Cultural and Institutional Adaptation and Change in Europe: A Test of Institutional Anomie Theory Using Time Series Modelling of Homicide Data

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Abstract

This study examined whether geographic differences in intentional homicide rates in Europe were a function of societies that exhibit Anomic cultural tendencies and an institutional imbalance, as guided by Institutional Anomie Theory. This research is temporally sensitive, taking into account these differences over a fifteen-year time period. Additionally, separate operations of the theory within developed and transitioning countries were tested, and various cultural-institutional configurations were uncovered that led to increases or decreases in homicide rates. While still restricted by a lack of guidance from Messner and Rosenfeld and inconsistency in past research on how to operationalize key concepts of IAT, this study significantly contributes to the literature by assessing core theoretical questions of the theory while employing appropriate measurement strategies.

INTRODUCTION

Institutional Anomie Theory (IAT) currently stands as the most detailed and exhaustive macro-level criminological theory that unites the multifaceted sociological constructs of Anomie and social organization with explanations of national and international levels of serious crime rates. Two key elements of societies and social organization – culture and social institutions – are identified by IAT, and remain the two central tenets in the explanation of rates of serious crime. That is, when Anomic cultural pressures to succeed interact with an institutional balance of power dominated by the economy, the result will likely be high rates of crime.

The theory has been repeatedly tested in comparative settings since 1995 to largely explain homicide and theft rates in developed countries (e.g., Batton and Jensen, 2002; Baumer and Gustafson, 2007; Bjerregaard and Cochran, 2008a; 2008b; Chamlin and Cochran, 1995; Cochran and Bjerregaard, 2011; Messner and Rosenfeld, 1997a; Piquero and Piquero, 1998; Schoepfer and Piquero 2006; Stucky, 2003). However, the majority of these studies struggled to empirically define and conceptualize "culture." This trend has resulted from not only a general lack of consensus among criminologists, but also from lack of direction from Messner and Rosenfeld (1994) themselves regarding how to measure such a complex latent construct (Baumer and Gustafson, 2007; Bernburg, 2002; Chamlin and Cochran, 1995; Chamlin and Cochran, 2007; Jensen, 2002; Messner, 2003). Moreover, Messner and Rosenfeld designed their theory to be interactive; elements of culture and social institutions interact and influence one another in directions predicted by Messner and Rosenfeld (1994) to produce rates of serious crime. Unfortunately, the majority of research has overlooked these points, which has resulted in an abundance of studies looking more simply at the relationship (and measurement) between the

four social institutions outlined by IAT, in which a dominant economic institution is often found to be a key predictive factor of crime. A handful of studies, such as Baumer and Gustafson's (2007) empirical test of the theory, have moved the field forward by developing and including cultural measures, but also by importantly testing underlying causal (and interactive) properties of IAT.[2]

This study makes significant contributions to the field by not only offering additional measures of cultural and social institutional elements and extending the work of Baumer and Gustafson (2007), but by also testing the core questions of the theory in a comparative setting. This will be accomplished by operationalizing elements of Anomic culture and social institutions, and by testing the interaction of both against homicide data from eighteen countries in Europe between 1995 and 2009.

MODELING IAT

Steven Messner and Richard Rosenfeld (1994; 1997b; 2001; 2006; 2012) synthesized theoretical concepts of social organization and Anomie that had been developed through Durkheim, Merton, and other noted scholars[3] in their macro-level criminological theory, Institutional Anomie. This theory is in some ways an important extension of Merton's macro-level Anomie Theory that equally emphasizes both culture and social institutions in relation to crime at the comparative national and international levels. Messner and Rosenfeld drew their assumptions of human nature and underlying concepts of culture, social institutions and social organization from the extensive swath of key theoretical and historical developments by

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[2] See also Cullen et al. (2004), and Gross and Haussman (2011) for cultural developments, and Piquero and Piquero (1998) for interactional testing of institutional variables.
[3] For instance, Talcott Parsons and Karl Polyani (Messner and Rosenfeld, 2009).

Durkheim, Merton, Parsons, and other comparative scholars in order to build the foundation for Institutional Anomie Theory.

Figure 1 below illustrates the relationship of cultural and institutional elements as they pertain to IAT. Here, Messner and Rosenfeld (2012) maintained continuity with Merton's Anomie Theory by implying that Anomie is embedded within culture, and may even be a product of culture (Orru, 1987; Thio, 1975). Also in line with Merton (1938; 1968), Figure 1 illustrates that crime and deviance occur when society's central values and goal orientations (i.e., culture) are malintegrated with institutionalized means for attaining these goals, and the prevailing cultural structure deemphasizes legitimate means for attaining these highly valued goals.

[INSERT FIGURE 1 ABOUT HERE]

ANOMIC CULTURE

IAT considers the element of culture to be much embedded in Merton's concept of the American Dream. For Messner and Rosenfeld (1994), the American Dream embodies "a commitment to the goal of material success, to be pursued by everyone in society, under conditions of open, individual competition" (69), and is composed of four values that serve to anchor this cultural concept: achievement, individualism, universalism, and a fetishism of money. These four values of (American) culture (illustrated in Figure 1 above) combine together to form the founding principles and "distinctive cultural ethos" of the American Dream (Messner and Rosenfeld, 1994: 71). In turn, the cultural environment that is created based on these values and ethos becomes more conducive to criminal behavior as the pressure to succeed in society increases. When these cultural pressures to succeed occur with a corresponding lack of legitimate

means to attain the culturally prescribed goals, Messner and Rosenfeld (2012) conclude that the society is Anomic (88).[4]

As important as these cultural values and related processes are to the theory, researchers have struggled to operationalize these theoretical aspects in empirical tests. Baumer and Gustafson (2007) note that a complete, comprehensive test of IAT would require "direct indicators of global cultural features" (627), as well as "data on the extent to which the populations of the social collectives under study have assimilated cultural values" (628). This has been considered "well beyond the reach of existing sources" (Baumer and Gustafson, 2007: 628), but has not deterred a handful of criminologists from trying to indirectly measure these cultural elements.

For instance, Cullen et al. (2004) employed a national cultural model developed by Trompenaars and Hampden-Turner (1998) that identified three of the four cultural elements in IAT: achievement, universalism, and individualism. Both individual-level and aggregate-level data from the World Values Survey (WVS) for 28 nations were used to represent these elements. Cao (2004) and Jensen (2002) also used data from the WVS to evaluate IAT's claims that The United States experienced abnormally strong cultural pressures to succeed. However, critiques of using individual-level data from secondary sources such as the WVS expose weaknesses in these studies, citing the conclusions are "highly sensitive to the specific items used to measure the core

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[4] This presents a potential break from Durkheim, however. Messner and Rosenfeld (1994; 1997; 2001; 2006; 2009; 2012) are not clear on an explicit definition of "Anomie," but do reference Durkheim's notion of Anomie as a state of "weakened norms," and commonly reference the point that American society as defined by the American Dream is Anomic. However, their model (see Figure 1) illustrates that a culture is considered highly anomic when there is a strong desire to achieve, be individualistic, hold universal goals, and seek monetary rewards. This would represent a set of cultural norms that are clearly defined and represent cultural imperatives that members of society are driven towards, thus conflicting with Durkheim's conceptualization of "normlessness." It might be more useful to differentiate between comparative reference groups and normative reference groups, as Passas (1997) suggested, but apply them to the national level to better understand cultural Anomie. Thus, American (anomic) culture becomes the comparative group for other nations, but within its own reference group the cultural aspects are normative.

