WESTERN CRIMINOLOGY REVIEW

Western Criminology Review

Official Journal of the Western Society of Criminology

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Looking Inside Zone V:
Testing Social Disorganization Theory in Suburban Areas*

Sunghoon Roh
Appalachian State University

Tae M. Choo
Middle Tennessee State University

Abstract. *Rapid suburbanization since the 1970s diversified the socioeconomic picture in suburbs, leading to an increase in crime and other social problems. In this study, social disorganization theory, developed mostly from studies conducted in large cities, was tested in a suburban setting. Negative binominal regression models were used to analyze calls for service data gathered from four suburban cities in Texas. The findings partially supported social disorganization theory. While poverty and racial/ethnic heterogeneity were found to be positively related with crime, residential mobility was negatively related with crime. This study also found that social disorganization indicators could account for variance in disturbance and social service calls. Finally, implications of these findings are discussed.*

Keywords: social disorganization theory; suburbs; ecological criminology; calls for service

Introduction

The primary concern of ecological criminology research has centered on urban areas, especially big cities. Only a few studies have pursued regional variations. Emphasis on urban areas appeared reasonable given the tradition of ecological theories growing out of the Chicago School's urban studies (Park, 1952; Shaw and McKay, 1942). Furthermore, crime has been regarded as a city problem, mainly because of higher crime rates in cities than in suburbs or rural areas. However, the changes occurring in suburban areas over the last several decades demanded more attention to these areas. Early ecologists described suburbs as a "zone of commuters" predominately composed of the white middle-class (Burgess, 1925).

Suburban areas have grown quickly since the 1950s as poor immigrant workers moved to the inner city, and the old residents—mostly whites—moved to suburbs seeking better residential environments. In this early stage of suburbanization, a stark racial and economic segregation made it possible to maintain a domination of the white middle-class in suburbs, while inner cities were economically and racially diverse (Baldassare, 1992). However, since the 1970s, when central cities and suburbs were combined into metropolitan areas, the social characteristics of suburbs greatly changed. Manufacturers moved to

the suburbs, hence, a number of non-white, low-income workers also moved to these areas seeking employment. The suburbs also witnessed a diversified family structure (e.g., female-headed households) and an increase in the proportion of home renters. In brief, the homogeneous structure of the suburbs, represented by white, middle-class, family-oriented nuclear, and home-owner families, became diverse in socioeconomic terms (Baldassare, 1986).

As the structural features changed, the suburbs, which were viewed as regions without various social problems such as crime, disorder, unemployment, and economic inequality, no longer remained immune from these problems. Some studies reported that suburbs—especially rapidly growing ones—suffered a decline in the quality of life and resident satisfaction due to structural changes since the 1970s (Baldassare, 1986; Cervero, 1986).

The purpose of the current study is to test social disorganization theory in a suburban setting. This study suspects that suburbs may be experiencing a similar ecological process to what occurred in the early 19th century city of Chicago. Consistent with the propositions of the social disorganization theory, it is hypothesized that social disorganization indicators, including poverty, racial/ethnic heterogeneity, residential mobility, and family disruption are positively related with crime rates.

Overview of Ecological Perspectives in Crime

Ernest Burgess (1925) displayed "problem areas" in Chicago using the "concentric zone model." He noticed that cities tended to expand from the center and to make five concentric zones, each with differing characteristics. It was in the transition zone (Zone II) that social change mostly occurred, caused by the invasion of the central business district. As the central business district constantly expanded, the transition zone suffered from continuous invasion and conflict, resulting in a breakdown of the social control structure. According to the ecological perspective, any conflict derived from invasion should settle as a new order becomes dominant. However, given the continuous changes in community members and the rapidly-growing central business district, the transition zone failed to move from disruption to reorganization. Thus, communities in the transition zone were characterized by a lack of normative structure and higher rates of social problems.

Shaw and McKay (1942) applied the concentric zone model to the study of juvenile delinquency in Chicago. They showed that juvenile delinquency rates were not evenly distributed over the entire city; instead, crime rates were highest in the transition zone. They concluded that areas with a high delinquency rate were characterized by three structural factors: poverty, ethnic/racial heterogeneity, and population mobility viewed as indicators of social disorganization (Kornhauser, 1978). In the transition zone, residential communities were altering into commercial or industrial areas. While high-income residents could move to the outer zones for a better residential environment, low-income people who could not afford to move had no choice but to stay in the transition zone. As a result, only low-income households characterized by low percentage of home ownership, high percentage of families on relief, and low median income dominated the communities. This zone was also preferred by low-income non-whites or foreign immigrants, as a result of limited economic ability. Thus, successive waves of new immigrants turned the communities more heterogeneous. The high rates of mobility in and out of communities resulted from push- and pull-factors. The deteriorated environments pushed residents who could afford to escape out of the communities. The low property value and close proximity to workplaces encouraged an influx of low-income earning immigrants. Ultimately, the three indicators of social disorganization represented dynamics that were based on the economic statuses of both residents and locations (Taylor, 2001).

Since the 1970s, scholars began to view social disorganization through a social control model (Bursik, 1988; Kornhauser, 1978; Sampson and Groves, 1989). According to this perspective, community contexts in socially disorganized areas weaken community controls over residents and lead to increased crime rates. In other words, the community control variable (endogenous variable) intervened between indicators of social disorganization (exogenous variables) and crime rates. Bursik (1988) noted that Shaw and McKay did not suggest that urban ecological factors were the cause of crime. Instead, Shaw and McKay attempted to postulate how social disorganization destructed informal social control within communities and consequently increased crime rates. In a similar vein, Simcha-Fagan and Schwartz (1986) argued that the effect of community structural variables on juvenile delinquency rates was mediated by the community's ability to maintain social participation and its vulnerability to deviant subcultures. For example, in an area with high rates of residential mobility, the level of involvement in local organizations is low, and the community therefore cannot effectively cope with problems such as social disorder or criminal subcultures. Sampson and Groves (1989) tested the mediating effects of informal and formal community control factors between structural characteristics (i.e., urbanization, residential mobility, ethnic heterogeneity, and family disruption) and crime rates. They found a significant negative relationship between structural variables and community control variables, such as the local friendship network and the supervision of teenage peer groups. Additionally, most structural characteristics had significant and direct effects on crime rates. These direct effects were sometimes stronger than those of the control variables on crime rates. Veysey and Messner (1999) replicated Sampson and Groves' study, with consistent findings, showing that community control variables effectively mediate the relationship between crime and most of the structural variables, including residential stability, socioeconomic status, and racial and ethnic heterogeneity.

The assumption of ecological stability was questioned by longitudinal studies. Shaw and McKay's social disorganization model was based on the assumption that a stable dynamic of ecology characterized the city of Chicago. The features of local communities in Chicago were determined by the "natural" process of invasion, conflict, and succession. According to this approach, a socially-disorganized community will experience a stable ecological process, leading to chronically high rates of crime. This "residential succession" discovered in Shaw and McKay's (1942) research showed that rates of juvenile delinquency in the transitional zone were high and

stable, regardless of the racial/ethnic change in the community members.

However, Bursik and Webb (1982) noticed that after World War II a massive demographic change occurred in Chicago. Prior to the 1950s, when Shaw and McKay studied, traditionally unstable areas that existed within the transitional zone provided new immigrants with inexpensive housing. Furthermore, black immigrants were forced to settle in the "black belt," a residential section segregated from whites, and the belt did not expand much between 1920 and 1950 (Bursik and Webb, 1982). After 1950, however, the black population rapidly increased in Chicago, primarily because employers attracted blacks from the South in order to meet labor demands. Furthermore, as a result of the decisions by the U. S. Supreme Court which prohibited racial discrimination in housing (e.g., *Shelley v. Kraemer*, 1948; *Hurd v. Hodge*, 1948), blacks began to move to residential areas that were previously populated by whites. Unlike the gradual change based on stable urban ecological process, the racial turnover in these areas was massive and occurred within a very short period of time. As a result, social disorganization in these areas occurred at a more rapid rate. Bursik and Webb (1982:39-40) argued that "when the existing community changes almost completely within a very short period of time, the social institutions and social networks may disappear altogether or existing institutions may persevere in the changed neighborhood but be very resistant to the inclusion of new residents." This hypothesis was supported by findings that juvenile delinquency rates were highest between 1950 and 1960, when these rapid changes occurred. Juvenile delinquency rates then declined between 1960 and 1970, when these communities became stabilized by the reestablishment of social control (Bursik and Webb, 1982). Although the basic approach regarding the relationship among racial turnover, social disorganization, and high crime rates did not deviate from Shaw and McKay, Bursik and Webb attempted to show more dynamic aspects of community changes by urban development.

Similarly, Schuerman and Kobrin (1986) also challenged assumptions of community stability made by earlier urban ecologists. Using a developmental model, they examined the twenty-year histories of Los Angeles County's high crime areas. Their findings showed that changes in community structural characteristics (i.e., shifts from single- to multiple-family dwellings, residential mobility, family disruption, and the proportion of non-white) preceded emerging increases in crime rates. As these neighborhoods then entered into their enduring stage, high rates of crime had preceded further neighbor-

hood changes. These studies based on urban development suggested a new approach to overcome the problem of Shaw and McKay's model, which could be interpreted as valid only in the stable urban ecological setting before 1950. As Bursik (1986:36) stated:

"Contrary to Shaw and McKay's assumption of stability, the ecological structure of Chicago has been in a period of reformulation for several decades. Of primary interest, however, is the degree to which these new dynamics are reflected in the delinquency rates of local communities. Shaw and McKay's concept of social disorganization would predict that neighborhoods characterized by rapid ecological redefinition will also be likely to experience significant increases in their delinquency rates. If this is not the case, then the notion of social disorganization may have been peculiar to a specific historical context and of no current value in theoretical models of crime and delinquency."

