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The Influence of Inequality and Noneconomic Institutions on Cross-National Terrorist Incidents

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THE INFLUENCE OF INEQUALITY AND NONECONOMIC INSTITUTIONS ON CROSS-NATIONAL TERRORIST INCIDENTS

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THE INFLUENCE OF INEQUALITY AND NONECONOMIC INSTITUTIONS ON CROSS-NATIONAL TERRORIST INCIDENTS

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To expand the research base concerning terrorism this study connects terrorist incidents on a global scale with economic and noneconomic institutional factors. Whereas most terrorism studies use social disorganization theory or anomie theory as their theoretical bases, this study uses institutional anomie theory (IAT) to examine the influence of economic and noneconomic institutions on terrorist-incident counts in the 1970s, 1980s, and 1990s. The research employs the following five sources that are linked together: The Global Terrorism Database (GTD), World Bank Database, data from the University of Texas Inequality Project (UTIP), the United Nations (UN), and the Central Intelligence Agency (CIA). Ordinary Least Squares (OLS) Regression models examine the influence of inequality on counts of terrorist incidents for the decades of 1970s, 1980s, and 1990s net of controls. OLS models also examine the extent to which the influence of inequality on

terrorist-incident counts is mediated by the strength of the noneconomic institutional structures of health care and the family. Results from ordinary least squares regression analyses show that for the time period of 1970 to 1979 there was a nonsignificant, negative association between inequality and terrorist-incident counts and neither health care nor number of divorces was a mediating factor. For the time period 1980 to 1989 a significant, positive association existed between inequality and terrorist incident counts, supporting the hypothesis that countries with higher levels of inequality will have higher counts of terrorist-incident counts. However, in the 1980s neither health care nor family mediated the effects of inequality on terrorist-incident counts. For the time period 1990 to 1997 a statistically significant, positive association was found between inequality and terrorist-incident counts as well as successful mediation by health care on the effects of inequality on terrorist-incident counts, which supports the hypothesis that the influence of inequality on terrorist-incident counts will be mediated by noneconomic institutional structures. Implications of these findings are discussed.

CHAPTER I

INTRODUCTION

Terrorism is an understudied topic in the field of sociology and criminology. In fact, sociologists showed little interest in the topic until September 11, 2001, the day the plane hijackings and attacks on the World Trade Center and Pentagon took place (Turk 2004:271). Defining terrorism is one of the many problems that stems from the little interest shown in the topic, while other problems come from powerful countries' control of what gets labeled as terrorism and who is labeled terrorists. With such phrases as al Qaeda, Middle East, counterterrorism, and Jihad becoming mainstream, the interest in terrorism on a global scale has increased among governments, investors, social scientists, and citizens alike.

Two realms of terrorism exist, international and domestic. However these terms are increasingly difficult to distinguish due to increased globalization and cooperation among various groups (Turk 2004:276). Terrorism is further complicated by multiple motivational factors--including political, religious, economic, social, revenge, and symbolism (Turk 2004:277). Exposure to

terrorism can take place in several settings and be learned through family, socialized through education, and encouraged by political systems (Turk 2004:279). As research in the field continues, nations across the globe should gain a better understanding of how to define, combat, and prevent terrorism.

To assist in expanding the research base within the field of sociology, this study employs the Global Terrorism Database (GTD); which includes documentation of every known terrorist incident globally from 1970 to 1997. Terrorist incidents from the GTD were aggregated to national-level-terrorist-incident counts, providing the total annual number of terrorist incidents by year for each country. These terrorist-incident counts were linked with longitudinal data from the World Bank's Development Indicators Database and other secondary sources including the University of Texas Inequality Project (UTIP), the United Nations (UN), and data from the Central Intelligence Agency (CIA). The World Bank's World Development Indicators Data (2006) provided measures on health care, age structure, sex ratio, and level of urbanization for each country. The UTIP provided a measure of inequality for each country based on manufacturing-pay inequality to make estimates on household inequality. Data from the UN

provided information on family, in specific, the number of divorces in each country. The CIA Factbook provided data on religious dominance of each country. Specific variables drawn from these sources were averaged across three time periods: 1970-1979, 1980-1989, and 1990-1997.

The dependent variable that was examined in this study was counts of terrorist incidents. The primary independent variable in this study is inequality, as measured by the University of Texas Inequality Project (2005), which measures manufacturing-pay inequality in order to make estimates on measurements of inequality in household income (Galbraith and Kum 2004:1).

This research is an attempt to offer an empirical assessment of institutional anomie theory using terrorist-incident counts as the dependent variable. Traditionally IAT has examined correlates of violent crimes such as homicide cross-nationally. One goal of this study is to assess whether IAT is a valid theory for examining terrorism cross-nationally.

Messner and Rosenfeld's (2000) IAT theory is an extension of Merton's anomie theory of the 1930s. Messner and Rosenfeld's theory postulates that variation in cross-national violent crime rates are a product of the economies effect on noneconomic institutions. When the economy

becomes too strong in a society the noneconomic institutions are either devalued or must accommodate the economy or the economy penetrates the noneconomic institutions. Inequality has been used by researchers as a proxy measure for influence of the economy on such non-economic institutions.

Based on the tenets of institutional anomie theory, this research also examines the extent to which the relationship between inequality and terrorist counts is mediated by noneconomic institutional structures. Institutional anomie theory suggests that noneconomic institutions play a vital role in reducing the anomic influences of the economy, thus curbing rates of violence, especially homicide rates, in aggregate units. This study examines the influence of several noneconomic institutional measures in mediating the relationship between inequality and terrorist-incident counts. Non-economic institutional measures include the number of hospital beds, life expectancy, physicians per 1,000, and number of divorces in countries during the time periods under consideration. Multivariate ordinary least squares (OLS) models assess the influence of these factors while controlling for the percent of urban population, religious dominance, percent of population aged zero to fourteen, and percent of

population that is female. Results suggest that only for the time period of the 1990s did mediation, via health care, occur between inequality and terrorist incident counts. For the time period of the 1970s significant findings were evident only for number of divorces. The results demonstrate that countries with more divorces had higher terrorist-incident counts. For the time period of 1980 to 1989 terrorist-incident counts were positively and significantly associated with inequality as well as the percent of the population aged zero to fourteen.

CHAPTER II

LITERATURE REVIEW

Because terrorism is such an understudied topic in both criminology and sociology, the majority of research and literature on the topic has been published in the fields of economics, political science, and history. Topics associated with terrorist incidents include globalization, technology, capitalism, and a market society.

Globalization and Global Stratification in Context

Capitalism has assisted in improving the lives of billions of people around the globe; however, capitalism has also excluded billions. Those who have been left behind by this economic system find meeting their needs increasingly more difficult and instead find themselves stuck in a cycle of poverty and disease (Gates 2008:40).

In his book, *The Lexus and the Olive Tree,* Thomas Friedman (1999) discusses the constant struggle caused by globalization among nations who desire the technology and possibilities offered by the Lexus while still struggling to hold on to their traditional values or olive trees. Globalization, according to Friedman, is more than just the

Americanization or Westernization of nations and the spread of McDonald's restaurants to remote areas. Globalization is a complex principle guiding international relations, global markets, and power of individuals and nations. Friedman defines globalization in this way:

> the inexorable integration of markets, nation-states and technologies to a degree never witnessed before--in a way that is enabling individuals, corporations and nation-states to reach around the world farther, faster, deeper and cheaper than ever before, and in a way that is enabling the world to reach into individuals, corporations, and nation-states farther, faster, deeper, cheaper than ever before. (Friedman 1999:9)

While holding on to traditional values, it is also crucial that nations participate in the Lexus movement, or globalization, in order to thrive economically. Friedman stresses that the key for such nations caught in limbo between the Lexus and the olive tree is to strike a balance between traditional values and the capitalist world-economy.