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concepts" (Baumer and Gustafson, 2007: 630; Messner and Rosenfeld, 2006; Zhau and Cao, 2010). Indeed, these studies utilized different items at different points in time to represent these cultural latent constructs; in other words, indirect measures of culture have been inconsistently operationalized from within the WVS.

Baumer and Gustafson (2007) used similar methods to operationalize these cultural elements by employing aggregate-level individual responses from the General Social Survey (GSS) for the United States, but improved on past efforts to test the theory using secondary survey data by ensuring the aggregate responses were geographically coded (e.g., metropolitan counties, non-metropolitan counties). This ensured that the aggregated individual responses to the survey are representative of the geographic areas from which they were selected, and provides the researchers with a means of capturing levels of assimilation to cultural values based on place. This empirical test of IAT is superior in many ways to past efforts by more fully considering the main causal processes implied by Messner and Rosenfeld; however, the data used to test the theory were drawn from a few select years in the 1970s because this was the only period in which the relevant GSS measures were available (Baumer and Gustafson, 2007). While using forty year-old data does not negatively effect testing the basic operation of IAT, the data cannot provide insight into current cultural or institutional causal processes at work within the United States.

Gross and Haussmann (2011) provide one of the most recent attempts at operationalizing cultural elements in their empirical test of IAT's operation at the city level in Germany and four Eastern European countries. More specifically, this study examined societal transformation surrounding youth attitudes toward violence in these cities using data from the European Social

Survey (ESS) and the International Labor Organization (ILO). Using less sophisticated modeling techniques than Baumer and Gustafson (2007), Gross and Haussmann (2011) examine individual-level responses to items measuring value orientations (i.e., success orientation, money fetishism, and helping others), testing to determine whether the responses were significantly different from city to city.

Aside from these studies, other scholars have struggled to consider cultural elements in their empirical models. Indeed, many tests of IAT have been conducted (e.g., Batton and Jensen, 2002; Bjerregaard and Cochran, 2008a; 2008b; Cochran and Bjerregaard, 2011; Maume and Lee, 2003; Messner and Rosenfeld, 1997a; Piquero and Piquero, 1998; Schoepfer and Piquero, 2006; Stucky, 2003). However, these studies either omitted any measurement or consideration of an Anomic culture, or assumed that the Anomic culture was held constant. In the case of subnational studies (considering only counties, states, or regions in the United States), which include Maume and Lee (2003), Piquero and Piquero (1998), Stucky (2003), Batton and Jensen (2002), and Schoepfer and Piquero (2006), it could be argued[5] that all counties (states, regions) in the U.S. experience the same Anomic cultural influences (achievement, individualism, universalism, pecuniary materialism) of the American Dream. Yet, this remains a major assumption of all studies that do not include any measure of culture (i.e., that culture is held constant). This becomes a serious complication in cross-national studies like Messner and Rosenfeld's (1997a) own test of their theory, as it cannot be assumed that culture is held constant across thirty or forty nations.

SOCIAL INSTITUTIONS

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[5] Even though Baumer and Gustafson (2007) found this to not be the case.

"Social institutions are the building blocks of whole societies… Institutions can be defined as 'relatively stable sets of norms and values, statuses and roles, and groups and organizations' that regulate human conduct to meet the basic needs of a society" (Messner and Rosenfeld, 1994: 72; see also Kroeber and Parsons, 1958; Parsons, 1951). Messner and Rosenfeld (2012) explained that institutions are what allow a society to endure over time, and these institutions are necessary for the individual and collective survival of the society. It is the levels or configurations of institutional dependence that have "profound implications for the motivation and control of human social behavior, including criminal behavior" (Messner and Rosenfeld, 2012: 75).

Messner and Rosenfeld (1994) identified four key institutions that develop differentially based on these social needs (again, drawing from Parsonian elements of the Action System): the economy, the polity, family, and education.[6] For Messner and Rosenfeld (1994), dominance of the economic institution in societies is a key indicator of potential "widespread Anomie, weak social controls, and ultimately, high levels of crime" (68), and can be identified through the devaluation of non-economic institutional functions and roles, the accommodation to economic requirements by other institutions, and the penetration of economic norms into other institutional domains. That is, societies characterized by economic institutional dominance may find its members working late, consequentially missing their child's soccer practice (Messner and Rosenfeld, 1994). In countries with a different configuration of social needs and cultural goals, non-economic institutions may become more developed than the economic institution (Messner

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[6] Messner and Rosenfeld (2012) are careful to note that the four institutions central to IAT do not "exhaust the institutional structure of modern societies, nor are they the only institutions with relevance to crime" (75).). In fact, the authors offer religion and mass communications as examples of other societal institutions that have been the focus for some criminologists. However, for IAT, the economy, the polity, the family, and education are the only four institutions relevant to having an "'institutional understanding' of crime" (Messner and Rosenfeld, 2012: 76).

and Rosenfeld, 2006). IAT theorizes that if non-economic institutions were valued equally or more so than the economy in a given society, serious crime rates would potentially decrease because the cultural values of the society would produce more cohesion and social control (thus returning to the Durkheimian notion of Anomie).

While modeling an institutional balance of power has proven challenging (with arguably Baumer and Gustafson (2007) most closely modeling any sort of "balance" by testing interactions), operationalizations of the economy, polity, educational, and political institutions have been fairly well established and consistent in the literature. Economic dominance has most often been measured by national poverty rates using the Gini coefficient (e.g., Bjerregaard and Cochran, 2008a; Chamlin and Cochran, 1995; Cochran and Bjerregaard, 2011; Zhau and Cao, 2010) and/or GDP (e.g., Bjerregaard and Cochran, 2008a). Familial strength has been the most consistently operationalized institution, measured as either the divorce rate or the ratio of divorces-to-marriages (e.g., Chamlin and Cochran, 1995; Cullen, Parboteeah and Hoegl, 2004; Maume and Lee, 2003). The polity has most commonly been measured as percentage of voter-turnout during major elections (e.g., Chamlin and Cochran, 1995; Jackman, 1987; Maume and Lee, 2003). Finally, the educational institution has most commonly been measured as either the average educational expenditures or level of educational attainment (e.g., Cullen, Parboteeah and Hoegl, 2004; Maume and Lee, 2003). In some cases, studies also included measures of decommodification (Messner and Rosenfeld, 1997c), welfare (e.g., Cullen, Parboteeah, and Hoegl, 2004; Jensen, 2002; Maume and Lee, 2003), and religiosity (Chamlin and Cochran, 1995; Maume and Lee, 2003).

