A Cross-Cultural Analysis of Agnew's General Theory of Crime and Delinquency

Myunghoon Roh - Texas A&M University – San Antonio

Ineke Marshall – Northeastern University

Abstract:-**Objectives:** Recent trends in globalization and the recognition that crime is a worldwide phenomenon have led criminologists to theorize causes of crime across the international context. However, barriers to uniform and systematic data collection across countries have limited the ability to test general theories of crime across multiple contexts. To overcome this limitation, the current study tests Agnew's (2005) general theory of crime and delinquency using data systematically collected from American and Irish adolescents.

Methods: Binomial regression analyses test Agnew's central theoretical propositions by utilizing the United States and Ireland portions of the second phase of the International Self-report Delinquency Study (ISRD-2). Clogg tests are used to identify any differences between international contexts.

Results: The results provide strong supportive evidence for Agnew's (2005) central theses on adolescents' delinquent offending. While most of the adolescents' individual, family, peer, school, and neighborhood factors had similar effects in both countries, some were significantly different between American and Irish adolescents.

Conclusions: The current study supports the notion of generality in Agnew's (2005) theory of crime and delinquency and it's applicability for cross-cultural criminology research. Subtle differences between countries may lend insight into further theoretical refinement of the general theory. Suggestions for future cross-national theory testing related to data collection and analysis are discussed.

INTRODUCTION

Cross-cultural research has prospered in sociology beginning, at least, from Durkheim's proclamation that, "comparative sociology is not a particular branch of sociology; it is sociology itself" (Durkheim, 1938; 139). However, in the field of criminology, globalization's effects on political, social, economic, and technological realms, as well as global recognition that crime is a worldwide phenomenon, have pushed criminologists to take a cross-cultural approach to the study of crime and violence. This sentiment has been echoed by criminological scholars. Bennett's (2004) presidential address highlighted the event of September of 11th in 2001 which increased interests in comparative criminology and criminal justice. In

Addition, the European Union's eastward expansion, modernization of economy, openings of previously restricted border, and widespread transcontinental mobility also has increased interests in the cross-cultural approach (Riechel, 2005).

Although similar but diverse terminologies are being used in the current field of criminology, such as comparative criminology, cross-cultural or cross-national criminology, and international or global criminology, their purposes are mainly to establishing the scientific generalizability of criminological theories or conceptualizations (Miller,

Jennings, Alvarez-Rivera, & Miller, 2008; Botchkovar, Tittle, & Antonaccio, 2009; Kim, Akers, & Yun, 2013). Thus, comparative criminologists contribute to the field by investigating the specific causal mechanisms on criminal activity across different countries (Zhao & Cao, 2010; Hummelsheim, Hirtenlehner, Jackson, & Oberwittler, 2011).

Despite theoretical contributions to the field, contemporary theories were mainly developed in the cultural setting of the United States. Empirical testing of contemporary criminological theories in international contexts is still in its infancy and, thus, the generality of the causes of crime and deviant behavior across different countries – including non-Western countries – remains in question. Thus, given the lack of comparative studies and the inconsistent empirical results from limited cross-cultural research and the lack of general theory testing across independent national contexts (Stamatel, 2009), we test Agnew's (2005) general theory of crime and delinquency across two countries.

OVERVIEW OF THE THEORETICAL FRAMEWORK

Agnew's (2005) General Theory of Crime and Delinquency

Agnew (2005) constructed his general theory of crime and delinquency in order to answer two main questions: 1) why do criminals offend and 2) what is a necessary condition that a general theory of crime must satisfy (2005, pp.1-6). More broadly, Agnew sought to answer the question of why some individuals are more likely to engage in crime and delinquency than others, as he had previously explored in his General Strain Theory (GST) of crime. To answer this question, Agnew suggested that a general theory of crime must: 1) enumerate variables that have a direct effect on crime, 2) incorporate diverse theoretical mechanisms to interpret a single incident, 3) clarify the relationship between and across individual traits, family factors, peer factors, school experiences, and work

experience that cause crime, 4) explain the conditions whereby a criminal act leads to further criminal acts, 5) describe the mechanisms that significantly correlate with crime and interact with one another, 6) describe how long it takes the correlates to affect crime, and 7) describe how biological and social environment factors directly influence and/or cause crime (2005, pp. 2-6). Agnew derived these criterion from "existing theories and research" including the leading contemporary criminological theories such as self-control theory (Gottfredson and Hirschi, 1990), social control theory (Hirschi, 1969; Sampson and Laub, 1993), general strain theory (Agnew, 1992, 2001), social learning theory (Akers, 1985, 1998), rational choice theory (Cornish and Clarke, 1986; Piquero and Tibbetts, 2002), routine activity theory (Felson, 1998), and situational action theory (Wikstrom, 2004) as well as the integrated theories of Thornberry's (1987) general theory of delinquency and Colvin's (2000) theory of 'crime and coercion' (Agnew, 2005, pp. 9). This is why other criminologists called the theory as an 'integrated inductive theory' (Ngo, Paternoster, Cullen, and Mackenzie, 2011; Zhang, Day, and Cao, 2012; Ngo and Paternoster, 2014; Muftic, Grubb, Bouffard, and Maljevic, 2014).

Agnew's central premise in his general theory is that crime is more likely to occur when the constraints against crime are low and the motivations for crime are high (2005, pp. 11). Agnew indicates three different types of constraints, all of which are derived from leading criminological theories, particularly from social control theory, self-control theory, rational choice theory, the routine activity perspective, social learning theory, and situational action theory.

Agnew regards these constraints as external control, internal control, and stake in conformity (2005, pp. 19). External control refers to the likelihood that others will detect and sanction criminal behavior; thus, it includes not only formal control exercised by the criminal justice system, but also informal control exercised by family members, friends,

school officials, neighbors, and employers which are examples of external control. In addition, Agnew indicated that an individual's internalized belief that crime is wrong/immoral along with a set of personality traits such as high self-control are examples of internal control. Even in the tempting situation where their criminal acts will not be detected and punished, those who had internalized the belief that crime is wrong or have developed a high-level of self-control will have constraints against the compulsion to commit violence. Finally, borrowing directly from Hirschi's (1969, 2002) theoretical concepts of commitment and attachment in social bonding theory, Agnew proposed 'stake in conformity' as the third constraint against crime. Based on the rational choice perspective, Hirschi (1969) used the term 'rational component of conformity' to explain the cost and benefits from individuals' deviant acts (p. 20). Similarly, Agnew listed several factors indicative of a stake in conformity or investment in conventional society, which criminal acts can harm. These include strong emotional bonds to conventional others, positively valued activities with conventional others, receiving positive benefits from interacting with conventional others, reputation among conventional others, doing well in school, and having a good job, which are all examples of stake in conformity.

