S	NS	-S (4 only)	NS
Cultural Structure	-S	-S	-S	-S	-S	-S	-S	-S
Education (ESS)	-S	-S	+S	+S	NS	-S	+S	+S
Family (ESS)	NS	+S	NS	NS	NS	NS	NS	NS
Religion (ESS)	NS	NS	NS	NS	NS	NS	NS	-S
Family (Eurostat)	NS	NS	NS	+S	NS	NS	NS	NS
Education (Eurostat)	NS	NS	-S	NS	NS	NS	-S	NS
Within Nations (Level 1)								
Domicile	-S	-S	-S	-S	-S	-S	-S	-S
Minority	NS	-S	NS	NS	NS	-S	NS	NS
Female	-S	-S	NS	-S	-S	-S	NS	-S
Citizen	NS	+S	+S	+S	NS	+S	+S	NS
Communist Bloc	+S(4-6)	+S(3-8)	-S (2-4,8)	-S(2 only)	NS	NS	NS	-S (2 only)
Age 41-60	-S	-S	-S	NS	-S	-S	-S	NS
Age 61-80	-S	-S	-S	-S	-S	-S	-S	-S
Age 81+	-S	-S	-S	-S	-S	-S	-S	-S

[†]These nations are Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, United Kingdom, Hungary, Ireland, Netherlands, Norway, Poland, Portugal, Sweden, and Slovenia.

[††]These nations are 2002: Austria, Belgium, Czech Republic, Germany, Denmark, Spain, Finland, France, United Kingdom, Greece, Hungary, Ireland, Netherlands, Poland, Portugal, Sweden, Slovenia, Switzerland, and Norway.
2004: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Iceland, Norway, and Switzerland.
2006: Austria, Belgium, Bulgaria, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Norway, and Switzerland.
2008: Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom, Norway, and Switzerland.

hypotheses. They found that "the stronger the universalism values in a nation, the greater the willingness of its managers to justify ethically suspect behaviors" (2004:413-15). Cullen et al. also found that "the stronger the pecuniary materialism values in a nation, the greater the willingness of its managers to justify ethically suspect behaviors" (2004:413-15). Their study does attempt to explain cross-national differences by using multilevel modeling. The study does use unethical behavior as the outcome variable, which may explain the differences in results from the current study and what Jensen also found. In another test of institutional anomie theory, Stults and Baumer (2008) found an indirect positive relationship between homicide rates and strong commitment to monetary success paired with weak commitment to legitimate means. Muftic (2006) found inconclusive findings of the effects of the "American Dream" on the dependent variable, cheating behavior. Although their study only looks at one setting or subpopulation within the United States, the university, they bring up a concept that may be very relevant to this study. This is the idea that not every American buys into the concept of the "American Dream" and a culture that places materialistic values very high.

When taking into consideration the results of the current study, it would be hard to come to the conclusion that the importance of materialistic values in European countries has reached a point that was theorized by Messner and Rosenfeld. However, this does not eliminate the possibility that they could reach these levels in the future. The results for the full sample of nations show that the effect of materialistic values on crime victimization diminished over time from 49.2% in 2002 35.5% in 2008. The same downward trend is seen in the results for the common sample of nations with a 50.7% decrease in crime victimization seen in 2002, but only a 29.7% decrease in 2008. This

could very well be a sign that European countries are experiencing a change that is seeing more neoliberal values become precedent. This change could ultimately lead towards a relationship between materialistic values and crime victimization that is in the predicted theoretical direction.

One major limitation in the items used to measure the importance of materialism is that they do not cover every aspect of the "American Dream." The two items used were the only items available in the European Social Survey that could capture the importance of materialistic values. Other survey questions that could have helped strengthen the measure would be questions asking about the importance of achieving success or becoming rich on one's own. Another question that would help strengthen the item used in the study would be a something asking about how important achievement in the work place is in determining a person's worth. Adding these two measures to the items used in the present study could greatly increase the overall validity of the measure and thus would increase the confidence in the results. Another possible limitation is that materialist cultural values may explain changes in crime victimization within and between countries over time rather than between countries at specific points in time as was examined in the present study.