DATA AND METHODOLOGY

The current study extends the work of Baumer and Gustafson (2007) by not only offering additional measurements of cultural pressures to succeed and lack of legitimate opportunities to achieve success in comparative settings, but also by examining the differential influence of cultural and social institutional indicators over time. A quantitative research design was applied in this study and completed in two stages. First, IAT was tested in the European region as a whole using the new independent and dependent measures described in detail below. Second, to conduct a comparative test of the theory, the eighteen countries were broken down into two groups: developed and transitioning countries. The developed country-group consisted of Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom. The transitioning country-group consisted of the Czech Republic, Hungary, Poland, Slovakia, and Slovenia.

The time period used to capture any changes over time to Anomic cultural and/or social institutions was 1995 to 2009. The year 1995 was chosen to begin the time series in order to capture changes and restructuring of the elements of social organization due to the collapse of the U.S.S.R. in 1989 without risking contaminated or otherwise unreliable data from the years directly following the collapse of the Soviet Union (Krajewski, 2003).[7] This time period was applied to both methodological stages in this study. To analyze data for the eighteen countries over this time period pooled cross-sectional multivariate time series regression analyses were employed.

Data in this study were collected from the following annually published national and international governmental sources: the European Sourcebook, Eurostat, the Organization for

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[7] For example, Poland did not draft a new constitution following the collapse of communism until 1997, well after their liberation from the Soviet Union's sphere of influence. The Czech Republic and Slovakia were not independent countries until the peaceful splitting of Czechoslovakia in 1993.

Economic Co-operation and Development (OECD), Transparency International, The Heritage Foundation, and the World Bank. Europe as a region was selected as the comparative setting for this study because it contains both developed and transitioning countries, allowing this study to compare the region as a whole to the two country-groups. As such, the following countries were selected to represent the European region in this study: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Italy, the Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom. These country selections were based on two main criteria: identifying countries that provided geographical representation across all parts of Europe (to include transitioning nations), and countries that had reliably reported indicators from 1995 to 2009 with the least amount of missing data.

DEPENDENT VARIABLE

The definition of "serious crime" in this study is intentional homicide, which maintains continuity with past empirical tests of IAT (e.g., Maume and Lee, 2003; Messner and Rosenfeld, 1994; 1997b; 2009). Homicide data are commonly used in large part based on the likelihood of an incident being reported to police (due to the seriousness of the offense), and the continuity of cross-national legal definitions of "homicide" (LaFree and Drass, 2002; Messner and Rosenfeld, 1994). Intentional (completed) homicides are used in this study as opposed to "total" homicides, because total homicides rates include uncompleted homicidal attempts that vary in definition depending on the country (Eurostat, 2012a). As such, intentional/complete homicide rates will be measured as the intentional killing of a person, including murder, manslaughter, euthanasia, and infanticide.

INDEPENDENT VARIABLES

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This research chose to operationalize Anomic culture and social institutions separate from each other to maintain continuity with the original model of IAT (Chamlin and Cochran, 2007; Messner and Rosenfeld, 1994). Multiple measures were used when possible to represent each element in the theory to try to capture the multiple dimensions of Anomic cultural pressures and social institutions. Figure 2 below graphically represents the model of IAT with the operationalized variables used in this study.

[INSERT FIGURE 2 ABOUT HERE]

Cultural pressures to succeed was operationalized through two variables: the World Index of Economic Freedom, and the Gross Household Savings Rate. These two composite measures were chosen because they embody the cultural pressures to succeed as defined by Messner and Rosenfeld (1994; 2009; 2012); these scholars explicitly state that cultures that reinforce *economic* gains and successes are more likely to be Anomic, which thus in turn impact serious rates of crime. The World Index of Economic Freedom[8] is a composite measure that embodies the economic cultural values (as similarly explicated by Messner and Rosenfeld in 1994) that define "success" in economic, utilitarian terms. More specifically, the World Index of Economic Freedom combines fifty economic indicators that are grouped into 10 "freedoms," including trade policy, fiscal burden of government, government intervention in the economy, monetary policy, capital flows and foreign investment, banking and finance, wages and prices, property rights, and black market activity, in approximately 184 countries (Beach and O'Driscoll, 2003; Heritage Foundation, 2012; O'Driscoll, Holmes, and O'Grady, 2003). The index is compiled from multiple sources, to include data from social surveys and officially

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[8] The Index of Economic Freedom is a composite measure that is ranked between 0 and 100, with 0 representing the least amount of economic freedom, and 100 representing maximum freedom.

reported data. Taken separately, each indicator is arguably reflective of the economic institution, which would be problematic and conflict with the empirical separation of institutions from culture in this study. However, the composite index of these approximately 50 indicators has been designed by the Heritage Foundation to reflect gaps in what is considered "economic freedom and prosperity" (2012). That is, the level of openness to free-market capitalism (i.e., the composite index score) for each country is placed along a continuum that reflects "traditional American values" (Heritage Foundation, 2012: 1). This is nicely in keeping with Messner and Rosenfeld's (1994) conceptualization, and is also an indicator that has been used in past studies (e.g., Bjerregaard and Cochran, 2008a). However, in the current study this largely survey-based index is only used to represent cultural pressures to succeed, and is not used to measure any separate social institutions.

As Messner and Rosenfeld (2012) explain, within this cultural context money is the "metric" of success. "Money is literally, in this context, a *currency* for measuring achievement" (Orru, 1990: 235; emphasis in original). In an Anomic cultural environment, the pressure to accumulate more money is "relentless, which entices people to pursue their monetary goals by any means necessary" (Messner and Rosenfeld, 2012: 73). As such, the Gross Household Savings Rate is also used in this study as an indication of these particular culturally generated pressures. This indicator is calculated as the gross savings amount divided by the gross disposable income, with the latter being adjusted for the change in the net equity of households in pension funds reserve (Eurostat, 2012b). Gross savings is illustrative of the amount of the gross disposable income that is *not* spent as consumption on necessities. Therefore, countries with higher savings rates can be assumed to reinforce, or at least be compatible with, Messner

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and Rosenfeld's (1994) elements of individualism, achievement, pecuniary materialism, and universalism.

Lack of emphasis on legitimate means to succeed was operationalized using the Corruption Perception Index (CPI) and the unemployment rate. To-date, extremely few studies (e.g., Baumer and Gustafson, 2007) have empirically addressed this Mertonian variable as a separate cultural element; yet, Messner and Rosenfeld (2012) implied it to exist separately from *cultural pressures to succeed.* Anomie, then, is the product of cultural pressures to succeed coupled with a lack of emphasis on legitimate means to succeed (Merton, 1938). Again, Messner and Rosenfeld (2012) assigned a utilitarian emphasis to this cultural element. As such, the CPI was used as one operationalization of *a lack of emphasis on legitimate means to succeed*, and was first launched in 1995 by Transparency International (2012a; 2010). The CPI is a composite measure that combines information from a number of polls and surveys with corruption-related data collected by a variety of institutions and official governments, and ranks countries "based on how corrupt their public sector is perceived to be" (Transparency International, 2012b: 1). Questions also address the level of transparency regarding corruption (public awareness), the likelihood of encountering corrupt officials, and the perceived levels of undocumented payments or bribes connected with exports and imports, public utilities, tax collection, public contracts, and judicial decisions.