Agnew (2005) also grouped two different categories of motivations for crime derived from Reckless' (1961) containment theory. Following Reckless' argument that there were push-and-pull factors that produced delinquent behaviors, Agnew maintained the notion that the correlates of crime can either pull individuals into crime or push them to engage in crime (Agnew, 2005, p. 22). Further, borrowing concepts from rational choice theory, routine activities perspective, and social learning theory, Agnew explained that individuals learned to engage in crime when they are: 1) reinforced for their criminal activities, 2) exposed to successful criminal models, and 3) exposed to beliefs favorable to crime. Based on his own general strain theory, Agnew also noted individuals get pressured into

crime when: 1) others prevent them from achieving goals, 2) others remove or threaten to remove positively valued things they possess, and 3) they are exposed to noxious or negatively valued stimuli (Agnew, 2005).

Agnew (2005) grouped all specific individual and social environmental variables that can directly impact the constraints against and the motivations for crime into five different major life domains: 1) self, 2) family, 3) peer, 4) school, and 5) work. Given that both the constraints against and the motivations for crime contain most major causes of crime, grouping all the variables into the five life domains ensures each cause of crime can be part of only one domain (p. 40). Furthermore, this grouping system makes it easier to treat the variables in each domain as a unit, allowing causes of crime to influence each domain in the same direction. Agnew demonstrated that all the variables that other studies discussed have a relatively moderate to large direct effect on crime (2005, p. 38), which encompasses most of the variables that individuals might encounter throughout their life course. For example, previous empirical research has found the most important causes of crime during the childhood years are poor parenting practice and personality traits such as irritability, low self-control. All causes of crime for childhood years plus peer delinquency are important causes of crime for adolescent years. Finally, irritability, low self-control, peer delinquency, no/poor marriage, and unemployment/bad jobs are the most important causes of crime for adulthood years. Therefore, Agnew's grouping of variables into the five life domains enabled others to call it an 'age-graded general theory of crime' (Ngo, Paternoster, Cullen, and Mackenzie, 2011; Ngo and Paternoster, 2014).

EMPIRICAL SUPPORT OF THE THEORY

Empirical Support for Agnew's (2005) General Theory of Crime and Delinquency

Four different prior empirical studies have tested Agnew's (2005) general theory of crime and delinquency. Ngo, Paternoster, Cullen, and

Mackenzie (2011) collected data on 238 adult offenders' and information on five life domains using randomized experimental evaluation data from the Maryland Boot Camp Experiment. They hypothesized that adult offenders' low self-control, marriage status, attachment to others, dropping out of schools, attachment to criminal friends, unemployment status, job security, and these variables conditioning effect on other variables were positively associated with their recidivism. In a bivariate analysis, they found weak support for Agnew's general theory of crime. Among their five life domains, two domains (school and work) were significantly correlated with the risk of being rearrested. Results from their multivariate models indicated that only offenders' criminal peers were positively associated with their probability of being rearrested. Testing for interaction effects among life domains led to the finding that 7 out of 21 effects were conditional on other variables when predicting recidivism. Specifically, adult offenders who have low self-control were more likely to recidivate when they had a bad job rather than when they had a good job. Overall, their results did not provide strong evidence in support of the theory.

In the second study, Zhang, Day, and Cao (2012) tested the theory by collecting data on adolescents' family, peer, and school domains and predicting the individuals self-reported delinquency. Additionally, they attempted to examine the influence of mediating effects of the adolescents' three life domains on delinquency. The authors utilized longitudinal data from the Youths and Deterrence: Columbia, South Carolina, 1979-1981 study. Results emerging from their ordinary least square (OLS) regression models and structural equation models supported Agnew's major proposition. Specifically, they found adolescents' attachment to parents and parental supervision in the family domain had a statistically significant reducing effect on their delinquency. Time spent studying, from the school domain, decreased delinquency, while time spent with peers and the number of delinquent peers from the peer domain had a significant positive

impact on their delinquency. Path analyses revealed that most of the variables in the family, peer, and school domains had mediating effects on one another in the prediction of delinquency. Overall, while Zhang, Day, and Cao (2012) provided strong evidence to support the theory, they noted their operationalization of the concepts were imperfect compared to Agnew's original theory. Moreover, their research was a partial test of the theory, not including adolescents' self and work domains.

In the third subsequent study, Ngo and Paternoster (2014) attempted to assess the life domains' contemporaneous and lagged effects on delinquency utilizing the National Education Longitudinal Study (NELS). They hypothesized that adolescents' self, family, peer, and school domains would be significantly related to their substance use (smoking cigarettes, drinking alcohol, and marijuana use). For testing the contemporaneous and the lagged effects of these life domains, they hypothesized that adolescents' life domains in Time 1 would be significantly related to other life domains in Time 1 as well as significantly related to themselves in Time 2. Their results indicated that adolescents' self, family, and peer domains had both contemporaneous and lagged effects on their substance use. On the lagged effects of life domains on substance use, overall, results indicated that adolescents' life domains in Time 1 had a statistically significant impact on substance use in Time 2. Also, most of the adolescents' life domain variables in Time 1 were significantly related to each of the other domains in Time 1. Their findings provided strong support for Agnew's general theory exploring life domains' direct, indirect, interaction, and reciprocal effects on adolescents' substance use.