Now, more than ever, citizens of every nation are more aware of how people in opposing nations live. Injustices and corruption can no longer be hidden or ignored, nor can achievements and wealth. Globalization has also drastically transformed the work force in countries all around the globe. There are those who are devoured by the developed world due to them being so far behind that they

see no hope of catching up or becoming a thriving part of this new world system. While capitalism has drastically improved living conditions for many, it is not making living conditions better fast enough for the two billion people at the bottom of the socioeconomic ladder living on less than $2 per day (Collier 2008; Gates 2008; Sachs 2006). The desire for countries to join the capitalist race to prosperity has led to an adoption of capitalist ideologies and an emphasis on individual economic success; thus, the "institutional balance of power may be tilting toward the economy and away from social welfare" (Kim and Pridemore 2005:1381–82).

Individuals that are left behind turn to different means to survive. According to Friedman this idea is why we see crime waves occurring in countries with high levels of inequality and poverty (1999:335). Local crime waves can turn into global problems when "groups that are economically aggrieved by globalization merge with those who are culturally aggrieved" (Friedman 1999:344–45). This phenomenon is most evident today in the Middle East, where cultural, political, economic, religious, and ideological concepts have converged to create one large backlash against Western culture and the world as a whole. Such backlashes have led to terrorist incidents not only in the

United States but also in Europe, where major symbols of Westernization and the developed world has been under attack ("Investigators Pick Through. . ." 2005; "September 11: Chronology. . ." 2001; "Threat Video in. . ." 2004).

Macro-Level Sociological Theories of Violence

Due to terrorism being an understudied topic in sociology, theories specifically concerning terrorism have not been well developed. However, insights from existing theories in criminology can be applied to the study of terrorism. Criminal action, motivated by frustration and anger, can become an acceptable response by those who are oppressed rather than supported by society (Quinney 1980). Criminologists have often found that people who feel they have no power or resources may engage in criminal or deviant activities for a variety of reasons (Merton 1938; Sampson and Groves 1989; Shaw and McKay 1942). Both poverty and inequality are hypothesized to be contributing factors to a person's sense of powerlessness. Major criminological theories that assist in explaining the connections between powerlessness, poverty, inequality, and crime include social disorganization theory (Shaw and McKay 1942), Merton's Anomie Theory (Merton 1938), and more recently Messner and Rosenfeld's (2000) institutional anomie theory. This study will employ primarily the

framework provided by IAT.

Merton's (1938) work serves as a theoretical framework for viewing the relationship between cultural goals and institutionalized means. Instead of exploring deviance through a focus on biological factors, Merton chose to focus on the nonbiologial phases of goals, means, and ends by using Chicago workers as his example. The focus is not only on the goals and the means but also the pre-existing conditions, such as culture, that have an effect on whether a person chooses conformity, innovation, ritualism, retreatism, or rebellion.

The "lack of opportunity" to achieve the American dream is not necessarily what causes deviant behavior. Many other areas of society must be examined in order to paint a more accurate picture (Merton 1938:680). It is important to note here that Merton is quick to dispel the myth that everyone in America, or across the globe, has the same chance at the American dream, at wealth, and at capital. Instead he posits that there are other factors that contribute to an individual choosing alternative means to achieve his or her financial goals.

Social structure and anomie can help explain what is termed "the varying correlations between crime and poverty." He continues by stating that "poverty is not an

isolated variable," which is also supported in other criminological theories such as social-disorganization theory (Merton 1938:680; Sampson and Groves 1989).

In their reconceptualization of Merton's original ideas, Messner and Rosenfeld (2000) offer their institutional anomie theory (IAT). They state that "the glorification of individual competition fosters ambition and mobility," which drives people apart and tends to weaken cohesiveness (Messner and Rosenfeld 2000:4). Messner and Rosenfeld expand on the use of Merton's theory by including an analysis of the institutional structures of society and how those relate to anomie and crime. Noneconomic institutions are devalued, are forced to accommodate the economy, or are penetrated by the economy in such a way that the economic institutions receive too much power and the noneconomic institutions are weakened. As a result of this weakening, the social controls, social support, and positive socialization provided to individuals through noneconomic institutions, such as religion, family, education, and health care, are weakened. Anomie theories hypothesize that in areas where high degrees of inequality and stratification are present, thus representing a cultural emphasis on material success and a weakening of non-economic institutions, high violent crime rates also

exist.

IAT helps us explore how noneconomic social institutions such as family, education, and polity help in mediating or reducing the harmful anomic effects of the economy (Chamlin and Cochran 1995; Messner and Rosenfeld 2000). Capitalist culture and a social structure in which the economy dominates and penetrates noneconomic institutions creates an environment wherein the American dream is presented as a universal goal and where individuals are to pursue this goal by any means necessary, even at the expense of noneconomic institutions. This predominant economic structure takes over and weakens the noneconomic institutions' control. The core hypothesis of IAT is that strong noneconomic institutions can reduce the anomic effects of the economy through instilling social control and providing social support. Even in countries where there is a strong culture of achieving material success, if the noneconomic institutions of that country are strong, the social control and support the noneconomic institutions provide to citizens should mediate the effects of that overpowering culture and as a result should yield lower violent crime rates.

Weakened social controls can be further explored by examining the influence of society whereby inequality and

deprivation lead to high rates of violence (Currie 1997). A market society also weakens noneconomic institutions that act as buffers against crime. For example, a large percentage of dual-parents income earners may be forced to work long hours to provide the necessities for their children, thus reducing overall social control and weakening the socializing influence exerted on children in society. As social ties become weaker, they contribute to weaker noneconomic institutions and result in lower social support, leading to instability throughout society. Once these noneconomic institutions erode, social control is reduced, providing room for alternative actions that were once reprimanded. A market society that produces a great amount of inequality and does not possess these buffers leaves room for its citizens to stray into criminality (Currie 1997). These theories have been explored extensively, using homicide rates as the dependent variable, and research has found that capitalist ideology is a positive predictor of higher homicide rates when non-economic institutions are weakened. This study proposes that these same ideas can be applied to terrorism as a form of violent crime as well (Antonaccio and Tittle 2007).

Empirical Research Testing Institutional Anomie Theory

Attempts to assess the empirical validity of IAT have

proved difficult. Missing data and nonexistent data on noneconomic variables for desired time periods and units of analysis add to the difficulty in designing and carrying out a complete test of IAT. Partial tests by Chamlin and Cochran (1995) and Maume and Lee (2003) have been conducted using states and counties as their units of analysis. Only a small number of empirical tests of IAT have been conducted using cross-national data.

In their empirical test of institutional anomie theory, Chamlin and Cochran (1995) use data from the 50 United States to test the influence of economic deprivation and noneconomic institutions. They include indicators of three noneconomic institutions in their analyses: family disruption, participation in religious organizations, and voter participation, while both race and age were used as control variables. This particular study of institutional anomie theory found that high levels of participation in religious organizations, low levels of family disruption, and high levels of voter participation reduced the effects of economic deprivation on property crime rates.

Maume and Lee (2003) expand on the findings of Chamlin and Cochran concerning social institutions and anomie theory. Instead of states, Maume and Lee choose counties as their unit of analysis; and, instead of property crime,

they choose homicide rates as their dependent variable. They include income inequality, voter participation, religious participation, average educational expenditure, divorce rate, and social-welfare generosity as measures of noneconomic institutions. Last, Maume and Lee attempt to develop hypotheses and explanations for the mediation of these noneconomic institutions between "economically motivating pressures and instrumental violence" (2003:1137). Their results demonstrate that counties with high rates of voter participation, high levels of religious participation, and low to moderate welfare generosity, had lower rates of total homicides, whereas counties with high divorce rates were associated with high rates of total homicides.