Unemployment rates were also used as a proxy representing a *lack of legitimate means to succeed*. The rate of unemployment, defined by the World Bank (2012: 1) as "the share of the labor force that is without work but available for and seeking employment," is a logical indicator to include, as the inability to find work significantly limits the ability to achieve success goals

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through legal means. Therefore, the higher a country scores on the unemployment rate, it can be assumed the country has a correspondingly higher lack of emphasis on legitimate means to succeed.[9]

Therefore, these four cultural variables considered together are seen as representative of Anomie.[10] That is, as countries experience intense cultural pressures to succeed (reinforced by increased levels of economic freedom and increased household savings), IAT predicts that these societies will experience higher levels of Anomie when they also experience higher unemployment rates and elevated levels of perceived corruption (resulting in a lack of emphasis on the legitimate means to succeed).

The *economic institution* was operationalized as the Gross Domestic Product (GDP) per capita, which is a commonly used indicator for this social institution (e.g., Bjerregaard and Cochran, 2008a; 2008b; Messner and Rosenfeld, 1997a). The GDP per capita is a basic measure of a country's overall economic health. This measure is in keeping with Messner and Rosenfeld's (1994) concept of the economic institution, as this institution "consists of activities organized around the production and distribution of goods and services" (Messner and Rosenfeld, 2012: 75). Therefore, countries with greater GDP per capita can be implied to have stronger economies than societies with small levels of GDP per capita.[11]

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[9] A good point to make, however, is that Messner and Rosenfeld (2009) acknowledged that cultural and institutional elements are known to change slowly over time. Unemployment rates are known to fluctuate at faster rates than perhaps would be reflective of an actual Anomic cultural (or institutional) shift; yet, Messner and Rosenfeld (2009) pointed out that IAT can account for these short-run variations.

[10] This will improve on past operationalizations of Anomie, as existing studies have largely considered Anomie to be a representative of a strong economic institution (e.g., Bjerregaard and Cochran, 2008a; 2008b).

[11] While economic dominance has most often been measured in prior tests of IAT by employing the Gini coefficient of income inequality (e.g., Bjerregaard and Cochran, 2008a; Chamlin and Cochran, 1995; Cochran and Bjerregaard, 2011; Zhau and Cao, 2010), this variable was not able to be used in this study due to data limitations; that is, data regarding the Gini coefficient were not consistently available during the fifteen-year timeframe for the eighteen countries included in this study.

The *political institution* was operationalized in this study through a Rule of Law measure and a Political Stability measure. Messner and Rosenfeld (2012) articulated the political institution to "mobilize and distribute power to attain collective goals" (75), and that one collective purpose of this institution is "the maintenance of public safety" (75). As such, these two indicators are part of six "dimensions of governance" that represent elements of public safety. These indicators are compiled by the Worldwide Governance Indicators (WGI) project, headed by the World Bank (2014), and are based on a series of aggregate indicators that include officially reported data as well as survey data .[12] More specifically, the Rule of Law dimension includes factors such as the confidence in the police force, confidence in the judicial system, reliability of police services, and effectiveness of the judicial system, while the Political Stability indicator measures factors such as the threat of civil unrest, government stability, violent social conflicts, and violent demonstrations. As countries rank lower on the overall level of government confidence, IAT anticipates crime rates to subsequently increase.

The *educational institution* was measured in this study as the primary educational attainment level in each country. Primary educational attainment is defined as the percentage of the labor force having completed at least primary schooling (World Bank, 2012). This proxy is in keeping with Messner and Rosenfeld's (2012) conceptualization of this social institution, as they described the aims of the educational institution to "enhance personal adjustment, facilitate the development of individual human potential, and advance the general knowledge base of the culture" (75). This specific indicator has been used in past tests of the theory because it has been "generally accepted as indicating access to education in a country" (Cullen, Parboteeah, and

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[12] Both Rule of Law and Political Stability are measured in a percentile rank, ranging from 0 to 100. 0 represents the lowest level of confidence in governance, and 100 represents the highest.

Hoegl, 2004: 416), but the data were gleaned from a different data source (i.e., the United Nations Development Program). Due to data limitations over time with the U.N. data, the World Bank provided educational attainment data used in this study. More common operationalizations of the educational institution include educational expenditures as a percentage of GDP (e.g., Bjerregaard and Cochran, 2008a; Maume and Lee, 2003). However, failing to separate aspects of the educational institution from its inherent economic ties increases the likelihood of high correlation among the variables.[13]

Finally, the *familial institution* was operationalized in this study as the divorce-to-marriage ratio. This was done to account for shortcomings in past measures of this institution; "one of the most consistently utilized measures of the weakening of the family units is the divorce rate" (Bjerregaard and Cochran, 2008a: 188; see also Piquero and Piquero, 1998; Maume and Lee, 2003). High divorce rates have been interpreted in these studies to represent family disruption; yet, changes in marriage rates over time were often not accounted for. Therefore, this research computed the divorce-to-marriage ratio as the number of divorces divided by the number of marriages per 100,000 population, which is consistent with past research (Chamlin and Cochran, 1995; Cullen, Parboteeah, and Hoegl, 2004).

To ensure that other factors were not significantly influencing these models, the following variables were controlled for: the percentage of 15 to 24 year olds and the percentage of males in the population (per 100,000). Even though IAT does not address individual differences, Cullen, Parboteeah and Hoegl (2004) suggested using these "individual-level control

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[13] See Dolliver's (2013) work illustrating the problems inherent in using educational expenditures in empirical tests of IAT.

variables" largely because criminological research "has shown relationships [exist] between most forms of crime… with age [and] gender" (416).

Given that time frame studied here encompasses a widespread crime decline across many of these included countries, it was also important to include control variables that have been highlighted in broader discussions of recent crime trends. As such, the following variables were also controlled for in this study to represent changes in imprisonment, urbanicity, and police populations: the total prison population (per 100,000), the total number of police officers (per 100,000), and the population density.[14]

ANALYTIC STRATEGIES

IAT was first tested in the European region as a full model using pooled cross-sectional multivariate time series analyses; the same techniques were applied to the data for the two separate country groups (i.e., developed and transitioning).[15] Each multivariate regression model indicated the coefficient, standard error, and significance of the explanatory variables, which in turn indicated the Anomic cultural and social institutional proxies with the greatest impact on the dependent variables. In order to capture any potential differential emphasis of either culture or institutions, a comparative process was employed. In all models, diagnostics were run to assure the absence of multicollinearity and highlight any potential serial correlation.[16]

RESULTS

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[14] For a list of descriptive statistics for all variables in this study, see Appendix A.
[15] A time series is a collection of random variables ordered in time $\{X_t\}$:

$$X_t = T_t + S_t + C_t \qquad (1)$$

Where T_t is a long-term trend component; S_t is seasonality; and C_t is the remaining short-term component of cyclical residual.