Finally, the most recent test of the theory was conducted by Muftić, Grubb, Bouffard, and Maljevic (2014) who investigated whether Bosnian adolescents' self, family, school, peer, and neighborhood domains were related to their violent crime, property crime, and substance use. Utilizing the ISRD-2 data, they constructed a series of

multivariate models to examine the life domains' direct, indirect, and interaction effects on crimes. They hypothesized that adolescents' five life domains would have direct and indirect impacts on crime. Their results indicated that Bosnian adolescents' low self-control, favorable attitudes toward violence, parental bonding, delinquent peers, degree of school disorder, school attachment, neighborhood disorganization, and neighborhood collective efficacy were significantly associated with their delinquent behaviors. When exploring the conditioning effects of life domains on offending, adolescents' low self-control and their delinquent peers significantly predicted both violent and substance use. However, other interactive effects were weak or non-existent. Finally, for predicting indirect impacts of life domains on crime, they conducted a path analysis which revealed that the effect of adolescents' age and neighborhood collective efficacy on violent offending was indirect. For example, older Bosnian adolescents were more likely to have favorable attitudes toward violence and delinquent peers, which in turn increased their violent offending. Also, adolescents living in neighborhoods with higher levels of collective efficacy were found to have fewer delinquent peers, higher levels of parental bonding, and school attachment, which protected from committing violent crime. In general, as the first testing of Agnew's general theory using an international sample rather than an American sample, their results supported Agnew's central proposition of the theory on life domains' direct, indirect, and interactional effects on violent offending. However, they noted that their samples in the study were homogenous in terms of adolescents' race and ethnicity given that 95 percent of Bosnians identified themselves as one of three ethnic groups (Bosniaks, Croats, or Serbs). Also, they could not explore life domains' contemporaneous and indirect lagged effects on crime, given that they utilized cross-sectional designed data.

Three out of the four prior studies partially tested the theory which is understandable given the theories complexities. Agnew (2005, p185), himself, has acknowledged that it would be hard to find a dataset containing all five life domains. Furthermore, given that a full test of the theory means testing reciprocal, interactive, contemporaneous, and mediation effects among all the life domains, Agnew recommended testing his theory in bits and pieces. Despite its theoretical complexities, prior criminologists responded to Agnew's calls for testing his theory by taking some parts of the life domains and exploring their influence on crime and delinquency. With this in mind, it is our intention to provide the first test of the theory using a truly comparative, cross-national, framework.

DATA AND METHODS

Second International Self-report Delinquency Study (ISRD-2)

After the first International Self-Report Delinquency Study (ISRD-1) collected samples between in 1991 and 1992 from 13 different members of the European Union including the United States, European criminologists quickly acknowledged its significance in exploring adolescent delinquency (Junger-Tas et al, 2012). This was the major impetus for conducting the subsequent ISRD-2 study which, similar to the ISRD-1, collected data mainly from European countries. Samples were collected from 31 countries between in 2005 and 2007 (Enzmann, Marshall, Killias, Junger-Tas, Steketee, & Gruszczynska, 2010).

What makes the ISRD-2 unique is its focus on understanding adolescents' delinquent offending, victimization, and substance abuse in a cross-national setting with a standardized data collection procedure across different countries (He & Marshall, 2009). To reduce methodological errors generated by the research processes the same protocol guided data sampling, questionnaire, and data entry processes in each nation (Enzmann,

Marshall, Killias, Junger-Tas, Steketee, & Gruszczynska, 2010). This has enabled criminologists to use the ISRD-2 results to test different criminology theoretical perspectives in comparative contexts. According to the ISRD-2 sampling guidelines, data collection teams in each different country sampled participants from a large city or metropolitan area (about 500,000 inhabitants), a medium size city (120,000 inhabitants with 20% variation), and small towns (10,000 to 75,000 inhabitants) (Enzmann, Marshall, Killias, Junger-Tas, Steketee, & Gruszczynska, 2010). After random samples at the city level were drawn, the primary sampling unit (7th, 8th, and 9th grade classrooms) were stratified by school type. In total, the ISRD-2 collected information on 67,883 adolescents from 31 different participating countries (Enzmann, Marshall, Killias, Junger-Tas, Steketee, & Gruszczynska, 2010). All adolescents in the ISRD-2 study were asked to answer a pencil-and-paper-based questionnaire while a research team was presented in a random one-hour class (Enzmann, Marshall, Killias, Junger-Tas, Steketee, & Gruszczynska, 2010). Overall, they answered questions regarding their delinquent behaviors, several correlates of crime, and socio-demographic characteristics. For the purposes of this study, we use data from the US and Ireland samples.

The US sample

Following the ISRD-2 standardized-research protocol, the US research team collected data between the fall of 2006 and spring of 2007 from five cities located in four different states (He and Marshall, 2009). Students enrolled in 7th, 8th, and 9th grade from a large city in Texas, from a medium-size city in Illinois, and from a cluster of small townships in Massachusetts and New Hampshire completed the ISRD-2 questionnaire (He and Marshall, 2009). While an active parental consent form was required for students in Texas, the passive parental consent form was adequate in the medium-size city in Illinois and two small towns in Massachusetts and New Hampshire (He and Marshall, 2009). The overall response rate was 64%

across all locations. In total, the final sample included 2,401 students from 11 public schools in all four targeted states, 3 private parochial schools in Illinois, Massachusetts, and New Hampshire, and one private non-parochial school in Illinois (He and Marshall, 2009).

Of the US sample, He and Marshall (2009) noted the overrepresentation issue emerged during the data collection process. The sample over-represents males (52.3%) and is slightly biased toward older students (although mean age is almost 14 years old, only 34.1% of the total sample consists of 12-13 years old) (He and Marshall, 2009). Thus, there was an overrepresentation of 9th graders (almost half). In addition, one-fifth of the total sample attends private schools (He and Marshall, 2009). While the proportions of medium-size and a cluster of small towns in the final samples were 39.4% and 40.1%, respectively, only 20% of the final sample was collected from the large city (He and Marshall, 2009). Moreover, the large city had a 97% Hispanic population; thus, almost the entire large city sample is Hispanic adolescents (He and Marshall, 2009).