Pratt and Godsey (2003) conducted a cross-national test looking at the effects of social support and inequality on homicide rates. They found that high levels of economic inequality were associated with higher rates of homicide. They also found a strong, significant, negative association between social support and economic inequality, thus concluding that the effects of inequality on homicide rates is reduced by the presence of institutions that exert strong social support.

When noneconomic institutions, such as religion,

family, and educational systems are weak, they are unable to mediate the relationship between economic variables--such as inequality and deprivation, and high crime rates. Thus, in countries where noneconomic institutions do not have a strong foundation within society, crime will be pervasive because of weaker social controls and meager social support. For the purpose of this study, terrorism is conceptualized as a form of violent criminal activity, thus making it a dependent variable worthy of exploration using institutional anomie theory as a theoretical framework.

Terrorist Incidents as a Form of Violence

Recently sociologists have begun to analyze terrorism and terrorist incidents in relation to the capitalist world economy. The majority of research done in this realm has focused on a handful of regions or has employed a case-study approach focusing on one region or country at a time (Greenbaum, Dugan, LaFree 2007; Koseli 2006). A study concerning Italian provinces examined the impacts of terrorism on the local economy (Greenbaum et al. 2007:1093). The researchers found that after terrorist attacks were carried out in Italy, there was a reduction in business formation and expansion in the following year. Terrorist attacks were found to affect the economy of the

local region in multiple ways--including “tourism, foreign direct investment, gross domestic income and stock prices, trade, and international business” (Greenbaum et al. 2007:1093).

In a 2006 study of Turkey, a relationship was found among

> the percentage of population living below the poverty line, unequal distribution of some government resource. . .and unequal distribution of public investment (Koseli:xii).

Findings also showed that highly populated areas and areas with large populations of youth are related to higher levels of terrorist incidents (Koseli 2006:xii). Capitalism and globalization have brought about positive changes, advances in technology, communication, and business. Despite advances that have assisted in connecting people to others around the globe, terrorism has also been able to grow and become a pressing threat due to globalization. Terrorist groups have been able to become increasingly dangerous due to the availability of weapons on the black or underground market (Koseli 2006:1).

Violence in other parts of the world, particularly Latin America, have been linked to drastic changes in the social environment that make conditions favorable for different types of violent crime to occur (Williamson

1965). The question of "what type of society is most likely to produce violence" is examined through a close look at Colombian social institutions--including religion, economics, family, and education (Williamson 1965:35). The findings conclude that a breakdown in traditional institutions left many people parentless and illiterate and without a functional religious program to help mediate the effects of the violent conflict between two political parties in the country. Without proper social institutions to provide assistance to citizens in helping them cope with their frustration and anger, violence has continued in rural Colombia.

Other research in Latin America has found support for these same findings. A study of class structures in Latin America found that "less economic inequality is generally associated with lower violent crime and a smaller increase, or even decline, of crime rates over time" (Portes and Hoffman 2003:68). As inequality increases in these areas, the rates of both crime and victimization have also risen, supporting sociological literature concerning economic deprivation and outbreak of crime (Portes and Hoffman 2003; Merton 1968; Sullivan 1989).

Other research projects concerning terrorism have focused on terrorist acts carried out by specific groups

and made use of the RAND database containing information regarding terrorist incidents globally. These studies use the following definition of terrorism:

> by the nature of the act, not by the identity of the perpetrators. Specifically, terrorism is violence calculated to create an atmosphere of fear and alarm to coerce others into actions they would not otherwise undertake, or refrain from actions they desired to take (RAND 2009).

Using the RAND database, evidence was found that Islamist-affiliated groups were no more likely to participate in terrorist attacks that involved high fatality rates, when controlling for al-Qaeda, than other terrorist organizations (Piazza 2009:62). The Piazza study adds an important element to the current body of literature concerning terrorism by dispelling the common misconception that many terrorist attacks are initiated by Islamist-affiliated groups.

Other studies using RAND center on globalization in relation to terrorism (Sands 2007). The findings include a strong relationship between terrorism and technology in relation to a country's vulnerability to terrorist incidents. The study also dispels the common misconception that terrorism is a Muslim problem and finds that the percentage of the population that is female is positively related to terrorist incidents. The author concludes that

these findings could be due to the higher percentage of women surviving as compared to the male population being lost to war or terrorist incidents.

Further research found that failed or failing states, those that cannot provide the essentials for well-being to their citizens--such as “personal security, economic stability, and functioning bureaucratic and judicial institutions”--are more likely to host terrorist groups and be targeted by more terrorist attacks than thriving states (Piazza 2008:469). Research along the same lines employed data from the GTD and found similar results showing a strong correlation between failed states and terrorist attacks (LaFree, Dugan, and Fahey 2008:54). These findings are particularly important to countries that are actively trying to assess present and future terrorist threats upon their borders and territories. The United States has created the Department of Homeland Security since the attacks of September 11, 2001 to serve as a protective force against terrorist incidents; such information can assist officials in analyzing intelligence concerning failed or failing nation-states.

Other studies using the GTD have focused on democratic countries and their vulnerability to attack by terrorist organizations (Dugan and Young 2008). This study found

that countries are more likely to experience terrorist incidents as the number of “veto players,” or “an individual or collective actor whose agreement is required for a policy decision” increases (Dugan and Young 2008;19). A study concerning airline hijackings combining data from the Federal Aviation Administration, RAND, and the GTD found that newly implemented policies making airline hijackings a crime, along with technological advances in metal detection and increased checkpoints, deterred such terrorist incidents (Dugan, LaFree, and Piquero 2005).

Last, a study examining inequality’s influence on terrorist incidents has attempted to asses whether “poverty, inequality, and poor economic development are root causes of terrorism” (Piazza 2006:159). The author found no significant relationship between economic development measures and terrorism. The current study employs similar variables such as life expectancy to test similar hypotheses; however, more of the emphasis is on noneconomic institutions’ mediating effects on inequality and terrorism versus the emphasis in the Piazza study that relied more on political factors.

This study attempts to fill the gaps in the sociological and criminological literature concerning terrorism by focusing on global terrorism in relation to a

society's economic and noneconomic institutions. While other theories have been used to explain terrorist incidents, this study uses IAT as the theoretical grounding. Thus far, IAT has been used to explain violent crime incidents such as homicide and robbery but has not been used to explain terrorism.

CHAPTER III

RESEARCH METHODS

The Global Terrorism Database covers recorded terrorist incidents spanning from 1970 to 1997 and provides data on over 67,000 incidents worldwide. The database was originally compiled by the Pinkerton Corporation's Global Intelligence Service (PGIS) using

> a variety of sources, including wire services…U.S. State Department reports, other U.S. and foreign government reports, U.S. and foreign newspapers, information provided by PGIS offices around the world, occasional inputs from such special interests as organized political opposition groups, and data furnished by PGIS clients and other individuals in both official and private capacities (LaFree, Dugan, Fogg, Scott 2006:1).

The Global Terrorism Database includes nine categories of incident types: assassination, bombing, facility attack, hijacking, kidnapping, maiming, assault, mass disruption, and arson (LaFree, Dugan, Fahey 2008). The resulting database is longitudinal in structure and uses a broad definition of terrorism:

> the threatened or actual use of illegal force and violence to attain a political, economic, religious or social goal through fear, coercion or intimidation (LaFree et al. 2006:21).