[16] For all time series analyses, the natural log was taken for each variable before running each analysis. This transforms any series that might be expected to grow (exponentially) over time (i.e., experience variance instability); thus, taking the natural log is done to attempt to stabilize the variance volatility (Yaffe and McGee, 2000).

EUROPEAN REGION

Table 1 below displays the results of the pooled cross-sectional multivariate regression analyses conducted on the European region containing data from all eighteen countries (see Appendix B). Model 1 tests only the impact of cultural proxies and control variables on intentional homicide rates; Model 2 tests only the impact social institutional proxies and control variables on intentional homicide rates; finally, Model 3 tests the full model of Institutional Anomie. Separating these models enables further investigation of moderating effects between cultural and social institutional proxies and subsequent impacts on homicide rates in Europe.

[INSERT TABLE 1 HERE]

From the above table, it is evident that there exist mixed results in terms of IAT's explanatory ability in the European Region. None of the cultural proxy variables were found to be significant predictors in Model 1. In Model 2, GDP per capita was the only significant social institutional proxy found to predict intentional homicide rates. However, the direction of the coefficients of these significant variables is key in identifying support for IAT.[17] For instance, IAT predicts that as the economy strengthens (as represented by an increase in GDP per capita), intentional homicide rates should increase. Thus, a positive coefficient is needed to represent this relationship. However, that is not supported in the findings. The model predicted that as GDP per capita increases in all eighteen countries in Europe, the intentional homicide rate fell by 0.28 deaths per 100,000 population. While the full model (Model 3) was significant and explained 82% of the variance, the model contained only two significant predictor variables (i.e., GDP per capita and prison population) of intentional homicide rates in Europe. There were no significant

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[17] See Figure 3 below for a table describing the anticipated direction of the regression coefficients.

variables representing cultural proxies, and only one significant variable (i.e., GDP per capita) representing social institutional proxies.

Comparisons between the three models also interestingly revealed that the cultural and institutional variables do not appear to interact or moderate each other's effects. That is, the full model revealed little difference in the size of the coefficients or statistical significance of both cultural and institutional variables.

DEVELOPED AND TRANSITIONING COUNTRY GROUPS

In order to comparatively test IAT using the new measures presented in this study, the eighteen countries in Europe were divided into two groups: developed and transitioning countries. Table 2 below illustrates the pooled cross-sectional multivariate regression results for the developed country group (Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom), and Table 3 presents the same results for the transitioning country group (Czech Republic, Hungary, Poland, Slovakia, and Slovenia).

[INSERT TABLE 2 HERE]

The results in the above table reflect the findings of the three models of the developed country group. Model 1 contains three significant predictor variables, only one of which is a cultural proxy; yet, this variable's coefficient was in the direction predicted by IAT. When the social institutional proxies alone were tested in Model 2, only GDP per capita was found to significantly predict homicide rates and the coefficient was not supportive of the theory's

predictions.[18] Model 3, however, presented a very interesting story; here, all but one of the cultural proxies was found to be significant, and all social institutional variables and control variables were also significant predictors of intentional homicide. This indicates that when cultural and institutional variables interacted together within Model 3, their impacts on the dependent variable were amplified, thus enhancing the model. Interestingly, however, the explanatory ability of Model 3 did not significantly improve from Models 1 or 2.

The findings in Model 3 display mixed results in terms of support for IAT. Of the significant cultural proxies, two-thirds contained coefficients in the direction anticipated by IAT. The World Index of Economic Freedom was significant, indicating that as the developed country group in Europe moves one percentage point towards maximum economic freedom, intentional homicide rates increased by approximately 2.5 deaths per 100,000 population. The same theory-supportive relationship was found among the unemployment variable, but not among the Gross Household Savings Rate; this variable exhibited an unexpected inverse relationship with the dependent variable.

Two of the significant social institutional variable coefficients (i.e., GDP per capita and educational attainment) were not in the direction predicted by IAT. This partially contradicts the theory's expectations of a stronger economy lending to higher rates of homicide and a strengthening of non-economic institutions leading to lower homicide rates. However, the two political indicators and the familial institution proxy were found to be significant and supportive of the theory. For instance, as the ratio of divorces-to-marriages increased, indicating a weakening of the family unit, the number of intentional deaths increased. These findings

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[18] Note: the variable representing the number of police per 100,000 population was not able to be included in the regression due to high multicollinearity.

presented mixed support for IAT, but did uncover many more significant, predictive relationships with intentional homicide rates than the full European model presented in Table 1.

[INSERT TABLE 3 HERE]

The pooled cross-sectional multivariate results for the transitioning country group (illustrated in Table 3 above) illustrated a bit different of a picture from Table 2.[19] Only two of the three models were significant; when testing only cultural proxies and control variables (Model 1), none of the cultural proxies were found to significantly predict homicide rates. In Model 2, GDP per capita and educational attainment were found to be significant. Interestingly, GDP per capita was consistently significant in Model 2 for the European Region and the developed country group (Tables 1 and 2, respectively), and the direction of the GDP per capita coefficient in all three sets of findings (for both Models 2 and 3 in the three tables) were consistently in the direction opposite that of what IAT would predict.

Out of seven significant predictor variables found in Model 3, only three had coefficients in the theoretically anticipated direction. This demonstrated less support for IAT than was found in the developed country group. This in line with predictions from Messner and Rosenfeld (1994; 2009; 2012) themselves, who originally conceptualized the theory to explain crime in developed countries, not transitioning or non-developed countries. Significant social institutional proxies were as similarly represented as Anomic cultural proxies in the models and found weak support for IAT. Here, a strengthened economy indicated a *decrease* in homicide rates, while an increase in political stability resulted in *increased* homicides. Regarding cultural pressures to succeed, both proxies were found to significantly decrease homicide rates as cultural pressures increased.

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[19] It should be noted that CPI, divorce-to-marriage ratio, the percentage of population between 15 and 24 years of age, and the prison population were unable to be included in the regression analyses because of high multicollinearity among these variables.

DISCUSSION AND CONCLUSIONS

As previously mentioned, research needs to move beyond the "what works" mentality with regards to IAT's applicability, and instead refocus the discussion on interactions between cultural and institutional elements, and importantly begin to dismantle the theoretical black box. To better understand the various cultural-institutional configurations conducive to increases in homicide rates found in this study, Figure 3 below synthesizes the full model (i.e., Model 3) pooled cross-sectional multivariate time series results from the regional analysis and the two country-group analyses. The first column in the figure reflects the coefficients in Institutional Anomie model as originally proposed by Messner and Rosenfeld (1994). Green shading illustrates consistency with theoretical expectations for the cultural or institutional elements as compared to the Institutional Anomie column and red shading indicates inconsistent results for the three country groups.[20] The developed country group was found to be the closest match to Messner and Rosenfeld's (1994) theoretical model (i.e., strong cultural pressures to succeed and a lack of legitimate means to succeed produce Anomie, and taken together with weaker non-economic institutions produce high levels of serious crime). This is consistent with the theory, as Messner and Rosenfeld (1994) originally developed IAT to explain rates of serious crime in Western, capitalist countries. The largest point of departure from the original theoretical model was with regards to a strong economy leading to higher rates of homicide; no support was found for this institutional element in any of the regression results presented in any of the three regression models (Tables 1, 2, and 3, respectively).