As opposed to Shaw and McKay who saw social disorganization as an outcome of a natural ecological process, Bursik (1986) argued that social disorganization could result from the dynamics of political decision-making processes. For example, he pointed out that the process of suburbanization expanded the suburban areas, which significantly changed the ecological structure of the central city.

Suburbs, Structural Changes, and Crime

The transition zone and its structural factors have been the focal points in the studies of early social ecologists in Chicago and later of scholars in the ecological perspectives of crime. In contrast, suburban areas, which are placed at the outside of the concentric zones (Zone IV or V) according to the Chicago School scholars, have not drawn much attention in studies of crime. A lack of attention is derived from the assumptions that suburbs are dominated by the white middle-class and are crime-free areas.

Popenoe (1988:394) defined a suburb as a "community that lies apart from the city but is adjacent to and dependent upon it." In other words, though suburbs are physically separate from the city, they economically and culturally rely on it. In his book, *Trouble in Paradise: The Suburban Transformation in America*, Baldassare (1986) provided four characteristics of suburban areas. First, suburbia is located in surrounding areas of a major central city. Second, the primary economic activities are nonagricultural. Third, although the population density is lower than the major city, a suburban area should be highly populated. Finally, it is politically and economi-

cally fragmented. A better understanding of the suburbs, however, requires the knowledge of how the central city has changed the features of suburbs through the history of urban development.

Baldassare (1992) divided the history of suburbs into three eras: the early urban-industrial, the late urban-industrial, and the metropolitan eras. During the early urban-industrial era, suburban areas emerged as the result of rapid population increase in the central city during the early twentieth century. As poor immigrants rushed into cities and living conditions became deteriorated, many residents of the inner city areas moved to the outer zones of the city, searching for a better residential environment. Urban ecologists explained this phenomenon by the process of "invasion and succession" (Park , 1925) and the "concentric model" (Burgess, 1925). Residents abandoning the central business districts formed a new residential area, the "commuter zone," located outside of the concentric zones. The early suburban areas were dominated by expensive houses owned by white, family-oriented, and middle class inhabitants.

In the 1950s and 1960s, as the late urban-industrial era began, suburban areas dramatically expanded. This expansion occurred while urban areas witnessed a substantial increase in social problems, including high crime rates, unemployment, and racial conflicts. The movement of the white middle class to suburban areas accelerated as they attempted to escape the deteriorating conditions of inner cities. In addition to this natural ecological process (invasion, conflict, and succession), suburbanization during this era was precipitated by "non-natural" factors. Bursik (1986) viewed suburbanization as a result of the political decision-making process, which affected changes in the structural features of central cities. The rapid growth of the suburbs was caused in part by the government's efforts to fund the construction of interstate highways, which reduced the time and cost for commuting from the suburbs to the inner city (Palen, 1995; Stanback and Knight, 1976). Furthermore, the increase in private automobile ownership, as a result of advanced technology and price reduction, also facilitated the movement of city workers to suburban areas (Palen, 1995).

The role of the suburbs as residential areas for city workers, however, experienced a change in the 1970s when central cities and their outer zones became combined into metropolitan areas. Manufacturers pursuing lower rents, taxes, and labor costs began to move from the inner city to suburban areas (Baldassare, 1992). As the suburbs provided both job opportunities and residences, more city dwellers moved to suburban areas. Accordingly, suburbs became economically and socially independent from cit-

ies and became "the dominant metropolitan economic and social units" (Palen, 1995:9), as suburban residents could commute to work within the suburbs rather than drive into the central city.

Suburbs have been regarded as homogeneous communities where predominantly white, family-oriented, and middle-class homeowners reside. Baldassare (1986:30) described the image of a typical suburb as the following:

"Suburbia is supposed to be a white middle class settlement. Households are to be filled with two parents and two or more children. Their homes are owned or, more accurately, mortgaged. The inhabitants are surrounded with automobiles, appliances, and luxuries. One adult, the male, is working, and the other adult, the female, is engaged in housekeeping and child rearing."

Since the 1970s, people moving to the suburbs in search of employment opportunities did not have the same socioeconomic characteristics as those during the early twentieth century. As a newly-emerging business area, the suburbs demanded various workforces ranging from low-skilled workers to high-skilled experts, and many nonwhites began to reside in suburbs. As a result, suburbs became both racially/ethnically diverse and economically diverse. At the same time, as Baldassare (1986) pointed out, different land uses within the suburbs diversified the value of land. For example, land value was lower in areas near manufacturing factories. Low-income workers could find affordable residences in these areas. Non-traditional family structures, such as female-headed households and unmarried single households, also became more prevalent. In addition, the growth in the number of working women demanded a fundamental change on the outdated stereotype of working fathers and housekeeping mothers. Finally, the proportion of home ownership was also lowered. Low-income workers or unmarried singles preferred to rent homes, not only because of their economic affordability, but also because they required less residential stability. Consequently, residential stability represented by high rates of home ownership could no longer be a characteristic of the suburbs, at least for some neighborhoods. In sum, industrialization and population increases diversified the structural characteristics in suburban areas. This enhanced racial/ethnic diversity, increased economic diversity, decreased traditional family structures, and diminished residential stability.

Although the suburbs became far more diversified in terms of structural characteristics, it did not mean that immigrants with diverse characteristics were evenly distributed over the entire geography of suburbs. The uneven residential distribution has been explained by two theories (assimilation and place stratification). Assimilation

theory posits that market principles rule the allocation of residential locations (Massey, 1985). Briefly speaking, people of high socioeconomic status live in better residential areas because they can afford to acquire expensive residency in the areas. People with a lack of resources have no choice but to live in less desirable communities. On the contrary, the proponents of place stratification theory do not see the distribution of residency as a simple matter of market principles. They argue that residential areas are not allocated based on natural market competition, but are distributed by some advantaged groups' willingness to preserve the monopoly of particular areas by segregating people who have different characteristics (Logan et al. 1996; Massey and Denton, 1988; South and Crowler, 1997). Place stratification theory views an individual's race as the most significant factor in the decision-making of residency in suburbs. The effect of socioeconomic status on the residency distribution is regarded as contingent upon race. South and Crowler (1997) argued that although socioeconomic status affected the ability to move out of poor areas for both blacks and whites, efforts to escape from poor neighborhoods were easier for whites. By comparison, blacks were more likely to end up moving into another poor community (Logan and Alba, 1995).

Suburbs have been regarded as regions that do not suffer from many urban problems like crime. However, as structural characteristics were altered by industrialization and population growth, suburbs began to witness a decline in the quality of life and an increase in neighborhood problems (Baldassare, 1986; Cervero, 1986). Some studies have paid attention to the associations between structural characteristics and crime rates in suburbs. These studies attempted to explain the growth of suburban crime by the suburbanization of minorities (Alba and Logan, 1991). For example, Stahura and his associates (1980) found that the percentage of low-income population was the strongest determinant of both violent and property crime rates. In addition, the percentage of blacks, population density, and the employment/residence ratio all affected crime rates. Similarly, Stahura and Sloan (1988) found that crime rates were high in suburbs with a high percentage of black population and high unemployment rates.

Other studies laid a greater emphasis on the association between racial composition and crime rates. Logan and Stults (1999) argued that while whites who moved to the suburbs were more likely to live in places with low crime rates, blacks were located in particular areas where crime rates were not much lower than those of the central city. They also revealed that even affluent blacks were exposed to twice as much violent crime rates as poor whites. Alba and his associates (1994) reached a similar conclusion after examining crime rates in 352 suburbs. They found that three community variables (the percentage of blacks, the percentage of the poor, and population size) were strong determinants of individual and racial group variations in exposure to crime. They concluded that no matter what their individual socioeconomic characteristics were, blacks were exposed to more crime, because they tended to live in high crime communities. Findings of these studies presented contradicting results in terms of causal direction between racial composition and crime rates. While some studies showed that the growth of the minority population resulted in high crime rates, others proved that minorities (blacks) were simply located in areas with high crime rates. In a response, Liska and his associates (1998) examined the reciprocal effects of racial composition and crime rates in suburbs. Their study also showed that the effect of violent crime rates on racial composition was greater than that of racial composition on violent crime rates.

Social Disorganization Theory beyond Urban Areas

Despite the abundant studies testing social disorganization theory, only a few scholars have paid attention to areas outside of metropolitan areas. Osgood and Chambers (2000) tested social disorganization theory in 264 non-metropolitan counties in Florida, Georgia, South Carolina, and Nebraska. They justified their attempts to generalize the urban ecological theory to non-urban areas with two reasons. First, following the interpretation of social disorganization theory by Kornhauser (1978) and other scholars who had emphasized social control mechanisms in communities, Osgood and Chamber stressed the disruption of informal and formal community control networks as the primary condition for high crime rates. They also pointed out the irrelevance of this condition within geographic areas (i.e., urban versus rural areas). In the end, it is the criminogenic condition that matters, not the geographic area. Second, they noted that rapid population growth in rural areas weakens social ties, just as early urban ecologists had witnessed. Furthermore, given the greater reliance upon informal social control through social networks in rural areas, the effect of waning social control as a result of disrupted social relations would be more detrimental in rural areas than in urban areas (Osgood and Chamber, 2000; Wilkinson, 1984). Osgood and Chamber (2000) found that while juvenile violence was significantly associated with residential mobility, ethnic heterogeneity, and family disruption —supporting

the generality of social disorganization theory—poverty was not related to juvenile violence. Regarding the non-effect of poverty, the authors inferred that poorer communities in rural areas were more stable than their affluent counterparts, due to the lack of resources that made it difficult to leave the communities.

Recently, Bouffard and Muftić (2006) attempted a similar approach by testing social disorganization theory within 221 non-metropolitan counties in the upper-Midwest region. Their findings revealed that violent offenses were significantly related with residential mobility and family disruption, but that there was no significant association between violent offenses and heterogeneity. Poverty was negatively related with violent crime. This finding deviates from the proposition made by social disorganization theory, but is consistent with the findings of Osgood and Chamber (2000).