However the database is not without its weaknesses, including media bias, misinformation, lack of complete information, and missing or lost data. The Global Terrorism Database is unique as compared to other terrorism databases in that it includes both international and

domestic incidents. As compared to two other terrorism databases, RAND and ITERATE, the GTD includes information on both domestic and international attacks and continues in collecting and coding information regarding attacks from 1970 to present day, thus making it the most comprehensive and reliable source on terrorist incidents globally (U.S. Department of Justice 2006).

The directors of the Global Terrorism Database state that future projects using their database should link in secondary databases to "estimate the effects of political, economic, and social indicators on terrorism outcomes" (LaFree et al. 2006:79). This study represents an application of this suggestion by aggregating terrorist incident counts to the nation-state level and linking this information with data from the World Bank's Development Indicators, the United Nations, the University of Texas Inequality Project, and the Central Intelligence Agency.

Missing data are very problematic in cross-national research (Marshall and Block 2004). For example, the World Bank Development Indicators database provides researchers with more than 400 social and economic variables for each country from 1960 to the present. However, due to

Table 1: Dependent, Independent, and Control Variable Descriptions

Variables	Source
Dependent	
terrorist incidents	Global Terrorism Database
Independent	
inequality	University of Texas Inequality Project (2005)
health care index	World Bank Database (2006)
# of hospital beds	
life expectancy	
physicians per 1,000	
# of divorces	United Nations Statistics Division (2009)
Control	
% urban	World Bank Database (2006)
religious dominance	Central Intelligence Agency (2009)
Judeo-Christian	
Muslim	
other	
% female	World Bank Database (2006)
% of population aged 0-14	World Bank Database (2006)

significant amounts of missing data across years and among countries, many variables are unusable for quantitative analyses. Variables used for this research represent those that were available and relevant for an empirical testing of institutional anomie theory.

The combined database provides variables used to examine the influence of inequality on terrorist incident counts among 200 countries for the decades of the 1970s, 1980s, and 1990s. These analyses examine the influence of inequality on terrorist counts net of controls. Models also examine the influence noneconomic institutions have in mediating the relationship between inequality and the

number of terrorist incidents for each time-period. The information from The World Bank was used in combination with the Global Terrorism Database, the UN, the CIA, and the UTIP to examine the extent to which economic and social factors influence terrorist-incident counts for the decades under consideration.

Dependent Variable: Terrorist-incident Counts

To begin the process of getting the data all in the same format with coordinating identification numbers the GTD was first downloaded in its original form and then exported into an Excel file. Terrorist incident counts were the only information gleaned from the GTD. All countries in the Excel file were given an identification number. The raw data was then averaged by time periods dating from 1970 to 1979, 1980 to 1989, and 1990 to 1997. What resulted were averaged national level terrorist incident count data for the three time periods included in this study. An overview of all of the variables used in this study is provided in Table 1.

Independent Variables

The independent variable in this study is inequality as measured by the UTIP (2009), which quantifies the manufacturing-pay inequality in each country to estimate household inequality in each country (Galbraith and Kum

2004:1). The inequality index is based on the Industrial Statistics database and contains over 3,200 observations from 1963 to 1999 (Galbraith and Kum 2004). The advantage of using the UTIP as a measure of inequality is that it covers over 160 countries over three or four decades making the database uniform across time and space (Galbraith 2008). The UTIP uses GINI coefficients and the calculated values range from 0 to 100. The main premise of the UTIP states that national economies are built upon institutions and thus consistent observations of part of the distribution moving through the economy is sufficient enough to surface the movement trends of the distribution throughout an economy as a whole (Galbraith 2008).

Data from the UTIP were downloaded directly into an Excel spreadsheet and all data were averaged across the three time periods to provide data for the 1970s, 1980s, and 1990s. The influence of inequality on terrorist-incident counts was assessed first, and then noneconomic institutional measures were added to the ordinary least squares regression models to determine whether they mediate the influence of inequality on terrorist incidents.

Several variables were used to measure the influence of one noneconomic institution, health care. Indicators such as life expectancy, number of hospital beds, and

number of physicians per 1,000 were used to construct this index. These variables were pulled from the World Bank Database World Development Indicators CD. These variables were chosen to represent health care as a social institution based on the fact that they provided information consistently on all three time periods and for a large sample of countries included in the study as well. These variables were pulled for the years 1970 to 1997 and then averaged across the time periods of 1970 to 1979, 1980 to 1989, and 1990 to 1997. Next, a principal-components analysis was run on the three original variables. The fact that they all loaded on one factor with an Eigenvalue between 2.2 and 2.4 explained 76 percent to 80 percent of the variance. These results are presented in Tables 2 (1970s), 3 (1980s), and 4 (1990s).

Table 2: Principal Components Analysis for Health Care Index for 1970s

	Eigenvalue	% of Variance
Component 1	2.413	80.424
Component 2	0.345	11.484
Component 3	0.243	8.092
Component Matrix:	**Component 1**	
# hospital Beds in 1970s	0.875	
life expectancy in 1970s	0.909	
# physicians per 1,000 in 1970s	0.907	

Table 3: Principal Components Analysis for Health Care Index for 1980s

	Eigenvalue	% of Variance
Component 1	2.381	79.377
Component 2	0.458	15.279
Component 3	0.160	5.344
Component Matrix:	**Component 1**	
# hospital Beds in 1980s	0.916	
life expectancy in 1980s	0.820	
# physicians per 1,000 in 1980s	0.932	

This research also examines the influence of a second noneconomic institution, the family, and its potentially mediating effects between inequality and terrorist-incident counts. The United Nations Statistics Division (2009) had the most complete records on both number of marriages and number of divorces in each country included in the analyses from the 1970s to the 1990s. The information was contained in spreadsheets available online. These spreadsheets were

Table 4: Principal Components Analysis for Health Care Index for 1990s

	Eigenvalue	% of Variance
Component 1	2.282	76.080
Component 2	0.490	16.260
Component 3	0.228	7.594
Component Matrix:	**Component 1**	
# hospital Beds in 1990s	0.869	
life expectancy in 1990s	0.822	
# physicians per 1,000 in 1990s	0.923	

printed and the data for divorces and marriages for each year were manually typed into an Excel file containing the country identification number used in the GTD database. Data from each year, between 1970 and 1997 were typed into the spreadsheet for both marriages and divorces. Averages were then obtained for the 1970s, the 1980s, and the 1990s. The number of marriages in each country was eventually eliminated from this study because the number of divorces seemed to capture the true state of the familial institution in each respective country, and the divorce variable contained the largest number of cases for statistical analysis.

Each country in each of the spreadsheets for inequality, health-care index, and number of divorces, was then given the same corresponding identification numbers as in the terrorist-incident database. Next, each individual

worksheet containing the averages for the 1970s, 1980s, and 1990s was imported into SPSS, along with the terrorist-incident averages for the respective time periods. Each database was linked together using the ID number of the countries, thus providing an SPSS database with the key variables for the 1970s, 1980s, and 1990s.

I originally intended to include education as a variable in this study. The preliminary plan was to use data from the World Bank Database concerning school enrollment and literacy rates as the indicators for examining the strength of education as a noneconomic social institution. However, data on education indicators were only available for one year, 1991. Therefore, the education indicators were eliminated from this study.

Control Variables

For the purposes of this study, several indicators were used as control variables. These variables include the following indicators: 1) the percent of the population aged zero to fourteen, 2) the percent of the population residing in urban areas, 3) the percent of the population that is female, and 4) religious dominance.