[INSERT FIGURE 3 ABOUT HERE]

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[20] The figure is oriented in such a way that the columns for each model provide a vertical "check box" of the various proxies for cultural and institutional elements of IAT.

Interestingly, the European region as a whole did not perform as well as anticipated by IAT. Strong cultural pressures to succeed did somewhat predict high rates of homicide in this model, but no support was found for a strong economic institution or weak non-economic institutions also leading to high rates of crime. In fact, support was found indicating that a strengthening of the non-economic institutions was predictive of a decrease in homicide rates.

Likewise, the transitioning country-group also yielded questionable support for IAT; weak cultural pressures to succeed and a weak economic institution were found to result in high rates of serious crime. This indicates a very different cultural-institutional configuration that is conducive to crime existing in both the transitioning country group and in the European region.

Acknowledging that the developed country group did not generate perfect theoretical support, it performed the best out of the three comparisons. Similar to the European region, strong Anomic cultural pressures to succeed did somewhat predict high rates of homicide; however, weak non-economic institutions were significant predictors of homicide, as expected by IAT. The economic proxy failed to perform as the theory predicted across the three country-groups.

The findings in Figure 3, taken together, perhaps also indicate that it is important to differentiate between developed and transitioning country-contexts when empirically testing IAT. When all eighteen countries were combined into the full model, separate operations of cultural pressures and institutional forces in these two country groups may have been nullified, thus resulting in a lack of significant findings.

Importantly, these findings advance criminological thought beyond considering whether or not IAT "works" or does not "work," and instead considers variations of Anomic culture and

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institutions within the theoretical model. However, it should also be noted that the model used in this research defined Anomic culture as Messner and Rosenfeld (1994) intended; that is, Anomic culture only embodied the elements of the American Dream. Therefore, the models in Figure 3 could only be identified as being similar or dissimilar to the American Dream in terms of cultural pressures to succeed; this study was unable to measure, for instance, access to legitimate means to achieve the culturally prescribed goals. Nonetheless, these exploratory first steps have identified differences in the cultural-institutional configurations between European, developed, and transitioning countries, and have thus preliminarily indicated multiple forms of Anomie existing in Europe.[21]

These findings further support the Durkheimian roots of IAT. Durkheim reminds us (as did Messner and Rosenfeld in 2001) that these rules, norms, and meanings developed through human interactions will manifest themselves differently in different societies, variations that must be accounted for in comparative research. Where cultural pressures that encourage societal members to adopt an "anything goes" mentality in the pursuit of personal (monetary) goals is applicable to the United States (in addition to the European region and developed country group as found in this research), these norms and value systems are not applicable to all societies.

In fact, IAT was built on these Durkheimian foundations with the understanding that "other institutional balances exist" in various societies (Messner and Rosenfeld, 2001: 153); yet, the way the Institutional Anomie model was originally designed may limit the theory's direct applicability to different settings. This is because the direction of Anomic cultural and institutional elements of the theory are not allowed to vary, as the expected causal processes have

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[21] These various forms of Anomie might include (per the findings of this research) cultural pressures to succeed that are *not* defined by utilitarian, monetary qualities, and/or societies that might contain access to legitimate means to achieve these various culturally prescribed goals, both of which may lead to high levels of crime.

been somewhat defined by Messner and Rosenfeld (Baumer and Gustafson, 2007);[22] in other words, increases in cultural pressures to succeed together with a lack of legitimate means to succeed lead to increased Anomie, and after interacting with an institutional configuration dominated by the economy, will lead to increased crime. Serious crime is also considered constant or a given in their model.[23] As the results of this study indicated, as long as the theory is employed in the limited countries that resemble the American dream, the model should produce expected results. Thus, it is imperative that future studies of Institutional Anomie allow the variables to interact and vary in order to identify these various cultural-institutional configurations that produce crime in societies around the world, as suggested by Durkheim and Messner and Rosenfeld (2001).[24] The more narrow Anomic cultural-institutional definition of "Anomie in America" is less useful for predicting crime in all countries, but it becomes more meaningful when placed as one piece of the global puzzle in determining the causes of crime through the cultural-institutional lens.

STUDY LIMITATIONS AND FUTURE RESEARCH

While this study made significant contributions to the field by extending the work of Baumer and Gustafson (2007) within comparative settings, the analyses are limited by the nature of the data employed. Operationalizing key concepts is a common challenge faced by IAT scholars (Chamlin and Cochran, 2007; Messner and Rosenfeld, 2009), and is one challenge that

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[22] This is a point that is actually acknowledged by Messner and Rosenfeld (2001) as they reiterate "IAT seeks to explain the elevated levels and … types of criminal activity that result from *particular forms of institutional imbalance*" (153; emphasis added). This means the authors have defined the specific situation in which high rates of serious crime (homicide) should occur.

[23] This theory originated based on their observations that the U.S. and other developed "capitalist" countries had the highest rates of homicide compared to other nations, which is consistent with Durkheimian notions of human nature.

[24] For instance, weak cultural pressures to succeed (as defined by IAT) coupled with a strong economy and stronger non-economic institutions resulted in higher rates of crime in transitioning countries.

this study shares. With little guidance from past research on operationalizing variables reflective of "cultural pressures to succeed" and "lack of legitimate means to succeed," how closely the proxies chosen in this study represent these latent constructs indeed present conceptual validity concerns. Similarly, while the measures used to represent the four social institutions have been relatively established in past literature, singular measures are rarely able to reliably encompass an entire institutional concept like "economic strength" (measured in this study as GDP per capita). Moreover, an additional challenge faced by this study that compounded problems of conceptual validity among the proxies employed was locating existing data covering fifteen consecutive years for eighteen countries. For instance, past (cross-sectional) research has more commonly employed the Gini coefficient (a composite measure of income inequality) to represent the economic institution; however, data for this indicator were not available over fifteen years for many of the countries included in this study, and thus could not be included in the time series analysis. As such, employing available data on (for instance) GDP per capita to represent economic strength is limited by a number of factors[25] that may have influenced the cultural-institutional configurations found in this study.

The use of officially collected statistics on instances of homicide in this study and the subsequent findings of this research also contribute to the ongoing debate in the literature regarding whether or not variations in homicide rates can be related to larger variations in structural conditions (Kurbin and Herting, 2003; LaFree et al., 1992). That is, some scholars have questioned "whether the effects of structural correlates on homicide rates are so context specific that they appear to be variable over different periods of time and at various levels of

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[25] These limitations include underestimating changes in real income (e.g., leisure time, safeness of jobs), changes in consumer electronics (including products that may not be consistently available in all countries in this study over time), and failing to account for non-market production.

analysis" (Kurbin and Herting, 2003: 330; Land et al., 1990). Indeed, this could present potential

problems related to aggregating officially recorded homicide rates at the national level (thus

essentially "washing out" important contextual elements of homicide); this concern is amplified

when pooling this aggregated variable amongst numerous countries (e.g., transitioning country

group) over a period of fifteen years. While this broader debate lies outside of the scope of this

particular research endeavor, the findings of this paper reflected differentially based structural

correlates that were indeed found to impact homicide rates even at the pooled country-level, thus

contributing an evidence-based voice to this debate. However, the lack of findings among the full

European model (which included all eighteen countries) may be attributable to this potential

limitation. Further research is needed to confirm or refute this possibility.