In the current study, we were interested in whether social disorganization theory could be applied to suburban areas. These areas, classified as Zone V or VI by urban ecologists, can sometimes become a part of a metropolitan statistical area as the central city expands. Our approach using the block group as the geographic unit of analysis was more microscopic than in previous tests of social disorganization theory in non-metropolitan areas. Additionally, our measure of crime is the number of calls generated by citizens, unlike previous studies that relied on official crime data. The reason for this innovative measure was that the validity of official crime data has often been questioned, because it may represent "official reactions to crime" rather than an actual measure (Warner and Pierce, 1993:494). In other words, higher crime rates may represent nothing more than a strong willingness for social control exhibited by the police within that area. Police call data are exempt from this problem, as they are originated from direct requests made by citizens. Furthermore, calls for service better reflect what citizens actually view as crimes or problems (Warner and Pierce, 1993). Many events reported to police do not meet the requirements for police officers to file official reports. The decision about whether a reported event will be officially filed or dropped is heavily dependent upon police discretion. In this decision-making process, how the police define the event is more important than how the complainant defines it. However, as Warner and Pierce (1993:497) illustrate, how the complainants view the event may prove of greater importance than how police define the event, as "it is the citizens of the community who must live with crime and decide whether it is worthy of official action." Warner and Pierce (1993:497) further explain that "without a screening process by the police,

calls for service are more likely to reflect problems in terms of callers' viewpoints."

The current study also examines the effects of social disorganization indicators upon other social problems, such as incivilities and social service demands. Although various reasons can motivate a call for service, only crime-related calls have been dealt with in the previous studies. Albert Reiss (1985) made the distinction between "hard crime" (e.g., more serious predatory offenses) and "soft crime" (e.g., incivilities). The importance of incivilities has been widely discussed in the literature, especially by the proponents of community policing. Wilson and Kelling (1982) argued that neighborhood disorders indicate a lack of care from community residents and increase fear of crime. An increased fear of crime accelerates the neighborhood's deterioration, as people abandon the area or withdraw from social relations within the community. The deteriorated neighborhood begins to attract more motivated offenders. Without proper social control, this will ultimately increase crime rates. Many studies supported this idea by showing that neighborhood disorders were significantly related with rates of crime and fear of crime among residents (Pate et al., 1986; Skogan, 1990). Thus, we can expect that areas with high crime rates may correspond to those with high disorder problems. Indeed, Weisburd and Mazerolle (2000) revealed that drug hot spots experienced disorder problems as well as high crime rates. Similarly, Weisburd et al. (1992) found that the generation of calls for service for crimes including assault and robbery were correlated with disturbance calls.

Hypotheses

In this study, we tested the following four hypotheses:

Hypothesis 1: Crime, disturbance, and demands of civil service are positively related with poverty in suburban areas.

Hypothesis 2: Crime, disturbance, and demands of civil service are positively related with racial/ethnic heterogeneity in suburban areas.

Hypothesis 3: Crime, disturbance, and demands of civil service are positively related with residential mobility in suburban areas.

Hypothesis 4: Crime, disturbance, and demands of civil service are positively related with family disruption in suburban areas.

Data and Sample

This study used calls for service (CFS) as an indicator of crime and social problems, and collected data generated from January 1st to December 25th, 2003 in four suburban Texas cities. Ten police agencies in Texas have gathered and managed CFS using a data management system called *CRIMES* (Criminal Research Information Management Evaluation System) developed by the Police Research Center in the Criminal Justice Center at Sam Houston State University. The fields in the data included call source, call type, call disposition, date/time, address, and police number. The four cities chosen for this study meet the definition and characteristics of a suburb proposed by Popenoe (1988) and Baldassare (1986). All four cities are located near major central cities in Texas, including Dallas, Houston, and San Antonio. The longest distance from a major central city is 25 miles. The major industries in these cities are non-agricultural, and include retail trade, professional/technical service, accommodation, and food service. The population densities, ranging from 1,499 to 2,628, are lower than the major central cities (i.e., 3,469 in Dallas, 3,371 in Houston, 2,808 in San Antonio). Finally, all four cities are separated from the central cities with their own municipal governments (See Appendix A for further information on each city).

Since the CFS data contain numerous cases irrelevant to the purpose of the current study, a careful data-cleaning process was required. First, calls without addresses were screened out, because it was impossible to identify the geographic locations through geocoding. Second, all the "field-generated calls" were excluded, because they were not generated by citizens but made by officers for administrative purposes. Third, calls were eliminated from analysis if a call type was not assigned in the data, since this study attempted to examine differences in geographic distributions by categorizing calls into three types (crime, disturbance, and civil service calls). This study also excluded calls that did not fall under the three types, such as administrative calls (e.g., back-up requests) and unidentified calls (e.g., 911 hang up). Fourth, this study identified and filtered out all the calls made from police departments and local hospitals/medical clinics. These were the most frequent locations where police officers were dispatched to take a report.[1] However, these addresses reflect the address where calls were made rather than the addresses where the problems actually occurred.

The final stage of the clean-up process was geocoding, the process to match street addresses in the CFS with a reference file (e.g., street file). Calls failing to match the street addresses in the reference file couldn't

be viable for analysis because their locations were not geographically identified. The percentage of calls that successfully matched the street addresses in the reference file was referred to as a "hit rate" (Paulsen and Robinson, 2004:258). Although it was desirable to obtain a high hit rate to maintain more representative data, the problem of unmatched calls was inevitable. For example, police officers often used well-known place names rather than the exact addresses. In addition, simple misspelling or omission of a letter could cause unmatched calls because geocoding required accurate and full street addresses for a successful matching. The hit rates were moderate in the first three cities and ranged from 79% to 93%. The fourth city, however, showed relatively low hit rates: 79% for crime calls, 74% for disturbance calls, and 44% for civil service calls. Despite the potential problem of a non-representative sample, the city with lower hit rates was included to keep the minimum number of cases required for an analysis. Furthermore, with only three block groups from the fourth city included in the analysis, the potential harmful effect of the low hit rates was anticipated to be weak. After screening out irrelevant or un-geocoded calls, the total number of calls available for analysis in the four cities was 19,076.

The structural correlates were measured using the 2000 Census Summary File 3, which includes social, economic, and housing characteristics compiled from questions asked of a sample of about 19 million housing units (U.S. Census Bureau, 2004). Summary File 3 provided tables both for block group level and census track level, and this study used block group level tables. In order to identify geographic locations of calls, Census 2000 TIGER/line shapefiles were utilized as the reference map documents. Given that block groups were the unit of analysis, the block group 2000 data layer was employed as the reference map document.

Although there are eighty-four block groups in the four suburbs, not every block group was appropriate for the analysis. Some block groups did not match the city boundaries because they bordered on the neighboring jurisdictions. In other words, only a certain part of the block group belonged to the city, and the rest of the block group was subject to the adjacent jurisdiction. Therefore, CFS data that were gathered only within the city boundary were not compatible with the demographic characteristics measured in a block group. Block groups were included in the sample if more than 90 percent of the population lived within the city boundary. The block-level demographic data of the 2000 Census Summary File 1 were used to assess block group populations within and out of the city boundary. After excluding twenty-nine block

groups, whose populations living outside of the cities were equal to or greater than 10 percent, fifty-five block groups became available for the study.

Measures

The dependent variable was CFS. All the calls were assigned into three types: crime, disturbance, and civil service. Crime calls were related with an actual occurrence or a threat of crime. Disturbance calls were related with physical or social incivilities such as loud music, loud noise, and abandoned property (Skogan, 1990). Civil service calls covered general assistance activities, including emergency medical service (EMS), traffic, fire, and other non-crime related services.

The structural correlates included three indicators of social disorganization (poverty, residential mobility, and racial/ethnic heterogeneity), as well as one indicator of family disruption. First, the economic level of a community was one of the major indicators of social disorganization (Kornhauser, 1978). Shaw and McKay (1942) concluded that delinquency rates were highest in the most disadvantaged areas, represented by high percentages of families on welfare, low median incomes, and low percentages of home ownership. In poor communities, various social institutions lacked money and resources to maintain their adequate functions, undermining the interrelation among institutions. This ultimately leads to a breakdown of social control. The measure of poverty in this study was the proportion of households in each block group living below the poverty level.

Second, Shaw and McKay (1942) argued that in areas with high residential mobility, common interests could hardly be developed, leading to a breakdown of social control. Furthermore, population turnover made it difficult to establish common interests. Existing common interests, if any, had to be constantly renewed, as new community members were introduced (Kornhauser, 1978). In this study, residential mobility was measured by the proportion of households that had not lived in the same house for the past five years.

Third, a racially or ethnically heterogeneous community was likely to fail in developing effective informal networks of social control. In such a community, diverse norms and cultures coexisted, leading to a lack of cohesion and integration among community members. Without finding common interests, the community would experience a breakdown of social control. With regard to its definition, racial/ethnic heterogeneity should not be understood as the proportion of foreign-borns or non-whites (Smith and Jarjoura, 1988). For example, if 90% of the residents in a community are black, that community

is substantially homogenous. On the contrary, if 50% of the residents in a community are white and 50% are black, that community is as heterogeneous as possible. In this sense, Blau (1977:78) defined racial heterogeneity as "the chance expectation that two randomly chosen persons do not belong to the same group, which takes both number of groups and the distribution of the population among them into account." Racial/ethnic heterogeneity was calculated by "$1-\sum p_i^2$" when p_i was the proportion of the population in a given racial group. This study took into account eight racial/ethnic groups, including non-Hispanic white, black, Hispanic, American-Indian (and Alaska native), Asian, Native Hawaiian (and other Pacific Islander), and two or more races.

The last structural correlate was family disruption, measured by the percentage of households headed by a female householder (no husband present) with children under 18 years of age. Sampson (1985, 1987) argued that areas with high levels of family disruption undermined an effective network of social control over juveniles' behaviors. Sampson (1987:353) contended that family disruption could weaken formal social controls through "a weakening of formal and voluntary organizations, many of which play crucial roles in linking local youths to wider social institutions and in fostering desired principles and values." Sampson (1985) also argued that family disruption could diminish informal social controls because a lack of acquaintance among families in the neighborhood reduced the chance to watch out for juveniles' delinquent activities (1985).