The World Bank World Development Indicators CD provided the following control variables: the percent of the population residing in urban areas, the percent of the

population that is female, and the percent of the population aged zero to fourteen. After being extracted from the CD and imported into Excel, data for each variable were again averaged across the three time periods included, given matching identification numbers by country, and imported into SPSS.

Data from the remaining control variable, religious dominance, came from the Central Intelligence Agency (CIA) (2009). A list of country names and identification numbers were typed into an Excel file, and then each country was coded according to the religious affiliation of the majority. Each country was chosen from the pull-down menu available online and hand coded for religious dominance. A code of "1" was given to those countries classified as predominantly Muslim, a code of "2" was given to those countries that are predominantly Judeo-Christian, and the code "3" was given to countries who fell into the category of "other." This "other" affiliation included those countries whose population majority were Buddhist, Hindu, or Daoist; held indigenous beliefs; had no affiliation; or had a mixed affiliation. Religious affiliation is used as a dummy variable in multivariate ordinary least squares regression analyses, with the category of "other" used as the reference category.

All of the spreadsheets containing data from the control variables were then imported into SPSS. All identification numbers of all variables were double checked to ensure that control-variables data would link with the aggregated data file containing the terrorist-incident counts and the noneconomic institutional measures for the 1970s, 1980s, and 1990s.

Hypotheses

The hypotheses of this study include:

H1: Countries with higher level of inequality will have higher counts of terrorist incidents.

H2: Countries with strong noneconomic institutions will have lower terrorist-incident counts.

H3: The influence of inequality on terrorist-incident counts will be mediated by noneconomic institutional structures such as health care and family.

Five ordinary least squares regression models were constructed for each of the decades under evaluation. The data for each decade are contained in separate tables. For each decade, Model 1 displays the influence of inequality on terrorist-incident counts. Model 2 incorporates the control variables: percent of urban population, religious dominance, percent of females in the population, and percent of the population aged zero to fourteen. Model 3 adds the health-care index, which was constructed using a principal-components analysis with a varimax rotation and

included the variables (a) number of hospital beds, (b) life expectancy, (c) and physicians per 1,000 in the population. Model 4 combines the family indicator, measured by the number of divorces in each country, along with the inequality variable and control variables. Last, Model 5 combines the inequality variable, the control variables, and both the health-care index and divorce variable to assess the independent influence of each variable net of controls.

In Model 3, Model 4, and Model 5 the analyses assess whether the effects of inequality on terrorist-incident counts are mediated by the noneconomic institutions net of controls. If these variables mediate the effects of inequality, the influence of inequality evident in Models 1 and 2 should be weakened substantially in Model 3, Model 4, and Model 5 when the noneconomic institutions are added to the models. The analysis was repeated for each of the three time periods: 1970-1979, 1980-1989, and 1990-1997.

Chapter IV

RESULTS

Although most of the relationships between the independent variables and terrorist-incident counts in countries are not significant in Tables 4, 5, and 6, there are patterns worth noting. Two hundred countries were included in the entire database. After all data were linked together, some countries were excluded due to missing data. The sample sizes for each time period dropped significantly as a result of this. The countries included in the final analyses for each time period are included in Appendix A. These trends and patterns may have been statistically significant if a larger sample of countries with complete data was available.

For the time period of 1970 to 1979 as inequality increased in countries, terrorist incidents decreased, as shown in Table 6. However, the relationship is not statistically significant at the $p<.10$ level. When the control variables are added to the analysis in Model 2, the nonsignificant association between inequality and terrorist-incident counts remains. As the percent of the

population located in urban areas and the percent of the population that is female increase, so do terrorist-incident counts, although these relationships are non-significant as well. Compared to countries that had "other" religious dominance, those who were predominantly Judeo-Christian or Muslim saw a nonsignificant increase in terrorist activity as well. The percent of the population aged zero to fourteen is nonsignificantly and negatively associated with terrorist incidents. Thus, where there is a large percentage of people aged zero to fourteen in the population, terrorist-incident counts decrease.

The health-care index is added to the regression in Model 3. The association between inequality and terrorism remains, but it continues to be a nonsignificant relationship. Moreover, results show as the health-care index increases in countries, terrorist-incident counts decrease. While these results do support the main tenets of IAT, the relationship between the health-care index and terrorist-incident counts is not statistically significant.

In Model 4 the family indicator, number of divorces, is added to the regression. Here the association between inequality and terrorism changes. As inequality in countries increases, so do the number of terrorist-incident counts when the control variables and the number of

divorces in each country are held constant. Although this association is not statistically significant, it is worth noting the change from Model 1. In Model 4 as the number

Table 5: Descriptive Statistics for 1970s, 1980s, and 1990s

	1970s (N = 47)				1980s (N = 53)				1990s (N = 57)			
	Mean	Std. Dev	Min.	Max.	Mean	Std. Dev	Min.	Max.	Mean	Std. Dev	Min.	Max.
Dependent Variable												
terrorist incidents	6.57	12.81	0.00	54.30	23.97	58.14	0.00	136.90	19.86	40.89	0.29	62.00
Independent Variables												
inequality	40.79	6.82	26.11	50.98	40.15	7.51	26.06	52.26	41.02	8.02	18.24	55.07
health care index	0.66	1.03	0.04	2.74	0.32	0.74	0.02	1.99	0.54	0.69	0.06	1.98
# of divorces	47710.52	169090.84	10	907200	6242.63	20461.68	268	1176000	50091.16	157461.02	388	1156500
Control Variables												
% urban	56.28	23.54	24.68	100.00	62.80	21.36	34.93	100.00	68.23	15.93	36.37	100.00
Judeo-Christian	0.68	0.47	0.00	1.00	0.68	0.47	0.00	1.00	0.72	0.45	0.00	1.00
Muslim	0.21	0.41	0.00	1.00	0.19	0.40	0.00	1.00	0.18	0.38	0.00	1.00
% female	49.92	1.44	44.13	53.79	49.99	1.42	43.09	53.34	50.39	2.04	40.78	53.81
% of population aged 0-14	36.95	9.41	20.47	46.30	31.81	9.67	17.59	39.04	31.89	9.95	16.71	49.51

of divorces a country has decreases, so do the number of terrorist incidents to which a country falls victim, though this association also is not statistically significant. This illustrates that the institution of family is not effective in mediating the effects of inequality. These findings do however offer support for hypothesis two regarding strong non-economic institutions and lower terrorist incident counts.

In Model 5 when all of the variables are included in the regression model, inequality is negatively associated with terrorist-incident counts, as witnessed in Models 1, 2, and 3. As the health-care index increases, so do

terrorist-incident counts, but not in a statistically significant way. Most noteworthy, as the number of divorces increases in the countries, so do terrorist-