A final limitation is more of a consideration for the context of the findings of this study.

That is, this research was conducted during a set time period; the findings of this study are

therefore relevant for the time period 1995 to 2009 for the eighteen countries in this sample. The

findings are useful in giving researchers a starting place for examining certain aspects of Anomic

culture and social institutions in historical time periods for other countries around the world, but

the findings cannot be directly transposed to these other societal settings in other time periods.

Given the findings and limitations of this study, future research should strive to build

more comprehensive and multidimensional empirical measures of the key theoretical concepts in

IAT using existing secondary data, but also using primary longitudinal data (e.g., survey data).

For example, measures of economic strength could benefit from including more robust measures

of human and organizational capital in addition to GDP, including debt levels, the rate of job

creation and turnover, and real estate values. This will improve the conceptual validity of the

indicators and facilitate more accurate tests of IAT to be conducted, and will also allow for a replication of this study to be conducted. However, as supported by the findings of this study, it is imperative that future tests of IAT cease to combine data from large numbers of countries (e.g., Messner and Rosenfeld, 1997a) assuming IAT operates the same in multiple (cultural and institutional) settings.

CONCLUSION

The main findings from this study emphasize the need for future research considerations to continue to unpack the "black box" of IAT, and to continue the work of Baumer and Gustafson (2007) by more closely testing causal, interactional relationships within the theory. This study extended the work by Baumer and Gustafson (2007) by empirically testing the applicability and variability of key Anomic cultural and social institutional elements of IAT to the study of homicide rates in Europe. While the scope of this research was ambitious, the theoretical orientation of IAT facilitated the discovery of Anomic cultural and institutional factors found to differentially impact serious crime in Europe. These findings have the potential to present policymakers with more comprehensive tools from which to build more effective policies and initiatives designed to curb serious crime rates in societies with various cultural-institutional configurations. Importantly, this study has begun to unpack the "black box" that is Institutional Anomie.

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Table 1. European Region Regression Results with Fixed Effects Modeling for Intentional Homicide Rates (B(SE))

Variable	Model 1 (*n* = 253)	Model 2 (*n* = 254)	Model 3 (*n* = 247)
Cultural Proxies			
W.I. of Econ. Fred.	-0.38(0.29)		0.22(0.31)
G.H. Savings Rate	0.04(0.05)		-0.05(0.05)
CPI	0.20(0.15)		0.21(0.14)
Unemployment	0.10(0.06)		0.11(0.07)
Social Institutional Proxies			
GDP per capita		-0.28(0.05)***	-0.32(0.06)***
Rule of Law		0.11(0.35)	0.08(0.35)
Political Stability		-0.03(0.13)	0.04(0.13)
Divorce-to-marriage Ratio		0.01(0.08)	0.03(0.09)
Educational Attainment		0.07(0.10)	0.09(0.11)
Control Variables			
Population Male	-11.56(6.27)	-7.32(5.69)	-2.28(6.17)
Population % Ages 15-24	0.77(0.21)***	0.35(0.26)	0.31(0.29)
Prison Population	-0.62(0.13) ***	-0.46(0.11)***	-0.38(0.13)**
Police	0.34(0.11)**	0.13(0.11)	0.16(0.11)
Population Density	0.45(0.87)	1.18(0.83)	1.10(0.97)
Adjusted R^2	0.7913	0.8108	0.821
Prob > F	***	***	***

Note: *p < .05; **p < .01; ***p < .001

Table 2. Multivariate Regression Results with Random Effects Modeling for
Intentional Homicide Rates for Developed Country Group (B(SE))

Variable	Model 1 (*n* = 190)	Model 2 (*n* = 184)	Model 3 (*n* = 184)
Cultural Proxies			
W.I. of Econ. Fred.	0.52(0.38)		2.51(0.42)***
G.H. Savings Rate	-0.07(0.51)		-0.10(0.05)*
CPI	0.19(0.16)		0.13(0.22)
Unemployment	0.17(0.06)**		0.29(0.06)***
Social Institutional Proxies			
GDP per capita		-0.19(0.07)**	-0.24(0.07)***
Rule of Law		0.43(0.45)	-2.03(0.41)***
Political Stability		0.07(0.15)	-0.37(0.15)*
Divorce-to-marriage Ratio		0.03(0.09)	0.41(0.07)***
Educational Attainment		0.10(0.09)	0.31(0.09)***
Control Variables			
Population Male	-17.16(4.83)***	-2.12(6.27)	-21.46(3.47)***
Population % Ages 15-24	0.18(0.20)	0.02(0.31)	1.64(0.32)***
Prison Population	-0.65(0.13)***	-0.47(0.14)***	-1.05(0.16)***
Police	--	0.17(0.21)	-0.44(0.15)**
Population Density	0.10(0.06)	0.07(0.21)	0.10(0.02)***
Adjusted R^2	0.8114	0.8177	0.8197
Prob > chi2	***	***	***

Note: *p < .05; **p < .01; ***p < .001; note: -- indicates omission from inclusion in model due to
multicollinearity

Table 3. Multivariate Regression Results with Random Effects Modeling for
Intentional Homicide Rates for Transitioning Country Group (B(SE))

Variable	Model 1 ($n = 65$)	Model 2 ($n = 70$)	Model 3 ($n = 70$)
Cultural Proxies			
W.I. of Econ. Fred.	00.14(0.47)		-1.11(0.45)*
G.H. Savings Rate	0.14(0.10)		-0.23(0.10)*
CPI	0.10(0.31)		--
Unemployment	0.11(0.16)		0.29(0.09)***
Social Institutional Proxies			
GDP per capita		-0.34(0.09)***	-0.50(0.07)***
Rule of Law		-0.37(0.40)	-0.27(0.43)
Political Stability		0.39(0.25)	0.49(0.24)*
Divorce-to-marriage Ratio		--	--
Educational Attainment		-0.23(0.07)**	-0.27(0.07)***
Control Variables			
Population Male	-20.54(3.61)***	-12.08(3.58)***	-10.79(2.73)***
Population % Ages 15-24	2.20(0.48)***	1.64(0.58)**	--
Prison Population	--	--	--
Police	0.14(0.15)	-0.13(0.13)	-0.04(0.13)
Population Density	0.28(0.35)	-0.04(0.34)	-0.02(0.38)
Adjusted R^2	0.8168	0.7442	0.7934
Prob > F	***	*	***