Findings

We conducted negative binominal regression, which is a variant of Poisson regression. Both negative binominal regression and Poisson regression are widely used for analyzing event counts, as they can account for observed heterogeneity. However, negative binominal regression is more appropriate than Poisson regression in the common situation where the cases of interest are overdispersed, namely, where the variance is greater than the mean (Long and Freese, 2003). Three types of CFS (crime, disturbance, and civil service) were regressed on structural variables (poverty, residential mobility, racial/ethnic heterogeneity, and family disruption). Given the small sample size (N=55), one or two blocks with extreme values may seriously distort the test result. Using Mahalanobis distance, one multivariate outlier (significant at $p < .001$) was detected and eliminated. This left fifty-four block groups for the analysis.

Table 1 displays descriptive statistics for the dependent and independent variables. The average number of

Table 1. Descriptive Statistics for Variables									
	Total (N = 54)		City I (N = 29)		City II (N = 10)		City III (N = 12)		City IV (N = 3)	
Variables	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Crime call	72.76	48.87	64.90	33.49	44.30	23.93	108.25	64.20	101.67	92.61
Disturbance call	106.78	83.15	121.83	73.29	13.20	7.93	134.58	83.04	162.00	116.28
Civil service call	132.67	110.05	108.10	65.53	62.20	37.06	227.75	147.72	224.67	184.72
Poverty	.05	.04	.06	.04	.01	.02	.07	.05	.03	.02
Mobility	.51	.16	.55	.19	.47	.09	.51	.07	.28	.07
Heterogeneity	.38	.19	.43	.17	.17	.10	.48	.09	.15	.08
Family disruption	.06	.04	.07	.04	.01	.02	.07	.04	.03	.01
Population	1426.20	785.33	1390.90	758.08	1668.40	799.09	1264.33	869.54	1607.67	864.99

CFS in the fifty-four block groups was approximately 73 for crime, 107 for disturbance, and 133 for civil services. While City II generated the smallest number of CFS in all three call types, City III showed the greatest number of calls for both crime and civil service. More disturbance calls were made in City IV than in any other city. Consistent with social disorganization theory, all social disorganization indicators were above average in City III and below average in City II. Residential mobility was lowest in City IV, but it was similar in the other three cities. Interestingly, despite having the greatest number of disturbance calls, City IV showed a low social disorganization level.

Table 2 displays the zero-order correlation matrix for all variables. Supporting social disorganization theory, poverty and heterogeneity were significantly and positively correlated with all three types of CFS. Consistent with Sampson's (1985, 1987) studies, family disruption showed a significantly positive correlation with all three dependent variables. However, residential mobility was not significantly correlated with any type of CFS. The independent variables including the indicators of social disorganization and family disruption were significantly correlated. The strongest correlation was 0.66 between

heterogeneity and family disruption, followed by 0.61 between poverty and heterogeneity and 0.60 between poverty and family disruption. Other correlations among independent variables did not exceed 0.40. Given the strong correlations among independent variables, a preliminary analysis was conducted to address multicollinearity before the regression analysis was executed. The value for tolerance ranged from 0.45 for heterogeneity to 0.83 for mobility, and the value for the variance inflation factor varied from 1.21 for mobility to 2.24 for heterogeneity. According to these statistics, multicollinearity was not problematic. Finally, the three types of CFS were strongly correlated. Block groups with a higher number of crime calls were more likely to be areas where more disturbance calls and more demands for social services occurred.

Table 3 shows the effects of structural variables on the number of CFS. Regression model 1 included only three indicators of social disorganization (poverty, residential mobility, and racial/ethnic heterogeneity). In Model 2, family disruption was added in order to examine its effect on CFS and on the coefficients for the indicators of social disorganization. The likelihood-ratio tests revealed significant evidence of overdispersion for CFS, indicating

Table 2. Zero-Order Correlation Matrix (n = 54)								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1. Crime call	1.00							
2. Disturbance call	.83 **	1.00						
3. Civil service call	.94 **	.80 **	1.00					
4. Poverty	.28 *	.44 **	.29 *	1.00				
5. Mobility	.05	.12	-.01	.18	1.00			
6. Heterogeneity	.34 *	.45 **	.35 **	.61 **	.39 **	1.00		
7. Family disruption	.39 **	.55 **	.30 *	.60 **	.31 *	.66 **	1.00	
8. Population	.40 **	.21	.34 *	-.25	.35 *	-.02	-.03	1.00

*p < .05 (two-tailed). **p < .01 (two-tailed)

	Crime		Disturbance		Civil service	
	Model 1 b (Std. error)	Model 2 b (Std. error)	Model 1 b (Std. error)	Model 2 b (Std. error)	Model 1 b (Std. error)	Model 2 b (Std. error)
Variables						
Poverty	4.97 * (2.06)	3.49 (2.07)	6.82 * (3.31)	4.49 (3.21)	6.40 ** (2.42)	5.50 * (2.51)
Mobility	-1.25 * (0.51)	-1.40 ** (0.50)	-1.09 (0.75)	-1.57 * (0.70)	-1.98 ** (0.57)	-2.12 ** (0.58)
Heterogeneity	1.12 * (0.50)	.68 (0.51)	1.49 (0.81)	.82 (0.77)	1.72 ** (0.57)	1.45 * (0.59)
Family disruption		5.46 * (2.16)		11.04 ** (3.25)		3.40 (2.52)
Population	.48 ** (0.10)	.47 ** (0.09)	.36 * (0.15)	.37 ** (0.13)	.53 (0.11)	.52 ** (0.10)
Intercept	3.47 ** (0.26)	3.49 ** (0.24)	3.69 ** (0.38)	3.61 ** (0.33)	4.03 ** (0.29)	4.06 ** (0.29)
Log-Likelihood	-259.69	-256.57	-296.35	-290.79	-294.47	-293.56
Likelihood Ratio χ^2	665.49 **	605.29 **	2047.27 **	1780.37 **	1891.77 **	1871.48 **

Table 3. Negative Binomial Regression Results for Calls for Service in 54 Block Groups in Texas Suburbs

* $p < .05$ (two-tailed). ** $p < .01$ (two-tailed)

that the negative binomial regression model was more appropriate than the Poisson regression model.

All three indicators of social disorganization had a significant effect on the amount of crime calls. The effect of poverty was relatively stronger than others. However, mobility was negatively related with crime, contradicting our hypothesis. The number of crime calls was greater in areas with low residential mobility. In Model 2, the addition of family disruption changed the effects of the social disorganization indicators found in Model 1. While family disruption showed a positive and significant association with crime, the effects of poverty and heterogeneity on crime became non-significant once family disruption was included. The effect of mobility, however, remained negative and significant, even after the inclusion of family disruption.

In terms of disturbance calls, poverty was the only indicator of social disorganization that showed a significant relationship. A higher poverty level predicted a greater number of disturbance calls. In Model 2, family disruption had a positive and significant relationship with the number of disturbance calls. A noticeable finding was that the addition of family disruption rendered the effect of poverty non-significant but the effect of mobility became significant. Like crime calls, disturbance calls were generated more frequently in areas with lower residential mobility.

The three indicators of social disorganization were significantly related with civil service calls. More calls for civil services were generated from poorer, racially-diverse, and less mobile areas. Furthermore, the magnitude of the coefficients was greater than in the regression models of crime calls and disturbance calls. These relationships did not lose statistical significance even when the family disruption variable was introduced to the model. The addition of family disruption to the model did not substantially change the coefficients for the social disorganization indicators. This occurred in part because family disruption did not significantly explain the variance in civil service demands.

Discussion and Conclusions

The hypotheses derived from social disorganization theory have been tested mostly in large cities, and the empirical results generally supported the theory. Repeatedly, previous studies found that crime rates were higher in poor, unstable, and racially heterogeneous neighborhoods. Later, Sampson (1985, 1987) improved the explanation power of social disorganization theory by adding another variable to the model—family disruption. In the current study, social disorganization theory was

tested in a different setting—the suburban area. Given the rapid socioeconomic changes primarily precipitated by suburbanization, it was assumed that suburbs had gone or were going through an ecological process similar to the one experienced by large cities. This process could make particular neighborhoods more socially disorganized, and hence more vulnerable to various social problems. Unlike most previous studies, this study employed calls for police service as indicators of crime and other social problems. Finally, this study examined whether social disorganization theory could account for variances in the problem of disturbances and the demand for civil services as well as crime.

Consistent with findings in the previous studies, poverty showed a positive relationship with crime occurrence. Furthermore, disturbances and civil service demands (e.g., EMS) were also higher in areas with a higher poverty level. Once family disturbance was included in the model, the positive relationships between poverty and both crime and disturbance were washed away, whereas the relationship between poverty and civil services remained significant. Racial/ethnic heterogeneity was positively related with crime and civil services, but not with disturbances, partly supporting the hypotheses. The relationship between heterogeneity and crime became insignificant when family disruption was included in the model. Wilson (1987) noted that female-headed families were more vulnerable to poverty than any other type of family. His argument was based on 1982 statistics when the poverty rate for female-headed families was 36.3 percent, while it was only 7.6% for families with married couples. Furthermore, the poverty rate was substantially higher for minority female-headed families (i.e., 56.2% for Hispanic families and 55.4% for black families). Thus, the correlations of family disruption with poverty and heterogeneity may exert intervening effects on the initial social disorganization model.