Table 6: Ordinary Least Squares Regression Examining the Influence of Inequality, Non-Economic Institutions, and Controls on Terrorist Incident Counts for 1970s (N = 47)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B / s.e	BETA	B / s.e	BETA	B / s.e	BETA	B / s.e	BETA	B / s.e	BETA
Inequality	-0.154	-0.082	-0.076	-0.040	-0.092	-0.049	0.192	0.081	-0.006	-0.003
	(0.28)		(0.52)		(0.52)		(0.56)		(0.47)	
Controls										
% urban			0.003	0.005	0.028	0.051	0.015	0.018	0.003	0.005
			(0.14)		(0.15)		(0.18)		(0.13)	
Judeo-Christian			5.111	0.188	5.737	0.211	5.617	0.145	3.827	0.141
			(6.57)		(6.78)		(9.73)		(6.14)	
Muslim			6.592	0.213	6.815	0.220	6.252	0.141	4.746	0.153
			(7.84)		(7.93)		(11.47)		(7.19)	
% female			0.776	0.087	0.577	0.065	0.292	0.025	0.724	0.081
			(1.93)		(1.99)		(2.62)		(1.80)	
% of population aged 0-14			-0.058	-0.043	-0.221	-0.163	-0.176	-0.100	0.219	0.161
			(0.43)		(0.57)		(0.51)		(0.53)	
Non-economic institution measures										
health care index					-2.140	-0.173			0.902	0.073
					(4.70)				(4.35)	
# of divorces							0.000	0.224	0.000	0.488*
							(0.00)		(0.00)	
Intercept	12.864		-31.962		-15.827		-14.954		-43.538	
	(11.53)		(110.01)		(116.64)		(145.96)		(105.59)	
R^2	0.007		0.032		0.038		0.076		0.237	

. $p \leq 0.10$
* $p \leq 0.05$

each other in Models 1 and 2 but became positively associated with each other when the noneconomic institutions were added in Models 3 and 4, suggesting the opposite of a mediating effect. Again, due to the lack of statistical significance, these results are mainly suspect.

The results for the time period 1980 to 1989 are presented in Table 7. Model 1 displays a significant positive relationship between inequality and terrorist-incident counts. As inequality increases, so do terrorist incident counts, supporting hypothesis one. Model 2 adds the control variables. Although the positive association between inequality and terrorism remains, it is no longer significant. As compared to countries with “other” religious dominance, Judeo-Christian countries have a positive, nonsignificant, association with terrorist incidents. However, predominantly Muslim countries have a nonsignificant negative association with terrorist counts which is the opposite trend that was shown for the time period of the 1970s. The percent of the population that is female has a positive association with terrorist-incident counts, but it is not a statistically significant relationship. Finally, the percent of the population aged zero to fourteen has a positive and statistically significant association with terrorist-incident counts.

In Model 3 the same positive, nonsignificant relationship between inequality and terrorist incident counts remains. The major change in Model 3 as compared to Model 2 is that the relationship between the percent of the population that falls between the ages of zero and fourteen is still positive, but is nonsignificant. When the health care index is added to this model, there is a non-significant, negative relationship, which means that as the health-care index increases in the sample of countries, terrorist-incident counts are decreasing.

The divorce indicator is added in Model 4, and two major changes to the model are evident. First, the percent of the population aged zero to fourteen is significant again and there is a nonsignificant, positive association between number of divorces and terrorist-incident counts.

Model 5 shows much of the same trends as in the previous models. The population-age demographic is no longer significant. However, there remains a negative, non-significant association between the health-care index and terrorist incidents and a positive nonsignificant association between the number of divorces in a country and terrorist-incident counts. It appears that the health-care index included in this study may have its own independent negative influence on terrorist-incident

counts, which supports hypothesis 2. However, the health-care index is not mediating the relationship between inequality and terrorist-incident counts because the Beta

Table 7: Ordinary Least Squares Regression Examining the Influence of Inequality, Non-Economic Institutions, and Controls on Terrorist Incident Counts for 1980s (N = 53)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B / s.e	BETA	B / s.e	BETA	B / s.e	BETA	B / s.e	BETA	B / s.e	BETA
Inequality	2.09	0.270*	0.636	0.082	0.455	0.059	0.293	0.030	0.453	0.059
	(0.27)		(1.44)		(1.46)		(1.78)		(1.48)	
Controls										
% urban			0.322	0.118	0.449	0.165	0.061	0.017	0.450	0.165
			(0.45)		(0.47)		(0.56)		(0.49)	
Judeo-Christian			3.261	0.026	11.131	0.090	12.141	0.077	11.098	0.090
			(24.92)		(26.31)		(30.53)		(26.70)	
Muslim			-48.441	-0.329	-43.557	-0.296	-51.317	-0.270	-43.623	-0.296
			(30.03)		(30.51)		(36.68)		(31.17)	
% female			1.631	0.040	1.417	0.035	5.496	0.106	1.410	0.035
			(7.26)		(7.27)		(8.93)		(7.37)	
% of population aged 0-14			2.836	0.472*	1.754	0.292	3.390	0.474*	1.762	0.293
			(1.39)		(1.81)		(1.61)		(1.90)	
Non-economic institution measures										
health care index					-20.677	-0.263			-20.639	-0.263
					(21.93)				(22.32)	
# of divorces							0.000	-0.028	0.000	0.002
							(0.00)		(0.00)	
Intercept	-59.925		-186.598		-141.904		-385.387		-141.799	
	(42.61)		(393.29)		(396.60)		(481.06)		(401.15)	
R^2	0.073		0.187		0.202		0.194		0.202	

. $p \leq 0.10$
* $p \leq 0.05$

value for inequality does not change in a meaningful way between Model 2 and Models 3, 4, and 5 in Table 7.

The results for the time period 1990 to 1997 are presented in Table 8.

In Model 1 a statistically significant, positive

association is shown between inequality and terrorist incidents. In Model 2 this association is still positive but is no longer significant when the controls are added to the regression. However, unlike the patterns witnessed in Table 7, the Beta value drops slightly (from 0.252 to 0.225) in Model 2 when the controls are added. In Table 7 the Beta value for inequality dropped from 0.270 to 0.0823 when the controls were added. The percent of the population that resides in urban areas, those countries having Judeo-Christian or Muslim religious dominance, the percent of the population that is female, and the percent of the population aged zero to fourteen all have positive, nonsignificant associations.

Model 3 adds the health-care index and the results show a significant negative association between the health-care index and terrorist-incident counts. These findings mean that despite controlling for urbanization, religious dominance, female population, and age, when health care is a strong institution in society, terrorist-incident counts decrease for that country, thus providing support for hypothesis 2. More important, there is support for hypothesis 3 for the first time. The factors included in the health care index are mediating the effects of inequality on terrorist incident counts. In Model 2 the

Beta value showing the influence of inequality on terrorist-incident counts was 0.225. When the health-care index is added in Model 3, the Beta value for inequality

Table 8: Ordinary Least Squares Regression Examining the Influence of Inequality, Non-Economic Institutions, and Controls on Terrorist Incident Counts for 1990s (N = 57)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	B / s.e	BETA	B / s.e	BETA	B / s.e	BETA	B / s.e	BETA	B / s.e	BETA
Inequality	1.288	0.252*	1.146	0.225	0.457	0.090	1.234	0.239	0.485	0.095
	(0.67)		(0.83)		(0.88)		(0.81)		(0.894)	
Controls										
% urban			0.000	0.000	0.221	0.086	0.016	0.007	0.208	0.081
			(0.41)		(0.41)		(0.36)		(0.416)	
Judeo-Christian			8.141	0.090	11.712	0.130	8.195	0.092	11.516	0.128
			(19.36)		(18.95)		(17.62)		(19.128)	
Muslim			15.100	0.142	23.275	0.218	15.863	0.143	23.184	0.218
			(27.16)		(26.78)		(25.83)		(27.031)	
% female			1.153	0.057	3.961	0.197	1.555	0.074	3.863	0.193
			(3.704)		(3.89)		(3.552)		(3.935)	
% of population aged 0-14			0.665	0.162	0.609	0.148	0.736	0.184	0.632	0.154
			(0.59)		(0.58)		(0.559)		(0.591)	
Non-economic institution measures										
health care index					-19.763	-0.334*			-19.604	-0.332*
					(10.23)				(10.330)	
# of divorces							.0000	0.056	.0000	0.046
							(0.000)		(0.000)	
Intercept	-32.984		-114.976		-234.812		-142.376		-231.442	
	(27.81)		(218.34)		(221.46)		(207.57)		(223.72)	
R^2	0.064		0.091		0.156		0.108		0.158	

+ p ≤ 0.10
* p ≤ 0.05

drops to 0.090. Moreover, the Beta value for the health-care index is .0334 and is significant at p<.10 level. These patterns clearly demonstrate the mediating influence of health care on the relationship between inequality and terrorist-incident counts.