Note: *$p < .05$; **$p < .01$; ***$p < .001$; note: -- indicates omission from inclusion in model due to
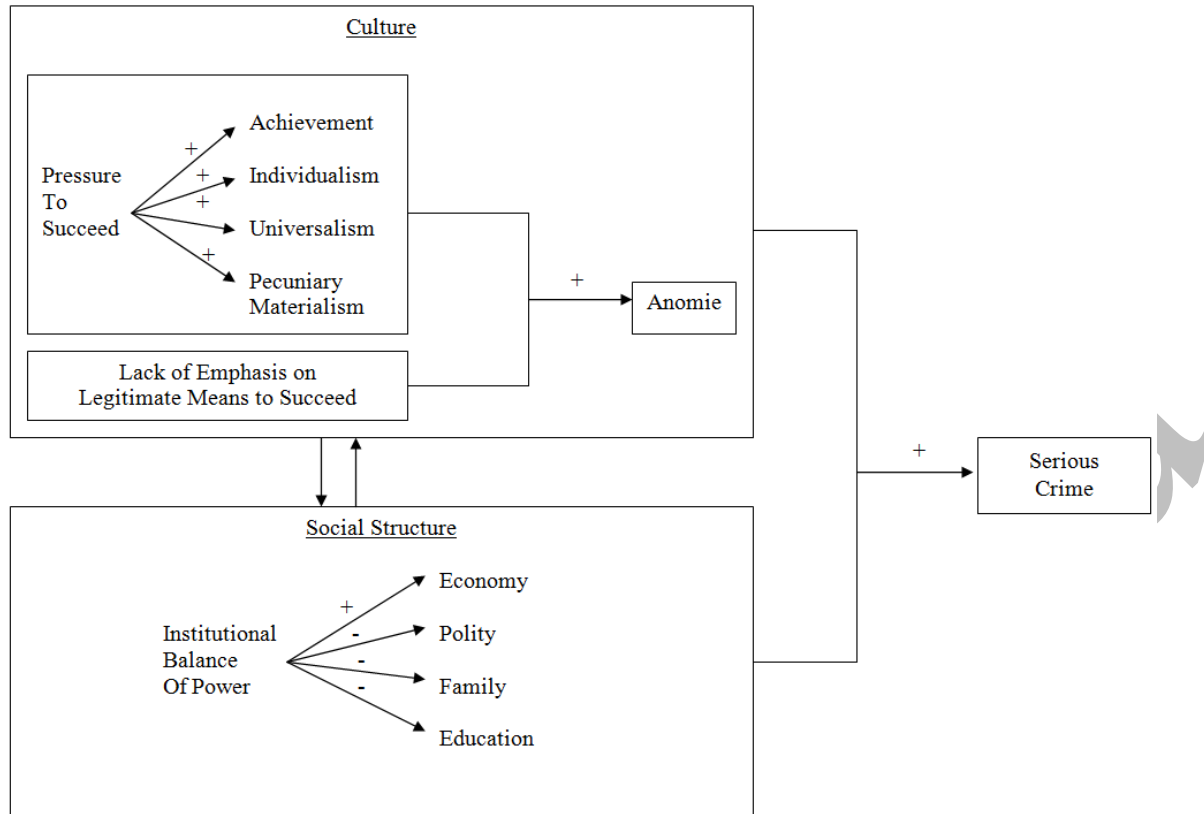multicollinearity

Figure 1: Schematic Representation of Institutional Anomie Theory[26]

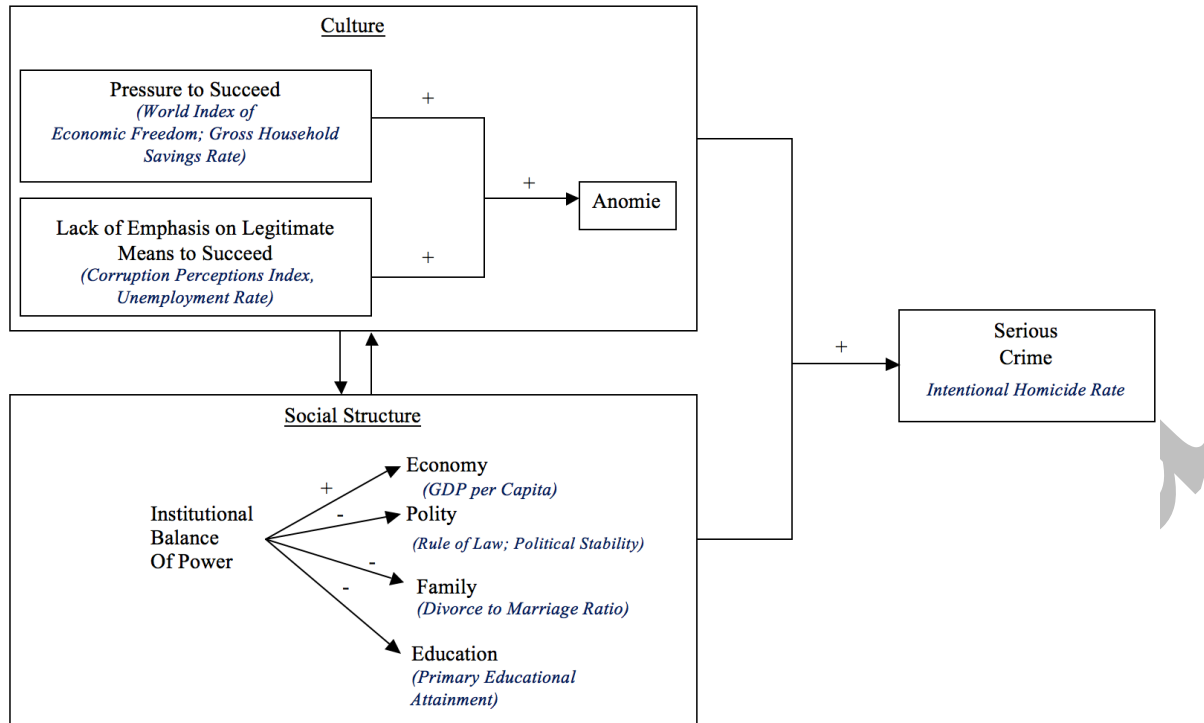[26] Adopted from Messner and Rosenfeld (1994; 2012).

Figure 2: Adapted Schema of Institutional Anomie Theory with Variables[27]

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[27] Adapted from Messner and Rosenfeld (1994; 2012).

Figure 3. Cultural-Institutional Configurations Conducive to High Levels of Intentional Homicide

Variables	Institutional Anomie Theory	European Region	Developed Country Group	Transitioning Country Group
Cultural Proxies				
W.I. of Econ. Freed.	+	+	+	-
G.H. Savings Rate	+	-	-	-
CPI*	-	+	+	†
Unemployment Rate	+	+	+	+
Social Institutional Proxies				
GDP per capita	+	-	-	-
Rule of Law	-	+	-	-
Political Stability	-	+	-	+
Divorce-to-marriage*	+	+	+	†
Primary Education	-	+	+	-

Note: + indicates a positive coefficient, - indicates a negative coefficient; † denotes not included due to multicollinearity; * indicates reverse coding (e.g., a high score on CPI indicates low levels of corruption)