The Ireland sample

In contrast to the US portion of the ISRD-2 study, the Irish sample was made-up of data from a national-level random sample (Muftić, Grubb, Bouffard, & Maljevic, 2014). After listing all second-level schools in the Republic of Ireland obtained from the Irish Department of Education and Science, the Ireland research team of the ISRD-2 chose five different geographic areas based on size and degree of urbanization (Breen, Manning, O'Donnell, O'Mahony, & Seymour, 2010). Then, the team developed three sub-samples including one large city (the population size of 495,781), one medium-size city (123,062), and three small towns (population sizes of 32,500, 31,577, and 17,000) (Breen, Manning, O'Donnell, O'Mahony, & Seymour, 2010). Finally, after schools were randomly selected within each of these areas, two classrooms within each selected school were randomly selected (Breen, Manning, O'Donnell, O'Mahony, & Seymour, 2010). In total, the study

had a 60% response rate (37 schools out of 62 sampled-school), and included responses from 1,570 students. In contrast to the US team, the Ireland research team obtained consent forms not only from the principals of the sampled schools but also from the students themselves. However, many target schools hesitated to participate because of scheduling conflicts (Breen, Manning, O'Donnell, O'Mahony, & Seymour, 2010).

Measurement of Variables

Dependent Variable Adolescents' delinquent behavior is measured with a 15-item variety scale from the ISRD-2 study, including diverse adolescents' problem behaviors such as substance abuse, minor property crimes, serious property crimes, violent behaviors, and adolescents' drug selling in the past 12 months. Each item is a binary indicator of delinquency (yes or no), thus the range of the dependent variable is 0 to 15. Details on the 15 items and the list of questions are presented in Appendix A.

Independent Variables to test Agnew's (2005) central claims, we relied on the approach used by Muftić, Grubb, Bouffard, & Maljevic (2014) to categorize the life domains. Although Agnew (2005) classified individuals' five life domains into the self, family, peer, school, and work domain, Muftić, Grubb, Bouffard, & Maljevic proposed the self, family, peer, school, and neighborhood domain. They used the neighborhood domain in place of the work domain due to the theoretical and methodological irrelevance of examining adolescents' factors related to their working characteristics.

On the ISRD-2 questionnaire, responses ranged from 1 to 4, representing fully agree (1) to fully disagree (4). All five life domains, except peer domain (self, family, school, and neighborhood) were converted from original scores to the percent of maximum possible (POMP) score. As a linear transformation, the POMP score not only permits significance tests to produce identical test statistics from untransformed scales (Posick, 2013), but it

also allows for easy comparisons between scales and multivariate results because it ranges from 0 to 100 (Cohen et al., 1999; Posick & Rocque, 2014). To convert respondents' raw scale to the POMP score, the equation given by Cohen et al., (1999, p. 323) was utilized:

POMP = [(observed − minimum) / (maximum - minimum)] × 100

(See also Posick & Rocque, 2014)

In the equation, observed represents the **observed** score for a single case, minimum represents the minimum possible score on the scale, and **maximum** represents the **maximum** possible score on the scale. Two different variables were measured in order to characterize adolescents' self-domain; their level of self-control and their favorable attitude toward violence. Following the Grasmick et al scale, the ISRD-2 data included 12 different items covering measurements of temperament, self-centeredness, risk-seeking, and impulsivity. This self-control scale has range from 1 to 4. In this scale, 1 represents fully agree and 4 means fully disagree. After the POMP score is formulated based on the self-control scale, the higher score represents a higher level self-control. Similarly, adolescents' favorable attitude toward violence has the same range as self-control. After adolescents were asked 5 different items regarding their perception of violence, their responses were coded and transformed into POMP scores.

The family domain included two different variables related to adolescents' family factors: family bonding and family disruption. The family bonding scale is a composite of four different items. After measuring adolescents' bonding to their family members, the responses from four different items were summed then converted to the POMP scores, ranging from 1 (low) to 100 (high). Also, family disruption was measured by three different questions derived from the life event scale regarding parents' alcohol or drug use, conflicts or fights between parents, and their divorce. These items were also summed and converted to the

POMP scores in order to present the family disruption scale.The peer domain contains only one variable, peer delinquency. Adolescents were asked whether their friends were involved in drug use, shoplifting, burglary, extortion, and assault. Each question produced a dichotomous answer (0 = no and 1 = yes), thus the peer delinquency scale has a range from 0 to 5. The higher score on peer delinquency, the more delinquent friends the respondent associates with (KR20 = 0.76). School bonding and school disorganization are the two variables captured in the school domain. These two variables were measured from the question about whether adolescents agree or disagree with 8 different statements about their schools. All eight questions had the same answer choices: 1 = fully agree to 4 = fully disagree. For school bonding, respondents were asked about their attachment to school. After all answers were reverse coded then summed, it was converted to the POMP scores ranging from 0 to 100. In addition, school disorganization was also measured from four different questions from their perception about the school whether there was delinquent activity in their schools. In the neighborhood domain, the question how strongly do you agree or disagree with the following statements about neighborhood was asked of the respondents in order to measure their perception of three different subscales of neighborhood: two different items for neighborhood bonding, five items for neighborhood disorganization, and the three items for neighborhood integration. All answers from 10 different items within each subscale were reversed coded and summed. Then, as with the others, each of these three subscales was converted into POMP scores ranging from 0 to 100.

Control Variables In all analyses, respondents' socio-demographic characteristics including age, gender, and immigration status were used as statistical controls.

Hypotheses and Analytic Strategy

To investigate the generalizability of Agnew's (2005) general theory of crime and delinquency, the current study explores life domains' effect on their delinquent behavior between American and Irish adolescents. More specifically, there are five different research hypotheses to test.

H1: American adolescents' self-control, family bonding, school bonding, neighborhood bonding, and neighborhood integration, as constraints against crime, will decrease their delinquent behavior.

H2: American adolescents' attitude toward violence, family disruption, peer delinquency, school disorganization, and neighborhood disorganization, as motivations for crime, will increase their delinquent behavior.

H3: Irish adolescents' self-control, family bonding, school bonding, neighborhood bonding, and neighborhood integration, as constraints against crime, will decrease their delinquent behavior.

H4: Irish adolescents' attitude toward violence, family disruption, peer delinquency, school disorganization, and neighborhood disorganization, as motivations for crime, will increase their delinquent behavior.

H5: The effects of adolescents' all five life domains on their delinquent behavior are the same between American and Irish adolescents.