Model 4 shows many of the same trends as seen in Model 2; however, when the measure of the institution of family is included in the regression, the result is a positive, nonsignificant association between number of divorces and terrorist-incident counts. Despite controlling for urbanization, religion, sex, and age of the population, as the number of divorces increase in a country, so do the countries' terrorist-incident counts.

Model 5 combines all of the information from the previous models. The health-care index is still negatively associated and significant as seen in Model 3. The family component is also positively associated but still remains nonsignificant in relation to terrorist incidents. When all of the control variables are taken into account, as the health care in a country increases, terrorist incidents decrease; and as divorces increase, so do terrorist incidents. Health care, therefore, is effectively mediating the effects of inequality in this model because the Beta for inequality drops from Model 4 (0.239) to Model 5 (0.095).

Support for hypothesis one which stated that, countries with higher levels of inequality will have higher counts of terrorist incidents, was found for two time periods, the 1980s and the 1990s. In both the 1980s and

1990s as inequality increased, so did terrorist incident counts. The time period dating from 1970 to 1979 is the exception, wherein results indicated that inequality and terrorist incidents had a negative association although the results were not statistically significant, likely due to the small sample size (N=47).

Support for hypothesis two, countries with strong non-economic institutions will have lower terrorist-incident counts, was found in all three of the time periods examined. For the 1970s although the findings are not statistically significant, Model 3 shows that, as the health care index increases in each country, terrorist-incident counts decrease. In Models 4 and 5 as number of divorces decrease in a country, so do terrorist incident counts. For the 1980s in Models 3, 4, and 5 the same trends hold although these findings are not statistically significant. Last, for the time period of the 1990s the health-care index, which is statistically significant, and the number of divorces variable are both showing the same trends for the 1970s and 1980s. Although some of the findings are not statistically significant, some support is found for hypothesis two in that countries that have greater access to health care and have fewer divorces destroying the family units have fewer terrorist-incident

counts.

Support for hypothesis three, the influence of inequality on terrorist-incident counts will be mediated by noneconomic institutional structures such as health care and family, was found only in the table for the 1990s time period. For this time period only the health-care index effectively mediated the effects of inequality on terrorist-incident counts and did so in Model 3 and 5. The noneconomic institution of family, measured as number of divorces, did not effectively mediate the effects of inequality in any of the models or for any of the time periods. These findings are highly significant because of the policy implications. If a country provides adequate resources and access to health care for its citizens, that country will experience fewer terrorist-incident counts than a country that chooses not to provide access to those services for its citizens.

Due to missing and lack of data for the time span of this study, other noneconomic institutions were not included. However, had other institutional measures such as education, polity, religion, and voter participation been added to this study, they might have also mediated the relationship between inequality and terrorism and offered further support for IAT.

CHAPTER V

CONCLUSION

As terrorism continues to be a topic of interest for citizens, policy makers, government leaders, businesses, and investors, research concerning the topic will become imperative. This research project has contributed to the body of knowledge from which those people mentioned above can draw conclusions regarding future policymaking, government spending, financial investments, and intelligence analysis. With this research people not only in the field of sociology will have a better understanding of terrorism, but citizens across the globe will become more educated on why terrorism occurs and how to prevent it. This research also raises questions regarding capitalism and globalization and its many effects on cultures and groups of marginalized individuals across the globe.

This study offers several contributions to the areas of both sociology and criminology by attempting to apply the theoretical framework provided by IAT on terrorist-incident counts as a form of violent crime. As recommended in past terrorism literature, this study also attempted to use the GTD for aggregate research. This study also

attempted to examine empirically terrorism in the context of criminological literature.

Although this work did not find conclusive results to fully support the use of institutional anomie theory on studies regarding terrorism, future studies should further explore using institutional anomie theory as a grounding framework by including indicators of other noneconomic institutions not included in this study. This study did however finding adequate support for health-care as a mediating noneconomic institution for the time period of the 1990s. This study attempted to compare results across three time periods, the 1970s, the 1980s, and 1990s, however this placed heavy restraints on what noneconomic indicators could and could not be included in this study. Missing or lack of data forced the sample sizes in each time period to be quite small.

Future research should continue to look at terrorism as a form of violent crime. Institutional anomie theory is an appropriate theoretical framework for the study of terrorism. Indicators on education, religion, and polity in addition to those included here should be added to future research projects to make results more robust. Future research should also attempt to include a larger sample size of countries if possible.

Several policy implications for the application of IAT on terrorism were found in this study, including findings concerning both health care and family. Results support past literature concerning IAT in that strong social support through health care and weak family institutions through divorce have effects on violent crime. Strong support for health care as a form of mediation between inequality and terrorist-incident counts was found for one of the decades included in the study. The implications for these findings are of particular interest to policy makers concerned with decreasing forms of violent crime. When health-care factors--such as hospital beds, physicians, and life expectancy--are provided to citizens, this study effectively demonstrated that lower terrorist incident counts follow.

Although this study has made several contributions it has limitations as well. The small sample sizes in each of the time periods (47 for the 1970s, 53 for the 1980s, and 57 for the 1990s), along with missing data contributed to the lack of statistically significant findings. As a result this study is purely exploratory and not explanatory given these major disadvantages.

Future research should continue to use both the GTD for terrorism research and IAT as a grounding theoretical

framework. Better data collection on terrorism and other forms of violent crime globally will contribute to larger sample sizes and more statistically significant figures. Alternative sources other than the World Bank Development Indicators should be relied on for variable indicators for both historical and quantitative research.

As terrorism continues to plague the minds of people across the globe more research will be needed for, governments, individuals, and companies, to make wise decisions. This research project is a step in the right direction in exploring the subject of terrorism further.

APPENDIX A

Sample of Countries Included in Each Time Period

1970s	1980s	1990s
Australia	Albania	Armenia
Austria	Australia	Austria
Barbados	Austria	Azerbaijan
Belgium	Bahamas	Bahamas
Canada	Barbados	Belgium
Cuba	Belgium	Bosnia-Herzegovina
Cyprus	Bulgaria	Bulgaria
Fiji	Canada	Canada
France	Chile	Chile
Greece	Costa Rica	Croatia
Iceland	Cyprus	Czech Republic
Israel	Denmark	Denmark
Jamaica	France	Finland
Japan	Greece	France
Kuwait	Hong Kong	Germany
Libya	Iceland	Greece
Macao	Israel	Hungary
Malaysia	Japan	Iceland
New Zealand	Kuwait	Japan
Panama	Luxembourg	Kuwait
Poland	New Zealand	Kyrgyzstan
Singapore	Norway	Latvia
Sweden	Panama	Luxembourg
Tonga	Poland	Macedonia
Trinidad and Tobago	Portugal	Moldova
United Kingdom	Singapore	Netherlands
United States	Suriname	New Zealand
Uruguay	Sweden	Poland
Venezuela	Trinidad and Tobago	Singapore
	United Kingdom	Slovenia
	United States	South Korea
	Uruguay	Spain
	Venezuela	Sweden
		Ukraine
		United Kingdom
		United States
		Uruguay
		Venezuela

REFERENCES

Antonaccio, Olena and Charles R. Tittle. 2007. "A Cross-National Test of Bonger's Theory of Criminality and Economic Conditions." *Criminology* 45(4):925-55.