The most unexpected findings were the negative relationships between residential mobility and CFS. Mobility showed significant relationships with crime and civil services, but in the opposite direction of what was hypothesized. Furthermore, the relationships remained significant even after taking into account family disruption. These results were unexpected, but were not unprecedented. Warner and Pierce (1993), also using CFS, found that mobility was inversely associated with assault rates. A further analysis revealed that the interaction term of poverty and mobility had a significant relationship with crime rates, with the highest crime rates in neighborhoods with high poverty rates and low mobility. They reasoned that poor neighborhoods in most cities today tended to be

the most stable areas because the residents had no choice but to stay there primarily due to a lack of resources.

Ross et al. (2000) also found that the effect of residential stability upon levels of distress among residents was contingent upon poverty level. While a stable neighborhood reduced the level of distress in affluent communities, the same residential stability resulted in higher levels of distress in economically disadvantaged neighborhoods. They concluded that the prevalent physical and social incivilities in poor neighborhoods, coupled with the absence of resources to improve conditions, raised the levels of distress when associated with a sense of inability to escape the undesirable situation.

Wilson (1987) called this social phenomenon "concentration effects" in inner-city neighborhoods during the 1970s and 1980s. As the middle- and working-class escaped from distressed areas in inner cities, the areas became dominated by the most disadvantaged people who could not afford to move out. The loss of middle- and working-class families, which served as "social buffers" against depraved economic conditions, resulted in not only steady economic depression but also a malfunction of basic social institutions and a breakdown of the social control system. It was these areas where the highest rates of crime and other social problems were found. Furthermore, when the place stratification perspective was applied, the probabilities of minorities in distressed neighborhoods to move out diminished even more. South and Crowder (1997) argued that even the most educated blacks were less likely than the least educated whites to move out of poor areas due to the racial segregation of the residency in metropolitan areas.

Indeed, given that the concept "concentration effects" emerged in urban areas to explain economically disadvantaged minority neighborhoods, caution is required when applying the same concept to suburban areas. However, recent trends in the concentration of poverty show that despite the overall great decline in poverty in the United States between 1990 and 2000, the decline in poverty was slowest in suburbs. While the population in high-poverty areas between 1990 and 2000 dropped by 47% in non-metropolitan areas and 21% in central cities, the population in high-poverty areas only declined by 4% in suburbs (Jargowsky, 2005). Furthermore, a greater concentration of poverty was reported "along the outer edge of central cities and in the inner-ring suburbs of many metropolitan areas" (Jargowsky, 2005:157).

Like inner-cities, distressed neighborhoods in suburbs were also more likely to be dominated by disadvantaged minorities, who could not escape to a better place, either due to lack of economic resources or residential segrega-

tion. In contrast, whites living in affluent neighborhoods might enjoy more freedom to change their residences. In conclusion, the inverse relationship between mobility and the rates of crime, disturbance, and social service can be explained by a relatively long stay of disadvantaged people in distressed neighborhoods. As Warner and Pierce (1993) suggested, we need to reconsider the meaning of mobility in social disorganization theory, because urban areas are now somewhat different from when the original model of social disorganization was developed earlier in the century.

However, several methodological limitations require careful interpretation of the outcomes in the current study. First, when spatial units of analysis (e.g., census blocks) are used, one of the most critical issues is spatial autocorrelation. Given that a geographic unit is surrounded by other adjacent units, the value in one area may be dependent on those in the adjacent areas. For example, a high number of CFS in one block group may be a result of its location, whereby it is affected by neighboring block groups which generate many police calls. This association is called "positive spatial autocorrelation" (Paulson and Robinson, 2004). A regression model assumes that the residuals are independent. A positive spatial autocorrelation will lead to underestimated standard errors, thus resulting in an inflation of values of test statistics (t and F). This may generate Type I errors by mistakenly concluding that variables are significantly related when they actually are not (Martin, 2002). In a preliminary analysis, Moran's I tests were conducted to examine the degree of spatial autocorrelation in CFS in each city. A significant spatial autocorrelation was detected only in City III, but not in the other areas.

Second, the current study used block groups as the unit of analysis. However, these geographic units were developed and administered by the Census Bureau in an arbitrary way. Because they were created for administrative or governmental purposes, they may not represent actual neighborhoods. Third, the variability of the dependent variables is limited because of the small number of cases. Limited variability in the dependent variables could hinder the detection of an association with predictors. Fourth, given the specific area where the sample was drawn, the study findings may be limited in generalizability. Fifth, we could not measure key community control variables that may mediate the effects of social disorganization variables on CFS variables. Finally, although it is desirable to analyze multiple years of data to account for annual fluctuations, the current study used only one year of data because of limitations in data availability.

In conclusion, this study found that structural characteristics could explain the variation in crime and other types of social problems in suburbs. Diversification in structural features in these areas, accelerated by rapid suburbanization, not only resulted in the increase in overall crime rates, but their spatial concentration in "socially disorganized" areas, just as inner cities had experienced. In this sense, suburban areas appeared to go through an ecological process that was similar to Chicago's in the 1920s. However, this study revealed differences between Chicago and the suburbs in regard to the influences of social disorganization factors on crime. As previously discussed, residential stability, not residential mobility, was a predictor of high crime rates in suburbs. Membership changes in distressed suburban neighborhoods occurred less frequently than in 1920s Chicago, which was in the middle of social turmoil. In addition, while high crime areas in Chicago in the 1920s were populated by diverse racial/ethnic groups who emigrated from different foreign countries, those in contemporary suburbs were occupied by more homogeneous groups, mostly blacks and Hispanics, who moved from inner cities. This difference was supported by the non-significant or weak effects, if any, of racial/ethnic heterogeneity upon crime and other social problems in this study. However, these findings and their implications are limited because of the methodological drawbacks mentioned above and the limited number of suburbs sampled in a non-random manner. Most importantly, with the small number of cases and the lack of generalizability, the results of this study should be understood as exploratory rather than confirmatory. Future research is recommended to draw more attention to crime in suburban areas and to apply better methodologies to improve generalizability.

Endnotes

1. Other potential problems of police call data include over-reporting when one incident results in multiple calls (e.g., a gunshot), misinterpretation by 911 operators, various errors in the data-input process (e.g., misspelling), and calls made by mistake or with an intention to lie.

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About the authors:

Sunghoon Roh is an Assistant Professor in the Department of Political Science and Criminal Justice at Appalachian State University. He is currently a Korean police officer and has served as a lieutenant for over ten years. His research interests include ecological criminology, spatial distribution of crime, racial issues in the criminal justice system, and community-oriented policing.

Tae Choo is an Assistant Professor in the Department of Criminal Justice Administration at Middle Tennessee State University. He received his PhD from Florida State University. His research interests include juvenile drug abuse, sexual offenders, corrections, and law enforcement.

Contact information:

Sunghoon Roh (corresponding author): Department of Political Science & Criminal Justice, Appalachian State University, P.O. Box 32107, Boone, NC 28608-2107; rohs@appstate.edu.

Tae M. Choo: Department of Criminal Justice Administration, Middle Tennessee State University, MTSU P.O. Box 238, Murfreesboro, TN 37132; tmchoo@mtsu.edu.

Appendix. Geographic and Socioeconomic Characteristics in Four Suburbs

	City I	City II	City III	City IV
MSA	Dallas-Fort Worth-Arlington	Dallas-Fort Worth-Arlington	San Antonio	Houston-Bay Town-Sugar Land
County	Tarrant	Tarrant	Bexar	Harris
Land area	16.3 square miles	13.1 square miles	5.6 square miles	3.4 square miles
Population	46,005	19,636	14,849	6,880
Race/ethnicity				
White	68.0 %	90.7 %	66.5 %	81.9 %
Black	6.5 %	1.4 %	6.4 %	4.1 %
Hispanic	13.3 %	3.2 %	21.6 %	7.3 %
Others	12.2 %	4.7 %	5.5 %	6.8 %
Median income	$49,582	$117,419	$50,501	$68,431
Median house value	$94,900	$267,100	$93,200	$142,900

Source: U.S. Census 2000

Sticks and Stones and Broken Bones:
The Influence of Parental Verbal Abuse on Peer Related Victimization

Lisa Hutchinson
University of Arkansas at Little Rock

David Mueller
Boise State University

Abstract. *Prior research on the effects of childhood maltreatment has focused primarily on the relationship between physical abuse and its impact on delinquent behavior. Although researchers have recently begun to recognize the importance of and to explore the detrimental effects which psychological maltreatment has on children, little empirical attention has been paid to the possibility that maltreatment may also increase the likelihood of future victimization among children. Drawing on the tenets of differential oppression theory, this study examines whether students who are victims of emotional and/or verbal abuse by their parents are more likely to adapt through the use of passive acceptance, as evidenced by low self-esteem, and subsequently become targets for further victimization at the hands of their peers. Findings indicate that parental emotional and verbal abuse is a significant predictor of peer-related victimization.*

Keywords: peer victimization; parental maltreatment; emotional abuse; differential oppression.

Introduction

Despite growing social prohibitions against cruelty to children, child maltreatment continues to be a serious, albeit low profile, problem in the United States. Child maltreatment can take various forms including neglect, physical and sexual abuse, and lower-level forms of aggression such as verbal and emotional abuse. Because acts of maltreatment typically take place indoors, away from the prying eyes of neighbors and public officials, measuring the true extent of the problem is difficult at best. While many studies have examined the effect of physical abuse, sexual abuse, and neglect, very few studies have investigated the impact of psychological maltreatment, such as verbal and emotional abuse on children. In fact, the true extent of this type of maltreatment is more difficult to document than physical and sexual abuse (Hussey, Chang, and Kotch 2006). However, a study by Straus and Field (2000) found that 10 to 20 percent of toddlers and 50 percent of teenagers have experienced severe psychological aggression by parents, which included acts such as cursing, threatening to send the child away, calling the child dumb, or otherwise belittling them. Given these numbers, it is disturbing that this type of maltreatment is understudied.