Given that the dependent variable is a variety score derived from the summation of 15 different binary responses, this study treats the variety score of these 15-item delinquent behavior as a binomial random variable indicating adolescents' total number of 'successes' out of 15 Bernoulli 'trials,' similar to Apel and Kaukinen (2008). The binomial formula determines the binomial probability.

$$P(x) = \frac{n!}{x!(n-x)!} p^x (1-p)^{n-x}$$

In this formula, x represents the number of successes; n represents the total number of trials; p represents the probability of adolescents' success on offending delinquent behaviors; (1-p) represents the probability of failure (i.e., no offense). Combining

all the items, the binomial formula leads to obtaining the probability of adolescents' x number of success out of the 15 different delinquent behaviors, or P(x).

RESULTS

Descriptive Statistics

Table 1 report the descriptive statistics of adolescents' socio-demographic characteristics, their average POMP score on the five life domains, and the dependent variable variety score including ranges and standard deviations. A list of items constructing the five life domains appears in AppendixB

TABLE 1. Descriptive Statistics of Variables for American and Irish Adolescents						
	USA			**Ireland**		
Variables	**M (SD)**	**Min**	**Max**	**M (SD)**	**Min**	**Max**
Age	13.94(1.10)	11	18	14.05(.95)	12	17
Male	.52(.50)	0	1	.52(.50)	0	1
Immigration Status	.04(.20)	0	1	.10(.31)	0	1
Self Domains						
Self-Control	57.29(22.65)	0	100	57.55(20.87)	0	100
Attitude toward Violence	43.21(24.90)	0	100	42.37(23.95)	0	100
Family Domains						
Family Bonding	77.41(19.36)	0	100	80.46(16.25)	11.11	100
Family Disruption	20.62(28.74)	0	100	9.45(20.73)	0	100
Peer Domain						
Peer Delinquency	1.41(1.57)	0	5	1.22(1.36)	0	5
School Domains						
School Bonding	72.23(21.75)	0	100	71.70(22.23)	0	100
School Disorganization	43.86(27.10)	0	100	48(26.72)	0	100
Neighborhood Domains						
Neighborhood Bonding	70.76(31.33)	0	100	78.91(29.54)	0	100
Neighborhood Disorganization 18.75(26.54)		0	100	25.48(29.35)	0	100
Neighborhood Integration	62.97(29.09)	0	100	67.65(26.54)	0	100
Adolescents' Delinquent Behaviors	**.70(1.54)**	**0**	**15**	**1.34(2.10)**	**0**	**15**

Descriptive statistics for American adolescents indicates that their mean age is nearly 14 years old, 52 percent are male, and 4 percent of respondents in the study were born in a country other than the United States. On average, American adolescents engaged in a little less than 1 out of the 15 different types of delinquent behaviors. In the self-domain, the POMP score for self-control is 57.29 and 43.21 for attitude toward violence out of 100. For the family domain, the score is 77.41 for family bonding and 20.62 for family disruption out of 100. For the peer domain, on average, American adolescents in the study had 1.41 on the delinquent peers scale. For the school domain, the score for

School bonding is 72.23 and 43.86 for school disorganization out of 100. Finally, for the neighborhood domain, the score for neighborhood

bonding is 70.76, 18.75 for neighborhood disorganization, and 62.97 for neighborhood integration out of 100. The average age for Irish adolescents is 14.05, 52 percent of adolescents in the study are male, and 10 percent of adolescents in the study were born in a country other than Ireland. On average, Irish adolescents had engaged in a little more than 1 out of the 15 different types of delinquent behaviors in the past 12 months. The self-domain for Irish adolescents indicates their POMP score for self-control is 57.77 and 42.37 for favorable attitude toward violence. For the family domain, the score for family boning is 80.46 and 9.45 for family disruption. On average, Irish adolescents in the study had 1.22 on the delinquent peers scale. For the school domain, the score for school bonding is 71.70 and 48 for school disorganization. Finally, for the neighborhood

domain for Irish adolescents, the score for neighborhood bonding is 78.91, 25.48 for neighborhood disorganization, and 67.65 for neighborhood integration.

Binomial Regression Analyses

Table 2 presents the results from the three binomial regression models predicting the adolescents' 15-item variety score. The first model includes adolescents' socio-demographic characteristics and five life domains from the combined data containing both American and Ireland adolescents. The second model represents adolescents' five life domains from American adolescents and the third model contains the results from Irish adolescents

TABLE 2. Binomial Regression Results of Adolescents' Delinquent Behaviors on Five Life Domains						
	MODEL 1		**MODEL2**		**MODEL 3**		**Differences b/t US and Ireland**
	Both Countries		**United States**		**Ireland**		
	B	**Exp**	**B**	**Exp**	**b**	**Exp**	**z-score**
Variables	**(SE)**	**(b)**	**(SE)**	**(b)**	**(SE)**	**(b)**	
Self Domains							
Self-Control	-.012(.001)	**.987***	.006(.001)	**.994**	.018(.002)	**.982***	**5.381***
Attitude toward Violence	.012(.001)	**1.012***	.012(.002)	**1.011***	.011(.001)	**1.011***	0.448
Family Domains							
Family Bonding	-.007(.001)	**.992***	-.007(.002)	**.992***	-.006(.001)	**.993***	-0.448
Family Disruption	.004(.001)	**1.004***	.005(.001)	**1.005***	.002(.001)	**1.002***	**2.127***
Peer Domain							
Peer Delinquency	.443(.015)	**1.558***	.510(.023)	**1.664***	.393(.022)	**1.470***	**3.677***
School Domains							
School Bonding	-.004(.001)	**.995***	-.005(.001)	**.995***	-.004(.001)	**.996**	-0.709
School Disorganization	.002(.001)	**1.002***	.003(.001)	**1.003**	.001(.001)	1.001	1.418
Neighborhood Domains							
Neighborhood Bonding	.003(.001)	**1.002***	0(0)	1	.005(.001)	**1.005***	**-5.0***
Neighborhood Disorganization	.005(.001)	**1.005***	.005(.001)	**1.005***	.006(.001)	**1.006***	-0.709
Neighborhood Integration	0(0)	0.999	0(0)	1	0(0)	0.999	0
Demographic Characteristics							
American	-.946(.045)	**.388***					
Age	.117(.021)	**1.124***	.126(.029)	**1.135***	.106(.032)	**1.110***	0.464
Male	.346(.043)	**1.414***	.359(.064)	**1.432***	.366(.061)	**1.432***	-0.079
Immigration Status	.064(.082)	1.066	-.101(.183)	1.106	.011(.094)	1.012	-0.544
Constant	-4.708(.359)	**.009***	-6.172(.519)	**.002***	-4.282(.529)	**.013***	**-2.550***
Chi-Square	**3728.91***		**1809.71***		**1791.50***		

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

According to the full sample model, Model 1, holding all other variables constant, the odds of committing delinquent behaviors for American adolescents over the odds of committing delinquent behaviors for Ireland adolescents is .388. This correspond to a 61% lower odds for Irish adolescents compared to US adolescents. The odds for males are 41% higher than the odds for female in the two countries and a one-unit increase in age corresponds to an increase of 12% in the odds of

committing delinquent behavior among adolescents in both countries.