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

Central Intelligence Agency. 2009. "The World Factbook." Available at <https://www.cia.gov/library/publications/the-world-factbook/> accessed 4 January, 2009.

Collier, Paul. 2008. *The Bottom Billion: Why the Poorest Countries are Falling and What Can Be Done About It.* NY: Oxford.

Currie, Elliott. 1997. "Market, Crime and Community: Toward a Mid-Range Theory of Post-Industrial Violence." *Theoretical Criminology* 1(2):147-72.

Dugan, Laura, Gary LaFree, and Alex R. Piquero. 2005. "Testing a Rational Choice Model of Airline Hijackings." *Criminology* 43(4):1031-65.

Dugan, Laura and Joseph K. Young. 2008. "Veto Players and Terror." Paper presented at the annual meeting of the ISA's 49th Annual Convention, Bridging Multiple Divides in San Francisco, California.

Friedman, Thomas L. 1999. *The Lexus and the Olive Tree*. New York: Anchor Books.

Galbraith, James K. 2008. "Inequality, Unemployment and Growth: New Measures for Old Controversies." *UTIP Working Paper No. 48;* [on-line access available from the University of Texas Inequality Project]. Available at <http: //utip.gov.utexas.edu/papers/utip_48.pdf> accessed 10 April 2009.

Galbraith, James K. and Hyunsub Kum. 2004. "Estimating the Inequality of Household Incomes: A Statistical Approach to the Creation of a Dense and Consistent Global Data Set." *UTIP Working Paper No. 22*; [on-line access available from the University of Texas Inequality Project]. Available at <http://utip.gov.utexas.edu

/papers.html> accessed 4 January, 2009.

Gates, Bill. 2008. "How to Fix Capitalism." *Time* 172(6):40-43.

Global Terrorism Database. Available at <http://search.icpsr.umich.edu/ICPSR/query.html?nh=25&rf=0&ws=0&ty0=w&tx0=global+terrorism+database&fl0=&col=website&col=abstract&col=series&op0=%2B&tx1=ICPSR&op1=%2B&fl1=archive%3A&ty1=w> accessed 10 May, 2008.

Greenbaum, Robert T., Laura Dugan, and Gary LaFree. 2007. "The Impact of Terrorism on Italian Employment and Business Activity." *Urban Studies* 44(5):1093-1108.

"Investigators Pick through London Carnage." 2005. CNN.com 8 July. Available at <http://www.cnn.com/2005/WORLD/europe/07/07 /london.tube/index.html> accessed 5 August, 2008.

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

Koseli, Mutlu. 2006. *Poverty, Inequality & Terrorism Relationship in Turkey*. Unpublished dissertation. Richmond, VA: Virginia Commonwealth University.

LaFree, Gary and Laura Dugan. "Codebook and Data Documentation." *Global Terrorism Database*. Paper from Laura Dugan, University of Maryland, College Park.

LaFree, Gary, L. Dugan, and S. Fahey. 2008. "Global Terrorism and Failed States." Ch. 6 in *Peace and Conflict*, edited by J.J. Hewitt, Jonathan Wilkenfeld, and Ted Robert Gurr. Boulder, CO: Paradigm.

LaFree, Gary, L. Dugan, H. Fogg, and J. Scott. 2006. "Building a Global Terrorism Database." Available at <http://www.ncjrs.gov/App/Publications/abstract.aspx?ID=235792 > accessed 9 July, 2008.

Marshall, Ineke H. and Carolyn R. Block. 2004. "Maximizing the Availability of Cross-National Data on Homicide". *Homicide Studies* 8(3):267-310.

Maume, Michael and Matthew T. Lee. 2003. "Social

Institutions and Violence: A Subnational Test of Instutional-Anomie Theory." *Criminology* 4:1137-72.

Merton, Robert K. 1938. "Sociological Structure and Anomie". *American Sociological Review* 3(5):672-82.

Messner, Steven F. and Richard Rosenfeld. 2000. *Crime and the American Dream.* Excerpt: pages 1-36 and 60-89. Wadsworth Publishers: Belmont, CA.

Piazza, James A. 2006. "Rooted in Poverty?: Terrorism, Poor Economic Development, and Social Cleavages." *Terrorism and Political Violence* 18:159-177.

------. 2008. "Incubators of Terror: Do Failed and Failing States Promote Transnational Terrorism?". *International Studies Quarterly* 52:469-88.

------. 2009. "Is Islamist Terrorism More Lethal?: An Empirical Study of Group Ideology, Organization and Goal Structure". *Terrorism and Political Violence* 21(1): 62-88.

Portes, Alejandro and Kelly Hoffman. 2003. "Latin American Class Structures: Their Composition and Change during the Neoliberal Era". *Latin American Research Review* 38(1):41-82.

Pratt, Travis C. and Timothy W. Godsey. 2003. "Social Support, Inequality, and Homicide: A Cross-National Test of an Integrated Theoretical Model". *Criminology* 41(3):611-43.

Quinney, Richard. 1980. *Class, State, and Crime*, 2nd ed. New York: Longman.

"RAND: Worldwide Terrorism Incident Database". 2009. [WWW Web Site]. Last updated 13 January, 2009. Available at <http://www.rand.org/ise/projects/terrorismdatabase/about/scope.html> accessed 23 February, 2009.

Sachs, Jeffrey. 2006. *The End of Poverty: Economic Possibilities for Our Time*. NY: Penguin.

Sampson, Robert J. and W. Byron Groves. 1989. "Community Structure and Crime: Testing Social-Disorganization Theory." *The American Journal of Sociology* 94:774-802.

Sands, Allison Gail. 2007. *Terrorism in the 21st Century: The Relationship Between Terrorism and Globalization.* Unpublished master's thesis. Washington, D.C.: Georgetown University.

"September 11: Chronology of terror." 2001. *CNN.com* 12 September. Available at <http://archives.cnn.com/2001/US/09/11/ chronology.attack/index.html> accessed 11 August, 2008.

Shaw, C. R. and Henry D. McKay. 1942. *Juvenile Delinquency and Urban Areas.* Chicago, IL: University of Chigago Press.

Sullivan, Mercer L. 1989. *Getting Paid: Youth Crime and Work in the Inner City.* Ithaca, NY: Cornell University.

The World Bank. 2006. "World Development Indicators." CD-ROM of World Bank Databases.

"Threat Video in Spain Flat Rubble." 2004. *BBC News* 9 April. Available at <http://newsvote.bbc.co.uk/mpapps/pagetools /print/news.bbc.co.uk/2/hi/europe/3613775.stm> accessed 5 August, 2008.

Turk, Austin T. 2004. "Sociology of Terrorism." *Annual Review of Sociology* 30:271-86.

United Nations Statistics Division. 2009. "Demographic Yearbook." Available at <http://unstats.un.org/unsd/demographic/products/dyb/dyb2.htm> accessed 4 January, 2009.

University of Texas Inequality Project (UTIP). 2005. Available at <(http://utip.gov.utexas.edu/)> accessed 4 January, 2009.

U.S. Department of Justice. 2006. "Building a Global Terrorism Database." Prepared by Gary LaFree, Laura Dugan, Heather V. Fogg, and Jeffrey Scott. Available at <www.ncjrs.gov/pdffiles1/nij/grants/214260.pdf> accessed 4 May, 2008.

Williamson, Robert C. 1965. "Toward a Theory of Political Violence: The Case of Rural Colombia." *The Western Political Quarterly* 18(1):35-44.