The decommodification index is one of the key variables originally used by Messner and Rosenfeld (1997) in testing institutional anomie theory. The research hypothesis is that higher decommodification scores would result in lower levels of crime victimization across nations. Tthis study failed to yield any conclusive results that would support the research hypothesis. In the common set of nations, the decommodification index was significant and negative as expected in the year 2002. Following 2002, the next

three years examined yielded results that do not provide a clear trend with significant results often in the opposite direction of what was originally hypothesized.

Messner and Rosenfeld (1997) found a significant relationship in the hypothesized direction between decommodification and homicide. Although, this study conceptualized decommodification the same way as Messner and Rosenfeld, the sample, dependent variable, method of analyzing the data, and years examined were much different. This is likely the reason why there is a difference in the results. Savolaninen (2000) used a very similar sample and method as Messner and Rosenfeld (1997) and also had results that were very supportive of the research hypothesis. Jensen (2002) found no significant results between decommodification and crime rates. Freichs, Munch, and Monika (2008) also had results that did not support the research hypothesis and had results that ran contrary to the hypothesis as was found in the present study.

For the European Social Survey measure for familial strength, it was hypothesized that a higher ratio of divorce and separated would result in higher rates of crime victimization. Overall, this variable provided little support for the research hypothesis. The only supportive finding was for the common set of nations in 2004 where there was a positive significant relationship. The Eurostat measure for familial strength also does not provide support for the research hypothesis. It was hypothesized that a higher ratio of marriage to divorce would result in lower levels of crime victimization. The only significant effect of this variable was for the common set of nations in 2008, however, the effect was positive rather than negative.

Other studies such as Chamlin and Cochran (1995), Maume and Lee (2003), and Kim and Pridemore (2005a) are good examples of studies that had significant results

between strength of the family and the dependent variable. In each of these studies the divorce rate was used much like in the Eurostat measure used in the current study. Throughout all of the studies, most had familial measures that had significant results in some of their models. However, this current study varies in methods from most models, as well as the dependent variable. Almost all of the studies use the individual as the unit of analysis for measure family, while the nation is the unit of analysis in this study.

The ESS educational attainment measure in this study was hypothesized to have a negative effect on levels of crime victimization. For the common sample of nations, educational attainment rates are in the hypothesized direction in 2002 and 2004. After 2004 the relationship flips to the opposite direction in 2006 and 2008. Thus, a clear direction or pattern was not found that would not be supportive of institutional anomie theory.

The Eurostat measure of education spending was hypothesized to have a negative relationship with crime victimization rates. For both the common set of nations and the full set of nations, the expected statistically significant negative relationship only occurs in 2006, while the relationship is nonsignificant in all other years. Overall, the results do not follow a consistent pattern that would be supportive of institutional anomie theory. A better potential measure that could have been used is education spending as a percentage of the GDP.

In the literature, the impact of education on crime/deviance was not tested until Cullen et. al (2004), where they derived an educational attainment measure similar to the one in this study. Schoepfer and Piquero (2006) found that their measure of education was significant. Kim and Pridemore (2006b) found no significant results when testing an

interaction term of education and socioeconomic change on the dependent variables armed robbery and robbery rates. Baumer and Gustafson (2007) found no statistical support for their measure of education on the dependent variable. Like many of the other measures used, this shows that results vary greatly depending on the way education was measured and what was used as a dependent variable.

The final institutional measure that was tested in this study was the European Social Survey item on religious attendance/involvement. A negative relationship was expected between this measure of religion and crime victimization. However, the only negative statistically significant effect for this variable was found in 2008 for the full set of countries, while the relationship was nonsignifiant in all other cases. The main reason for the null results could be the use of the median instead of the mean as the measure of central tendency. The median was used as the measure of religious attendance was based on a 7-point Likert scale. This created a situation where most scores fell into a middle score such as a 3 or 4, hence there was little variability in the measure.

Previous studies such as Chamlin and Cochran (1995) found that higher levels of church membership had a negative effect on the criminogenic effects of poverty on economic crime. Jensen (2002) also found that his measure of religion was also a significant negative predictor of crime rates. Baumer and Gustafson (2007) did not find any support between religious adherence rates and the dependent variable. Religion is a measure that has seldom been used in past studies.