Historically, when measures of verbal and/or emotional abuse have been examined, they commonly get lumped into a battery of independent variables rather than isolated as specific topics of interest (see Loos and Alexander, 1997; Finkelhor et al., 2005). Because different types of maltreatments tend to occur simultaneously, that is, they are bundled together as a package, it becomes important for researchers to unravel the specific effects of verbal abuse from other sources of trauma (Browne and Finkelhor, 1986; Finkelhor et al., 2005). It is this type of research that will help to unravel the true effects of verbal and emotional abuse on children, and upon which this study focuses.

The present study is designed to build on current knowledge about child maltreatment by exploring the impact that emotional/verbal abuse has on childhood experiences. Drawing on differential oppression theory (Regoli and Hewitt, 2003), the study seeks to understand whether children who are victims of emotional and/or verbal abuse by their parents are more likely to adapt to the oppression through the use of internalization. The study examines whether these children passively accept their inferior status, suppress their hatred for the abuser, and internalize the hatred. Specifically, the study focuses on examining the common internalizing disorder of low self-esteem to determine the impact of the emotional and verbal abuse; the impact being measured by whether these children are more likely to be victimized by their peers.

Previous Research

A review of the extant literature indicates that a linkage between parental maltreatment and the development

of emotional and behavioral problems among children has been established (Brown, 1984; Duncan, 1999; Gross and Keller 1992; Hart, Binggeli and Brassard, 1998; Heck and Walsh, 2000). For example, Felitti et al. (1998) and Dube et al. (2003) found that adverse experiences during childhood increase the risk for depressed affect, suicide attempts, multiple sexual partners, sexually transmitted diseases, smoking, and alcoholism. Burgess, Hartman, and McCormack (1987) found that maltreated children often exhibit psychosocial ailments such as bed-wetting, stomachaches, fear of being alone, sleep problems, poor self-concept ratings, distrust of others, and psychological withdrawal (Kaufman and Ciccheti, 1989). Hart et al. (1998) found that maltreated children often experienced anxiety, low self-esteem, suicidal thoughts, emotional disorders, antisocial disorders, learning impairments, and poor physical health. In addition to internalizing disorders such as these, child maltreatment has also been associated with delinquent behavior. Trickett and Kuczynski (1986) as well as Paperny and Deisher (1983) found that maltreated children were more likely than non-maltreated children to exhibit higher levels of aggression towards both persons and property.

While there is a documented link between parental verbal abuse and a negative impact on children, identifying this abuse and its impact on children is a daunting task for several reasons. Though many people assume that they "know it when they see (or rather, hear) it," researchers have been unable to reach an agreed upon definition of what constitutes verbal abuse. In the absence of precise definitions, it is difficult to isolate the detrimental effects of this specific type of abuse (Vissing et al., 1991). Second, bystanders often dismiss incidents of verbal abuse as a private matter or as normal parental discipline (Davis, 1996).[1] Third, given its low-profile nature, existing data on parental verbal abuse is often limited to the most egregious cases. Fourth, due to problems of under-reporting, official estimates of the extent of verbal abuse are widely assumed to be speculative and unreliable (Straus and Gelles, 1986). Additionally, Zingraff et al. (1993) noted that prior research has also been confounded by methodological limitations (particularly the use of cross-sectional data), which may help to over-exaggerate the maltreatment-delinquency relationship (see Heck and Walsh, 2000).

One of the few rigorous studies that sought to isolate the main effects of parental verbal abuse on delinquency was a study conducted by Vissing et al. (1991). These authors defined parental verbal/symbolic aggression as "communication intended to cause psychological pain to another person, or a communication perceived as having

that intent" (Vissing et al., 1991:224). The communicative act may be active or passive, and verbal or nonverbal. Examples include name-calling or nasty remarks (active, verbal), slamming a door or smashing something (active, nonverbal), and stony silence or sulking (passive, nonverbal; Vissing et al., 1991).

Vissing et al.'s (1991) data showed that nearly two-thirds of maltreated children experienced some form of verbal aggression, with an average of 12.6 verbal attacks occurring across the 12-month study period.[2] Results also indicate that verbal aggression by parents was significantly related to childhood problems with aggression, delinquency, and interpersonal relationships even after controlling for gender, age, and socioeconomic status. More importantly, Vissing and her colleagues found that parental verbal abuse was most strongly related to higher levels of childhood aggression irrespective of whether parents themselves were physically aggressive.

Further research suggests that children who are verbally abused by parents also tend to experience negative outcomes such as academic failure (Hart et al., 1998; Kinard, 2001; Wodarski et al., 1990), early experimentation with drugs and alcohol (Perez, 2000), low self-esteem (Briere and Runtz, 1988; Hart et al., 1998), and loneliness and social isolation (Loos and Alexander, 1997). If these studies are indeed correct, then it is safe to assume that the popular childhood saying, "sticks and stones may break my bones, but words will never hurt me," is largely incorrect.

Differential Oppression

The detrimental effect of verbal and emotional abuse is deeply rooted in the theoretical literature. Specifically, Regoli and Hewitt (2000) offer a relatively new theory, differential oppression theory, which provides an appropriate explanation for the various pathways that such abuse may have on children. These theorists suggest that acts of delinquency and self-defeating behaviors often arise out of power struggles between children and adults (e.g., parents, teachers).

According to these theorists, compared to adults, children have little power in today's society and few resources with which to exercise control over their social environments. Kids who perceive themselves as constantly "under the thumb" of adults often become resentful, particularly when they are made to submit to the will of adults in social settings. While power differentials between parents and children are common in many households, Regoli and Hewitt (2000:157) feel that parental authority is oppressive, particularly when par-

ents exercise their power in ways that "prevent children from developing a sense of self as a subject rather than an object," which is often the case in verbal and emotional abuse situations.

Clearly, some degree of parental controls, particularly at an early age, is necessary in order for children to develop self-control. Gottfredson and Hirschi (1990:97), for example, have argued that in order for children to develop self-control, parents must "(1) monitor the child's behavior; (2) recognize deviant behavior when it occurs; and (3) punish such behavior." Monitoring and oversight of children's behaviors are considered critical parental functions insofar as they help children to understand when they have crossed the boundaries of acceptable behavior. However, Regoli and Hewitt (1994) argue that some parents have a tendency to accomplish these tasks in a demeaning manner and under the guise of "knowing and doing what is good for them" (Miller, 1984). While some degree of parental oversight and guidance is necessary, even beneficial for conventional socialization, Gottfredson and Hirschi's own theory implies that parents must, at some point, relax these controls. Yet, Regoli and Hewitt's differential oppression theory suggests that some parents never treat their children as individuals, but rather as objects to be controlled. Further, such parents rarely learn to "lighten up."

The theory of differential oppression is organized around four guiding principles (Regoli and Hewitt, 2006). First, children are easy targets for adult oppression because of their lack of power. Second, oppression of children by adults occurs in various contexts and the degree of oppression to which a child is exposed occurs along a continuum. Third, oppression can lead to various childhood adaptations, including passive acceptance, exercise of illegitimate coercive power, manipulation of one's peers, and retaliation. Fourth, the use of adaptive reactions by children reinforces adults' views that they are "inferior, subordinate beings and as troublemakers" (Ferguson, 2001).

Oppression can occur at both the macro and micro levels, yet it is the oppression that occurs within the micro levels, especially the family, that has the greatest effect on the child's use of delinquent adaptations. As previously mentioned, the theory identified four specific ways in which children adapt to oppression. The first adaptation is passive acceptance of one's status as inferior. According to Regoli and Hewitt (2006), passive acceptance is a form of obedience that is grounded in fear. Although children "learn to hate" their oppressors, they remain fearful of them and thus suppress the hatred. This adaptation, according to the authors, typically leads

to internalizing disorders such as alcoholism, drug addiction, and low self-esteem. Passive acceptance is the most common adaptation to oppression and is more common in females.

A second adaptation to oppressive parenting is the exercise of illegitimate coercive power. By participating in delinquent activities, children are able to establish a sense of control or power over their own lives. These acts are simply maladaptive expressions of a desire for autonomy and control. Low-level adaptations may include challenges to parental authority (e.g., sassing, back-talking), defiant body language, sexual misbehavior, illicit drug use, and criminal acts (Ferguson, 2001; Regoli and Hewitt, 2006).

A third adaptation is manipulation of one's peers or siblings in an attempt to enhance social power. To some extent, this adaptation can be seen as a natural extension of deviant role-playing learned from one's own parents (e.g., might makes right). That is, oppressed children may feel the need to manipulate others, such as bullying weaker children, in an attempt to regain a sense of empowerment or control over their own lives (Regoli and Hewitt, 2006).

A fourth adaptation (e.g., retaliation) suggests that some children react to their oppressive environments by lashing out either directly at one's own parents or indirectly at other symbols of their oppression (e.g., school vandalism). While this adaptation may be manifested in outward acts of aggression such as assaulting or even killing one's own parents, anger and resentment may also be directed inwards through acts of self-mutilation, depression, or suicide (Regoli and Hewitt, 2006).

The use of retaliation seems highly plausible since so much of the prior research on child maltreatment suggests that oppression leads to violence. But is it possible that the opposite reaction is just as valid? Clearly, children react to stress in a variety of different ways. Some 70 years ago, Robert Merton (1938) argued that some individuals adapt to stressful situations (e.g., strain) by withdrawing or "retreating" into a world of drugs, alcohol, and low self-esteem. In a similar manner, Regoli and Hewitt (1994) note that the first reaction, passive acceptance, involves identifying with the oppressor. "Oppressed people frequently internalize the image of their oppressors and adapt their guidelines: they become fearful of freedom" (Regoli and Hewitt, 1994:210). In extreme cases, it may be possible for some individuals to develop an acute sense of self-hatred, leading them to engage in behaviors that enhance the odds of further victimization, or as Regoli and Hewitt suggest, to simply become fearful of a world in which they are not oppressed. If these

possibilities exist, then parental verbal abuse is not as benign as it first appears. In fact, it suggests that verbal and emotional abuse may increase the odds that a child will be picked on throughout adolescence and perhaps even into early adulthood.