The full sampled model indicates that almost all of the adolescents' five life domains are significantly associated with the probability of delinquent behavior for both American and Irish adolescents. Among the five life domains, the peer domain has the greatest positive effect on the probability of additional delinquent behavior among adolescents in both countries. The model suggest about a 55% increases in the odds of committing delinquent behavior per one-unit increase in peer delinquency (having at least one friend commit an additional delinquent act). The second greatest positive effect on the probability of an additional delinquent behavior among all adolescents living in both countries was adolescents' favorable attitude toward violence. The model predicts about a 1.2% increases in the odds of committing an additional delinquent behavior per one-unit increase in their attitudes toward violence.

In the United States model, Model 2, almost all of American adolescents' life domains are statistically significant in predicting additional delinquent behaviors. Similar to the full sample model, American adolescents' peer delinquency has the greatest positive effect on the probability of an additional delinquent behavior. The model predicts a 66% increase in the odds of committing an additional delinquent behavior per one-unit increase in peer delinquency. While most of adolescents' life domains including self-control, attitude toward violence, family bonding, family disruption, peer delinquency, school bonding, school disorganization, and neighborhood disorganization as well as socio-demographic characteristics remain significant just as in the full sampled model, the significant impact of neighborhood bonding was not found in the US model. Thus, these results fully support the second research hypothesis, while the results support the first research hypothesis partially due to the fact that neighborhood bonding and neighborhood integration are not statistically significant.

In the Ireland model, Model 3, Irish adolescents' five life domains remain significantly on the odds of committing additional delinquent behaviors. Peer delinquency is again found to have the greatest positive effect on delinquency. The model suggests a 47% increase in the odds of committing an additional delinquent behavior per one-unit increase in peer delinquency. While adolescents' perceptions of school disorganization is statistically significant among American adolescents, such is not the case among Ireland adolescents. On the other hand, neighborhood bonding was not statistically significant among American adolescents, but it is significant for Irish adolescents. Among Irish adolescents, the model predicts a 0.5% increases in the odds of committing an additional delinquent behavior per one-unit increase in neighborhood bonding. Consequently, except for neighborhood integration, the results support the third research hypothesis among Ireland adolescents regarding the constraints against crime. Also, except school disorganization, the results support the fourth research hypothesis regarding the motivation for crime among Irish adolescents.

To compare the binomial regression coefficients between the two countries, we use the equation constructed by Clogg et al. (1995). Given that the fifth research question of the study is whether or not the effect of the adolescents' five life domains on delinquent behaviors is invariant across the countries, every variable in each life domain is compared. The results from the equation indicate that the four different coefficients in the five life domains are statistically different between American and Ireland adolescents. Specifically, among 10 variables in the model, self-control, family disruption, peer delinquency, and neighborhood bonding have a different effect on the odds of committing additional delinquent behavior between American and Ireland adolescents. Based on the findings in the United States and Ireland, the binomial regression coefficients for the relationship between self-control and delinquent behavior was -.006 (s.e. = .001) for American adolescents and -

.018 (s.e. = .002) for Ireland adolescents corresponding to a z-score for the difference between these coefficients of 5.381. Adolescents' self-control had a greater negative effect on the odds of committing an additional delinquent behavior among Ireland adolescents than American adolescents. For family disruption, the binomial regression coefficients were .005 (s.e. = .001) for American adolescents and .002 (s.e. = .001) for Irish adolescents. The obtained z-score for the difference between these two coefficients was 2.127, indicating that family disruption had a greater positive effect on delinquent behaviors among American adolescents rather than Irish adolescents.

The effects of adolescents' peer delinquency and their perception of neighborhood bonding on delinquent behaviors are also different between American and Irish adolescents. The corresponding z-scores of peer delinquency and neighborhood bonding are 3.677 and -5, respectively. This finding indicated that adolescents' peer delinquency has a greater positive effect on the odds of committing an additional delinquent behavior among American adolescents than Irish adolescents and that adolescents' perception on neighborhood bonding has a greater positive effect on the odds of committing an additional delinquent behavior among Irish adolescents rather than American adolescents. Given that these results show that the effects of adolescents' self-control, family disruption, peer delinquency, and neighborhood bonding on delinquent behavior are significantly different between American and Irish adolescents, the fifth research hypothesis is not supported pointing toward an important avenue for future research.

DISCUSSION AND CONCLUSION

The purpose of the current study was to investigate the generalizability of Agnew's (2005) general theory of crime and delinquency in cross-national settings. We examined whether the five life-domains of adolescent's were related to their delinquent offending in the same way in two different countries. To achieve this goal, we tested the five life domains' influence on delinquency for both American and Irish adolescents. Additionally, we tested whether the effects of the adolescents' five life domains on their delinquent behavior were invariant across the samples.

Broadly, the results support Agnew's (2005) central propositions. All five life domains were significantly associated with the probability of delinquent offending in the full sample and the split samples. Specifically, the results indicated that American adolescents' self-control, attitude toward violence, family bonding, family disruption, peer delinquency, school bonding, school disorganization, and neighborhood disorganization were statistically significant on delinquent behavior. For Irish adolescents, the results were replicated for all variables within the five life domains except adolescents' perceptions regarding their school disorganization which was significant for American students but not Irish students and neighborhood bonding which was significant for Irish students but not US students.