Limitations

Overall, level-2 predictors provide little evidence that institutional anomie explains variation in rates of crime victimization across nations. The first major limitation

of this study is the sample size at level-2. The largest sample size for any of the data sets is small for a two level hierarchical linear modeling project (N= 23), while the common set of nations is much smaller (N= 16). Generally, the higher the sample size, the higher the statistical power a significance test has. With such small sample sizes, one cannot completely be certain of the veracity of the results in this study. The small sample sizes alone may account for the lack of statistically significant findings in this study. Although data for more countries was initially available from the ESS, missing data for entire questions for certain countries meant that they had to be removed in the multilevel analysis due to the list-wise deletion function.

A limitation in past research was the lack of use of survey research in previous tests of institutional anomie theory. This study attempted to fill this gap in previous research by using survey data to construct institutional measures. However, the researcher was limited to the survey questions available in the ESS to capture the strength of social institutions. Due to a lack of previous use of survey data, it is difficult to tell if the items used in the current study are valid measures of the strength of institutions and their effect on the economy.

Future Research and Conclusion

This study set out to test institutional anomie theory using crime victimization rates of assault or burglary over the past 5 years as a dependent variable. Because quantitative research on institutional anomie theory has traditionally used measures such as murder, theft, or burglary rates calculated over specific geographic aggregates, this study provides new evidence on whether or not less established measures can be used as the dependent variable. Although most of the findings were not statistically significant at

level-2, it would be interesting to see if future research would have different results if a larger sample of countries was used.

Beyond just a larger sample size, future research could take advantage of more rounds of data from the European Social Survey. The European Social Survey will be releasing their 2010 round in the near future. Other techniques such as time-series analysis should also be considered. This type of technique allows a researcher to actually test whether institutional strength measures can account for changes over time in crime victimization within countries.

Besides just the dependent variable, all but three of the variables from both levels of analysis came from survey data. The use of survey data for constructing measures of social structure is an option that has not be used in most studies. Taking advantage of other survey sources could allow for different options for measures of institutions. Tied in with this, I believe it is critical that future studies on institutional anomie theory should take the cultural aspect of the theory into consideration. This is a critical part of institutional anomie theory that is has not been given much consideration in past studies, possibly due to the difficultly in creating measures that have high validity. I believe surveys are an important vehicle for creating measures that tap into the cultural importance of money, success, possessions, and individualism. Surveys allow a researcher to directly ask how important these are to individuals within a given nation or other aggregated unit of analysis.

In the end, the lack of support found in this study for key hypotheses of institutional anomie theory might just be because it is a theory, like Merton's anomie

theory before it, that was developed based on U.S. historical experience. As Jock Young (2011:80) reminds us, the United States

> ... is extremely atypical in terms of the majority of advanced industrial countries ...[in] its lack of social democratic politics, its meager welfare state, its extremely high commitment to the American Dream version of meritocracy, its high emphasis on formal legal equality as an ideal, its remarkable ethnic pluralism, the extent and range of organized crime, the extent of ghettoization, etc. ... All of these factors are likely to have a profound effect on the theory generated in such a society... There is no doubt that the United States has, in the twentieth century, produced many important developments in theoretical criminology. It is to argue, however, that these theories cannot be merely transplanted to, say, a European context; they have to be transposed *carefully.*

Thus, simply testing institutional anomie theory without modification in the European context may be responsible for the weak-to-nil findings in the present study. This issue should be addressed in future studies that attempt testing the theory using countries that differ substantially from the United States.

REFERENCES

Allison, Paul D. 2000. "Multiple Imputation for Missing Data: A Cautionary Tale." *Sociological Methods and Research* 28:301-9.

Batton, Candice and Gary Jensen. 2002. "Decommodification and Homicide Rates in the 20th-Century United States." *Homicide Studies* 6 :6-26.

Baumer, Eric P. 2007. "Untangling Research Puzzles in Merton's Multilevel Anomie Theory." *Theoretical Criminology* 11:63-93.