The Current Study

The broad research question addressed in this study is whether there is a relationship between parental emotional and/or verbal abuse, self-esteem, and victimization by peers. The first research question asks whether children who are victims of emotional and/or verbal abuse are more likely to adapt to oppression through the use of passive acceptance as evidenced by low self-esteem. The second research question asks whether those individuals with low self-esteem resulting from parental emotional and/or verbal abuse are more likely to be victimized by their peers.

It is important to note that because different types of maltreatments tend to occur simultaneously, that is, they are bundled together as a package, the use of multivariate analysis can help to obscure important relationships. Thus, unraveling the specific effects of verbal abuse requires researchers to treat this category of maltreatment separately in order to disentangle the various sources of trauma (Browne and Finkelhor, 1986; Finkelhor et al., 2005). It is this type of research that will help to unravel the true effects of verbal and emotional abuse on children and upon which this study focuses.

The study contributes to the literature in a number of ways. First, the study furthers the work of Vissing et al. (1991) in examining the effect of parental emotional abuse on children. Specifically, it is the first study to examine the effects of such abuse on both verbal and physical victimization by peers. Second, much of the current literature has lumped measures of verbal and/or emotional abuse into a battery of independent variables. The current study seeks to unravel the specific effects of verbal abuse by examining its effect separately in order to disentangle the various sources of trauma. Third, the study provides an empirical examination of differential oppression theory. Although first offered in 1991, this theory has not been subjected to many empirical examinations (Regoli and Hewitt, 2006).

Methods

Data for this study were taken from a needs assessment administered to 6th, 8th, 10th, and 12th grade students at four public school districts in a rural southern county during the 2001-2002 school year. All students enrolled in these grades during the specified time period were invited to participate; students were not randomly selected to participate in the study. While the sample may appear to be somewhat of a convenience sample, it should be noted that all students in the designated grades were given equal opportunity to participate in this study and as such it can be described as a purposive sample. Further, after obtaining Human Subjects approval and school board consent in each of the four school districts, passive consent forms were utilized. Therefore, only those students whose parents returned a consent form indicating they did not want their children to participate in the study were excluded; students who did not return a consent form were allowed to participate in the study.[3] A total of 3,654 surveys were administered to students.

However, not all students who participated in the survey were included in the sample. Validity in self-report measures relies on respondents' honesty and candor (Hagan, 1993). Therefore, attempts were made to eliminate from the sample those individuals who did not tell the truth when answering the survey. The current study employed a method of eliminating cases based on invalid data that is consistent with the suggestions of Brown and Zimmerman (2004), who found that youth who indicated they were not honest were more likely to provide inconsistent responses than those who indicated they had been honest. Through the use of an honesty question, as suggested by Brown and Zimmerman (2004), the decision was made to eliminate the responses of those students who indicated they did not tell the truth on the survey. Specifically, students were eliminated from the sample if they responded that they "never" told the truth or told the truth only "once in awhile" or "sometimes." While this may seem a drastic step, if students' self-reported delinquency is to be believed, then their self-reported dishonesty should also be believed (see Brown and Zimmerman, 2004, for a complete discussion of the use of honesty questions as a method of eliminating inaccurate self-report responses).[4]

Another significant source of missing data can be attributed to the instrument design. Questions assessing demographic information were included at the end of the survey instrument. As a number of students did not complete the entire survey and, as a result, failed to complete any item on the last page, this created a large amount of missing demographic data. Because race and gender are two of the most influential predictors of juvenile delinquency, all respondents who did not indicate their race or gender were excluded from the analysis. To determine whether the missing data affected

Table 1. Inter-correlation Matrix and Descriptive Statistics

Variables	Peer victimization	Ability to succeed	Parental emotional abuse	Positive self-worth	Grade	Race
Ability to succeed	-.284 **					
Parental punitiveness	.275 **	-.302 **				
Positive self-worth	-.210 **	.099 **	-.198 **			
Grade	-.153 **	.083 **	.107 **	.090 **		
Race	-.049 **	.042	-.055 **	.014	.017	
Gender	.133 **	-.039	-.032	.002	-.006	.005
Mean	5.35	15.93	6.17	13.70		
SD	7.13	5.31	5.76	5.40		
Range	0–40	0–20	0–24	0—0		
Cronbach's α	.74	.87	.88	.89		

* p < 0.01. ** p < 0.001 (two tailed).

the findings, respondents in the sample were compared to district representations of gender and race. Relative to the district, the sample was disproportionately female and white.[5] Further, the model under study was estimated after excluding gender and race and the results indicated that neither the strength nor the direction of associations changed.

After accounting for missing data on the dependent variables, the final sample consisted of 2,126 respondents with the following demographic characteristics. Fifty-eight percent of the respondents were female and twenty-seven percent were nonwhite. Sixth graders accounted for 26 percent of the sample; eighth graders accounted for 32 percent; tenth graders for 19 percent; and twelfth graders for 23 percent.

Measures

The reliability of the constructs and measures utilized in this study has been well established in previous studies. In addition, a pilot test of the survey was conducted with seventh graders in a local after school program.[6] Prior to analyses, students' responses to index items were summed to create indices. Additionally, principal component analyses were run for each of the indices and the results were analyzed. The range of factor loadings for the study indices was 0.67 to 0.89. In each of the indices, all of the inter-item correlations were statistically significant. Reliability measures, specifically Cronbach's alpha, were then calculated for each index (See Appendix A for item constructs, reliability measures, and factor loadings).

Independent Variables

This study used two independent variables (parental punitiveness and self-esteem). Students' levels of self-esteem were measured using an index originally devel-

oped by Rosenberg (1965). This ten-item index sought information regarding students' feelings of self-worth, perceptions regarding their ability to achieve, and satisfaction with themselves. Two dimensions surfaced from the factor analysis of these ten items: positive self-worth and ability to succeed. Positive self-worth consisted of five items and ranged from 0 to 20 with a mean of 13.70 and a standard deviation of 5.40. High scores were indicative of increased self-esteem. Ability to succeed consisted of five items and ranged from 0 to 20 with a mean of 15.93 and a standard deviation of 5.31. Responses for these five items were recoded in reverse numerical order to reflect a positive image of ability to succeed. High scores were indicative of increased perceptions of ability to succeed. Students' experiences with parental emotional abuse were measured along a five item index and ranged from 0 to 24 with a mean of 6.17 and a standard deviation of 5.76. High scores were indicative of high levels of parental punitiveness (see Table 1 for descriptive statistics).

To determine the extent to which students had experienced parental emotional abuse, frequencies were run. Table 2 shows the results of the specific types of parental emotional abuse experienced by students. The

Table 2. Student Experiences with Parental Emotional Abuse

Frequency of experience(s)	Type of emotional abuse				
	Ignore	Blame	Yell	Nag	Threaten to slap
Never	49 %	36 %	27 %	45 %	66 %
Seldom	24 %	22 %	24 %	18 %	15 %
Sometimes	18 %	21 %	27 %	16 %	9 %
Often	5 %	11 %	12 %	11 %	5 %
Almost always	4 %	10 %	11 %	10 %	6 %

most reported type of parental maltreatment was yelling (73 percent), followed by being blamed by their parents when the student was not at fault (64 percent). Over half of the students also indicated that their parents yelled at them or ignored them.

Dependent Variable

Students' experiences with peer victimization within the last year were measured along five items taken from Kaufman et al. (1999) and ranged from 0 to 40 with a mean of 5.35 and a standard deviation of 7.13. A high score on this index was indicative of an increased level of victimization by peers. Dependent variable frequencies were initially run to determine the extent to which students experienced victimization by their peers at school. Table 3 shows the extent to which students experienced such behaviors.

Data reveal that a majority of students had been yelled at, cursed, insulted, or teased by another student at least once during the last year. The majority of students had also been the victim of theft at least once during the last year. Approximately 40 percent of students indicated that they have been hit, kicked, pushed, or shoved at least once during the last year. Almost 60 percent of the students indicated that they had been the victims of verbal abuse by their peers at least once during the last year. About one-quarter of the students indicated that they had been threatened (without a weapon) by another student during the last school year. One-tenth of the students indicated that they had been the victims of a forceful theft attempt during the last year.

Control Variables

In an effort to account for social inequality, three socio-demographic control measures were utilized: race,

gender, and grade level. Responses to the question concerning race and gender were originally coded as string values. The answers were converted to numeric values and dummy coded. Race was defined as 0 for non-white and 1 for white. Gender was defined as 0 for female and 1 for male. Responses for grade level were coded as 1 for 6th grade, 2 for 8th grade, 3 for 10th grade, and 4 for 12th grade.

Results

To examine the relationship among study variables, bivariate and diagnostic analyses were run. All of the study variables, except grade level, were significantly correlated with the dependant measure (peer victimization). Inter-item correlations among the independent variables ranged from 0.00 to 0.30, which suggests that multicollinearity did not present a significant problem (see Grimm and Yarnold, 2000). The highest correlation existed between ability to succeed and parental maltreatment ($r = 0.30$, $p < 0.001$). Further, the highest variance inflation factor in the regression models was 1.25 and the lowest tolerance figure was 0.79, which also indicates few problems with multicollinearity (Fox, 1991).

Regression Models

To examine the central tenets of differential oppression theory, a series of step-wise regression analyses were conducted, which focus on assessing four relationships: (1) the relationship between parental emotional abuse and self-esteem; (2) the relationship between self-esteem and peer victimization; (3) the relationship between parental emotional abuse and peer victimization; and (4) the relationship between parental emotional abuse and peer victimization, controlling for self-esteem. In all models significance was measured at the 0.05 level.