These results support the findings from the previous four empirical tests of Agnew's (2005) theory (Ngo, Paternoster, Cullen, and Mackenzie, 2011; Zhang, Day, and Cao, 2012; Ngo and Paternoster, 2014; Muftic, Grubb, Bouffard, & Maljevic, 2014). Specifically, the results of the current study reaffirm the Muftic, Grubb, Bouffard, & Maljevic's (2014) as well as Ngo and Paternoster's (2014) findings on the self-domain which suggest that adolescents with lower levels of self-control and more favorable attitudes toward violence are more likely to commit violent crime, property crime, and substance use. Similarly, the results on adolescents' family bonding, school-bonding, peer delinquency, and adolescents' perception of neighborhood disorganization support prior empirical tests of the theory on crime and delinquent in the United States and Bosnia and Herzegovina. Additionally, the three binomial regression analyses indicated that adolescents' peer delinquency was the most powerful predictor of delinquent behaviors among

adolescents in both countries net study variables. These results support previous findings that adolescents' peer delinquency is among strongest correlates on crime and delinquency (Pratt et al., 2010).

While the results supported Agnew's (2005) central propositions, the findings testing the fifth research hypothesis constructed to obtain the theory's generalizability yielded unexpected results. The current research finds that the effects of adolescents' self-control, family disruption, peer delinquency, and neighborhood bonding on their delinquent behaviors were significantly different between American and Irish adolescents. Specifically, American adolescents' family disruption and peer delinquency have a greater positive effect on delinquent behaviors in the US than Ireland. Also, while American adolescents' self-control has a greater negative effect on delinquent behaviors than Irish adolescents, Irish adolescents' neighborhood bonding have a greater positive effect on delinquent behaviors rather than American adolescents.

The findings of the current research contribute to adolescents' delinquent research as the first cross-national analysis testing Agnew's (2005) general theory of crime and delinquency across different countries. In addition, the findings support the theory's central theoretical proposition that five life domains play a role as either constraints against or the motivations for delinquent behavior.

Given that the ISRD-2 data were collected using a cross-sectional design, the current study could not explore temporal aspects of the life domains on delinquent behavior. In his theory, Agnew (2005) included additional propositions that the life domains have reciprocal effects on one another as well as interact with one another in affecting crime (2005, pp11-12). Unfortunately, by utilizing the ISRD-2 data, the current research cannot examine whether adolescents' five life domains are interacting with one another. In order to understand how life domains interact to predict crime and delinquency, as well as the cross-national

differences on these interactions, further research needs to utilize data collected longitudinally and cross-nationally. Moreover, while Irish adolescents in the ISRD-2 data were collected from national-level random sample frames, the American adolescents in the data were collected by convenience sampling from four different states. Thus, the findings of the research are limited in in terms of generalizability.

The results, in conjunction with the vast literature on risk factors for crime, provide important insights for policy-makers interested in crime prevention. Specifically, they show adolescents' self and family domains, adolescents' self-control and family bonding variables are substantive constraints against crime. Conversely, adolescents' favorable attitude toward violence and family disruption are motivations for crime. These findings show that parents have an important role in reducing adolescents' delinquent behaviors. According to Gottfredson and Hirschi's (1990) general theory of crime, children with low self-control are more likely to have parents who refuse to or are unable to monitor a child's behavior. Thus, family intervention by parents may be one of the most effective crime and delinquency prevention strategies as shown by randomized controlled trials across the globe (Mejia, Calam, & Sanders, 2015; McGilloway et al., 2012; Stattin, Enebrink, Özdemir, & Giannotta, 2015). Also, given that adolescents' peer domain, school domain, and neighborhood domains have a significant effect on delinquent behaviors, school curriculum and extracurricular activities should be implemented in middle and high schools which are designed to increase school attachment and encourage the formation of conventional attachment to classmates. Finally, policy-makers should consider how to create community-level extra-curricular program that improves adolescents' attachment to their neighborhood as well as their self-control (Zimmerman, Welsh, and Posick, 2015).

In conclusion, the findings suggest the unique potential of the theory for the cross-cultural

research in the field of criminology. Although it has been criticized for being an 'amalgam' of all the existing contemporary criminological theories (Ngo, Paternoster, Cullen, & Mackenzie (2011), Agnew's (2005) theoretical propositions, synthesizing the larger number of variables that individuals encounter over their life course, may overcome the theoretical limitations that recent cross-cultural research contains. Thus, the current research provides a rationale for other comparative criminologists to attempt to overcome the limitations that they have expand research to broader spectrum of samples, to different types of crime offending, and to other age groups among different racial or ethnic groups.

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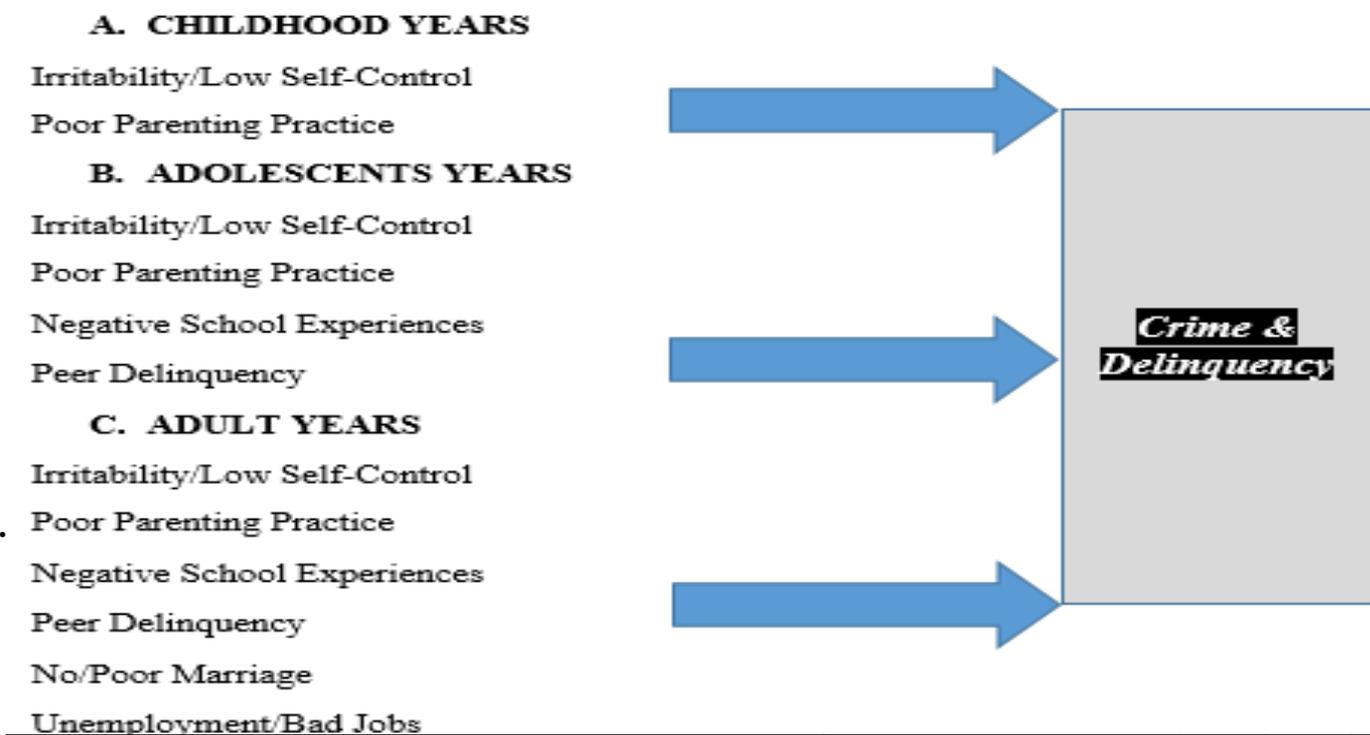
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Figure 1