Baumer, Eric P. and Reagan Gustafson. 2007. "Social Organization and Instrumental Crime: Assessing the Empirical Validity of Classic and Contemporary Anomie Theories." *Criminology* 42:729-42.

Bernburg, Jon G. 2002. "Anomie, Social Change and Crime: A Theoretical Examination of Institutional-Anomie Theory." *British Journal of Criminology* 42:729-42.

Bjerregaard, Beth and John 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 Criminology Review* 9:31-48.

Bjerregaard, Beth and John K. Cochran. 2008. "Want Amid Plenty: Developing and Testing a Cross-National Measure of Anomie." *International Journal of Conflict and Violence* 2:183-4.

Cao, Liqun. 2004. "Is American Soicety More Anomic? A Test of Merton's Theory with Cross-National Data." *Internation Journal of Comparative and Applied Criminal Justice* 28:17-5.

Centre for Comparative Social Surveys. 2011. Retrieved May 24, 2011 (http://www.europeansocialsurvey.org/).

------.2011. "European Social Survey." Retrieved June 20, 2011 (http://www.europeansocialsurvey.org/).

Chamlin, Mitchell B. and John K. Cochran. 1995. "Assessing Messner and Rosenfeld's Institutional Anomie Theory: A Partial Test." *Criminology* 33:411-29.

------.2007. "An Evaluation of the Assumptions that Underlie Institutional Anomie Theory." *Theoretical Criminology* 11:39-61.

Cullen, John, K. Parboteeah, and Martin Hoegl. 2004. "Cross-National Differences in Managers' Willingness to Justify Ethically Suspect Behavior: A Test of Institutional Anomie Theory." *Academy of Management Journal* 47:411-21.

European Commission. 2011. "Eurostat: Statistics." Retrieved June 20, 2011 (http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/themes).

Fox, J. A. and J. Levine. 2001. *The Will to Kill: Making Sense of Senseless Murder.* Boston, MA: Allyn and Bacon.

Freichs, Sabine, Richard Munch, and Sander Monika. 2008. "Anomic Crime in Post-Welfarist Societies: Cult of the Individual, Integration Patterns and Delinquency." *International Journal of Conflict and Violence* 2:195-20.

Hårfagres, Harold. 2011. Bergen, Norway: Norsk samfunnsvitenskapelig datatjeneste. Retrieved May 24, 2001 (http://www.nsd.uib.no/macrodataguide/about.html).

Hårfagresgt, Harold. 2002. "Appendix A3: Variables and Questions, ESS1-2002." *European Social Survey*:1-97.

------.2002. "ESS1 - 2002 Documentation Report." 2011:1-175.

------.2004. "ESS2 - 2004 Documentation Report." *European Social Survey*:1-218.

------.2006. "ESS3 - 2006 Documentation Report." *European Social Survey*:1-217.

------.2008. "ESS4 - 2008 Documentation Report." *European Social Survey*:1-301.

------.2011. "ESS Data Archive.", Retrieved May 24, 2011 (http://www.europeansocialsurvey.org/).

Hofstede, G. 2001. *Culture's Consquences.* Thousand Oaks, CA: Sage.

Hox, Joop J. 2010. *Multilevel Analysis: Techniques and Applications.* New York, NY: Routledge.

Inglehart, R. 1997. *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies.* Princeton, NJ: Princeton University Press.

Jensen, Gary. 2002. "Institutional Anomie and Societal Variations in Crime: A Critical Appraisal." *International Journal of Sociology and Social Policy* 22:45-74.

Johannson, Hakan. 2001. "Activation Polices in the Nordic Countries: Social Democratic Universalism Under Pressure." *Journal of European Area Studies* 9:63-77.

Karstedt, Susanne and Stephen Farrall. 2006. "The Moral Economy of Everyday: Crime Markets, Consumers and Citizens." *British Journal of Criminology* 46:1011-36.

Kim, Sang-Weon and William A. Pridemore. 2005. "Poverty, Socioeconomic Change, Institutional Anomie, and Homicide." *Social Science Quarterly* 86:1377-98.