A. CHILDHOOD YEARS

Irritability/Low Self-Control

Poor Parenting Practice

B. ADOLESCENTS YEARS

Irritability/Low Self-Control

Poor Parenting Practice

Negative School Experiences

Peer Delinquency

C. ADULT YEARS

Irritability/Low Self-Control

Poor Parenting Practice

Negative School Experiences

Peer Delinquency

No/Poor Marriage

Unemployment/Bad Jobs

Crime & Delinquency

Appendix A. Adolescents' Delinquency Definitions							
Adolescents' Delinquency							
Indicators				**Definitions**			
1)Substance Use							
Alcohol Use				Have you ever drink beer, breezers, or wine in last month?			
Marijuana Use				Have you ever used weed, marijuana or hash in last month?			

XTC Use		Have you ever used XTC or speed in last month?		
2) Minor property crime				
Vandalism		Have you ever *damaged something on purpose*, such as a bus shelter, a window,		
		a car or a seat in the bus or train, a car…?		
Bicycle-Theft		Have you ever stolen a bicycle, moped or scooter?		
Theft from car		Have you ever *stolen something out of or from a car*?		
Shoplifting		Have you ever *stolen something* from a shop or department store?		
Larceny		Have you ever *snatched a purse, bag or something else from another person*?		
3) Serious property crime				
Burglary		Have you ever *broken into a building* with the purpose of stealing something?		
Robbery		Have you ever *threatened somebody* with a weapon or beat them up,		
		just to get money or other things from them?		
Car theft		Have you ever *stolen a motorbike or car*?		
4) Violent behavior				
Assault		Have you ever *intentionally physically assaulted someone, or hurt him/her*		
		with a stick or knife, so bad that he/she required medical attention?		
Carrying a weapon		Have you ever *carried a weapon*, such as a stick, knife, or chain (not a pocket knife)?		
Group fighting		Have you ever *participated in a group fight* on the school playground,		
		a football stadium, the streets, or any public place?		
5) Drug dealing				
Drug dealing		Have you ever *sold any (soft or hard) drugs* or acted as an intermediary?		

Appendix B. Adolescents' Five Live Domains							
Adolescents' Five Domains							
			Definitions				
1)Self Domains *Self-Control*							
		I act on the spur of the moment without stopping to think. I do whatever brings me pleasure here and now, even at the cost of some distant goal. I am more concerned with what happens to me in the short run than in the long run. I like to test myself every now and then by doing something a little risky. Sometimes I will take a risk just for the fun of it. Excitement and adventure are more important to me than security. I try to look out for myself first, even if it means making things difficult for other people. If things I do upset people, it's their problem not mine. I will try to get the things I want even when I know it's causing problems for other people. I lose my temper pretty easily. When I am really angry, other people better stay away from me. When I have a serious disagreement with someone, it's usually hard for me to talk calmly					

			about it without getting upset.					
Attitude toward Violence								
			A bit of violence is part of the fun One needs to make use of force to be respect If somebody attacks me, I will hit him/her back. Without violence everything would be much more boring It is completely normal that boys want to prove themselves in physical fights with others.					
2) Family Domains								
Family Bonding								
			How often do you and your parents do something together, such as going to the movies, going for a walk or hike, visiting relatives, attending a sporting event, and things like that? How many days a week do you usually eat the evening meal with your parents? How do you usually get along with the man you live with (father, stepfather…)? How do you usually get along with the woman you live with (your mother or stepmother?					
Family Disruption								
			Problems of one of your parents with alcohol or drugs Repeated serious conflicts or physical fights between your parents Separation/divorce of your parents					
3) Peer Domain								
Peer Delinquency								
			I have friends who used soft or hard drugs life weed, hash, XTC, speed, heroin or coke. I have friends who did steal something from a shop or department store I have friends who entered a building with the purpose to steal something I have friends who did greaten somebody with a weapon or to beat him up, just to get money or other things from him I have friends who did beat someone up or hurt someone badly with something like a stick or a knife.					
4) School Domains								
School Bonding			If I had to move I would miss my school					
			Teachers do notice when I am doing well and let me know I like my school					
			There are other activities in school besides lessons (sports, music, disco)					
School Disorganization								
			There is a lot of steal in my school					
			There is a lot of fighting in my school Many things are broken or vandalized in my school There is a lot of drug use in my school					

5) Neighborhood Domains										
Neighborhood Bonding		If I had to move, I would miss the neighborhood I like my neighborhood								
Neighborhood Disorganization		There is a lot of crime in my neighborhood								
Neighborhood Integration		There is a lot of drug selling There is a lot of fighting There is a lot of graffiti There are a lot of empty building This is a close-knit neighborhood People in his neighborhood can be trusted People in this neighborhood generally don't get along with each other								