------.2005. "Social Change, Institutional Anomie and Serious Property Crime in Transitional Russia." *British Journal of Criminology* 45:81-97.

Korpi, Walter. 2003. "Welfare-State Regress in Western Europe: Politics, Institutions, Globalization, and Europeanization." *Annual Review of Sociology* 29:589-609.

Lester, D. 1996. *Patterns in Suicide and Homicide in the World.* New York: Nova Science Publishers, Inc.

Maume, Michael O. and Matthew R. Lee. 2003. "Social Institutions and Violence: A Sub-National Test of Institutional Anomie Theory." *Criminology* 41:1137-72.

Merton, Robert K. 1938. "Social Structure and Anomie." *American Sociological Review* 3:672-82.

------.1957. *Social Theory and Social Structure.* New York: The Free Press.

Messner, Steven, Helmut Thome, and Richard Rosenfeld. 2008. "Institutions, Anomie, and Violent Crime: Clarifying and Elaborating Institutional-Anomie Theory." *International Journal of Conflict and Violence* 2:163-81.

Messner, Steven F. and Richard Rosenfeld. 1994. *Crime and the American Dream.* Belmont, CA: Wadsworth.

------.1997. *Crime and the American Dream.* Belmont, CA: Wadsworth.

------.2001. *Crime and the American Dream.* Belmont, CA: Wadsworth.

------.2007. *Crime and the American Dream.* Belmont, CA: Wadsworth.

Messner, Steven F. and Richard Rosenfeld. 1997. "Political Restraint of the Market and Levels of Criminal Homicide: A Cross-National Application of Institutional-Anomie Theory." *Social Forces* 75:1393-416.

Messner, Steven F., Helmut Thome, and Richard Rosenfeld. 2008. "Institutions, Anomie, and Violent Crime: Clarifying and Elaborating Institutional-Anomie Theory." 2:163-81.

Messner, Steven and Richard Rosenfeld. 2006. "The Present and Future of Institutional-Anomie Theory." Pp. 127-48 in *Taking Stock: The Status of Criminological Theory,* vol. 15, edited by Francis T. Cullen. Piscataway, NY: Transaction Books.

Muftic, Lisa R. 2006. "Advancing Institutional Anomie Theory: A Microlevel Examination Connecting Culture, Institutions, and Deviance." *International Journal of Offender Therapy and Comparative Criminology* 50:630-53.

Oorschot, Wim V. 2002. "Miracle Or Nightmare?: A Critical Review of Dutch Activation Policies and their Outcomes." *Journal of Social Policy* 31:399-420.

------.2006. "The Dutch Welfare State: Recent Trends and Challenges in Historical Perspective." *European Journal of Social Security* 8:57-76.

Savolainen, Jukka. 2000. "Inequality, Welfare State, and Homicide: Further Support for the Institutional Anomie Theory." *Criminology* 38:1021-42.

Schoepfer, Andrea and Nicole L. Piquero. 2006. "Exploring White-Collar Crime and the American Dream: A Partial Test of Institutional Anomie Theory." *Journal of Criminal Justice* 34:227-35.

Stults, Brian J. and, Eric P. Baumer. 2008. "Assessing the Relevance of Anomie Theory for Explaining Spatial Variation in Lethal Criminal Violence: An Aggregate-Level Analysis of Homicide within the United States." *International Journal of Conflict and Violence* 2:215-47.

Trompenaars, F. and C. Hampden-Turner. 1998. *Riding the Waves of Culture: Understanding Cultural Diversity in Global Business.* New York: McGraw-Hill.

Young, Jock. 2011. *The Criminological Imagination.* Malden, MA: Polity Press.

[i] Common Sample Nation (N=16) Include: Belgium, Switzerland, Germany, Denmark, Spain, Finland, France, United Kingdom, Hungary, Ireland, Netherlands, Norway, Poland, Portugal, Sweden, and Slovenia.

[ii] All of the variables had acceptable variance inflation factors (i.e., VIFs below 2.5), tolerances (above .40) and eigenvalues (no values were close to .000). The condition indices were above 30, but under 40. See Allison (1999:141).