Table 3. Student Experiences with Peer Victimization At School During the Last Year

	Type of victimization				
Frequency of experience(s)	Verbal victimization	Physical victimization	Victimization by theft	Victimization by force	Threatened without weapon
Never	41 %	61 %	50 %	90 %	77 %
At least once during last year	25 %	18 %	32 %	5 %	13 %
Once every 3 months	5 %	4 %	4 %	1 %	2 %
Once every 2 months	2 %	2 %	2 %	1 %	1 %
Once a month	3 %	2 %	3 %	1 %	1 %
Two or more times a month	3 %	2 %	2 %	1 %	1 %
Once a week	4 %	2 %	2 %	1 %	1 %
Twice a week	5 %	2 %	1 %	0 %	1 %
Once a day	11 %	6 %	3 %	1 %	2 %

The purpose of this study was to determine the effect of oppression, specifically emotional and verbal abuse by parents, and self-esteem on peer-related student victimization. The effects of abuse were examined regarding both verbal and delinquent victimization by peers.

Model 1 examines the relationship between self-reported levels of parental emotional abuse and self-esteem. The two self-esteem indices were regressed on the parental emotional abuse index and the socio-demographic variables. The results (see Table 4) indicate that the socio-demographic variables and parental verbal and emotional abuse account for seven percent of the variation in students' levels of positive self-worth ($F = 38.97$, $p < 0.001$). Model 2 results (also in Table 4) indicate that the socio-demographic variables and parental and verbal emotional abuse account for 10 percent of the variation in students' feelings regarding their ability to succeed in life ($F = 31.30$, $p < 0.001$).

Prior to examining the effect of self-worth and ability to succeed on peer victimization, the first model includes only the demographic variables. The results of this analysis are presented in Table 5 (Model 3). Results show that demographic variables account for four percent of the variation in peer victimization ($F = 33.23$, $p < 0.001$). The second research question examined the significance of the relationship between self-esteem and peer victimization. To answer this question, the peer victimization index was regressed on the two self-esteem indices, as

well as the socio-demographic variables. The results are also shown in Table 5 (Models 4 and 5). After accounting for the socio-demographic indicators, positive self-worth explained an additional six percent of the variation in students' victimization by peers ($F = 60.61$, $p < 0.001$). Males, younger students, and those students who had a negative perception of their self-worth were more likely to be victimized at the hands of their peers. The ability to succeed explained an additional eight percent of the variation, after accounting for the socio-demographic indicators ($F = 39.70$, $p < 0.001$). Similar to previous results, males, younger students, and those who had a negative perception of their ability to succeed were more likely to be the victims of verbal or delinquent activities by their peers.

The third research question examined whether there is a relationship between parental emotional abuse and peer victimization. To answer this question, the peer victimization index was regressed on the parental emotional abuse index. The results are shown in Table 6 (Model 6). After accounting for the socio-demographic indicators, this model explained an additional ten percent of the variation ($F = 90.39$, $p < 0.001$). Males, younger students, and those who had experienced emotional and/verbal abuse by their parents were more likely to be emotionally and/or verbally abused by their peers.

The final research question examined whether there is a relationship between parental emotional abuse

Table 4. OLS Regression: Positive Self-Worth and Ability to Succeed Regressed on Parental Emotional Abuse and Demographic Controls

	Model 1: Experience with parental emotional abuse and positive self-worth		Model 2: Experience with parental emotional abuse and ability to succeed	
	B (se)	Beta	B (se)	Beta
Constant	13.627 *** (.496)		14.575 *** (.662)	
Male	-.050 (.218)	-0.005	-.502 (.296)	-.048
White	-.153 (.240)	-0.013	.499 (.324)	1.538
Grade	.224 *** (.050)	0.095	.316 (.067)	.133
Parental emotional and verbal abuse	-.231 *** (.019)	-0.255	-.285 (.027)	-10.390
F (df)	38.977 (4) ***		31.302 (4) ***	
R^2 (adjusted R^2)	.068 (.067)		.099 (.095)	

* $p < .05$.   ** $p < .01$.   *** $p < .001$ (two tailed).

Table 5. OLS Regression: Peer Victimization Regressed on Positive Self-Worth and Ability to Succeed

	Model 3: Controls		Model 4: Positive self-worth		Model 5: Ability to succeed	
	B (*se*)	Beta	*B* (*se*)	Beta	*B* (*se*)	Beta
Constant			12.415 *** (.734)		12.231 *** (1.001)	
Male	1.320 *** (.190)	.140	1.929 *** (.289)	.137	1.767 *** (.388)	.126
White	-.040 (.210)	.000	-.571 (.318)	-.037	-.641 (.425)	-.042
Grade	-.390 *** (.040)	-.150	-.342 *** (.065)	-.107	-.199 * (.088)	-.063
Positive self-worth			-.346 *** (.028)	-.256		
Ability to succeed					-.401 *** (.037)	-.301
F (*df*)	33.23 (3) ***		60.607 (4) ***		39.702 (4) ***	
R^2 (Adjusted R2)	.04 (.04)		.102 (.100)		.121 (.118)	

*p < .05.   ** p < .01.   *** p < .001 (two tailed).

Table 6. OLS Regression: Peer Victimization Regressed on Parental Emotional Abuse, Positive Self-Worth, Ability to Succeed, and Controls

	Model 6: Parental emotional abuse		Model 7: Parental emotional abuse and positive self-worth		Model 8: Parental emotional abuse, positive self-worth, and ability to succeed	
	B (*se*)	Beta	*B* (*se*)	Beta	*B* (*se*)	Beta
Constant	6.728 *** (.629)		9.548 *** (.741)		11.779 *** (1.021)	
Male	1.946 *** (.278)	.138	1.969 *** (.278)	.141	1.896 *** (.358)	.136
White	-.320 (.306)	-.021	-.277 (.308)	-.018	-.447 (.393)	-.029
Grade	-.548 *** (.063)	-.172	-463.000 *** (.064)	-.146	-.282 ** (.082)	-.090
Positive self-worth			-.238 *** (.028)	-.176	-.230 *** (.032)	-.193
Ability to succeed					-.253 *** (.036)	-.189
Parental emotional and verbal abuse	.400 *** (.024)	.327	.349 *** (.025)	.286	.399 *** (.035)	.310
F (*df*)	90.386 (4) ***		87.453 (5) ***		68.831 (6) ***	
R^2 (Adjusted R^2)	.141 (.140)		.173 (.171)		.269 (.265)	

*p < .05.   ** p < .01.   *** p < .001 (two tailed).

and peer victimization, controlling for self-esteem. To answer this question, the peer victimization index was regressed on the parental emotional abuse index, the positive self-worth index, and the ability to succeed index. The results are shown in Table 6 (Models 7 and 8). In Model 7, parental emotional and verbal abuse and positive self-worth accounted for an additional 13 percent of the variation in peer victimization, after controlling for the socio-demographic indicators ($F = 87.45$, $p < 0.001$). Males, younger students, those who had low levels of self-esteem, and those who experienced high levels of parental emotional and verbal abuse were more likely to be victimized by their peers. The full model (Model 8) explained an additional 23 percent of the variation in peer victimization (after accounting for demographics), indicating that gender, grade level, positive self-worth, ability to succeed, and parental abuse were all important correlates ($F = 68.83$, $p < 0.001$). Parental emotional and verbal abuse demonstrated the strongest association with peer victimization ($\beta = 0.31$, $p < 0.001$), followed by low levels of positive self-worth ($\beta = -0.19$, $p < 0.001$), perceived inability to succeed ($\beta = -0.19$, $p < 0.001$), gender ($\beta = 0.14$, $p < 0.001$), and grade level ($\beta = -0.09$, $p < 0.01$).

To test for robustness, the final model was regressed only on the predictor variables found to be significant in Model 8 of Table 6. All variables that were significant in the full model were also significant in the trimmed model.

Discussion

To date, only a handful of rigorous studies have been designed specifically to explore the empirical effects of parental verbal/emotional abuse on children. The few studies that do exist have typically found that children who are physically and emotionally abused by their parents are likely to grow up to become physically and emotionally abusive adults (Dube et al., 2003; Felitti et al., 1998; Paperny and Deisher, 1983; Trickett and Kuczynski, 1986; Vissing et al., 1991). Other studies have found that maltreated children also suffer high levels of emotional and behavioral problems that enhance their likelihood of engaging in delinquent behaviors (Brown, 1984; Gross and Keller, 1992; Heck and Walsh, 2000). However, no study has ever attempted to explore the opposite relationship -- the possibility that verbal and emotional abuse by parents leads to similar kinds of victimizations by one's own peers. Findings reported in this study investigate this possibility and reveal that, rather than becoming physically aggressive, some verbally abused children

may grow up to become perennial victims who suffer repeated attacks at the hands of their peers.

Data analyzed in this study suggest that parental emotional and verbal abuse, as measured by acts of rejection, condemnation, yelling, nagging, threats of violence, and slapping significantly increases the odds that a child will become the victim of similar abuse at the hands of his/her peers, both in terms of verbal victimization and physical victimization. Conversely, it appears that children, who develop higher levels of self-esteem, as measured by positive self-worth and a perceived ability to succeed, experience fewer acts of victimization by peers.

Though the data cannot speak to causality, the analysis indicates that a possible pathway leading from abuse in the home to later victimization by peers has its roots in the development of self-concept ratings. From the data, it can be posited that children who are emotionally and verbally abused by their parents develop low levels of self-esteem, which, in turn, undermines perceptions of self-worth and perceived ability to succeed in life. As suggested by differential oppression theory, children who suffer parental psychological maltreatment often identify with their adult oppressors and "become fearful of freedom" (Regoli and Hewitt, 1994:210). The effect of this identification often results in low self-worth. Children become accustomed to oppression, believe that they do not deserve anything better, and feel powerless to change their situation. As such, they become prime targets for peer victimization. Children who suffer from a perceived lack of ability to succeed may, in turn, avoid certain kinds of activities that pose a risk of additional failure and/or rejection by others. For instance, boys who avoid certain types of activities, particularly those that involve demonstrations of masculinity and physical prowess, may become targets of further ridicule, bullying, and related forms of delinquent victimization by peers.

With this said, it is important to note that gender appears to be an important determinate in the kinds of peer victimization children experience. For example, Olweus (1994) has noted that boys tend to experience more physical forms of bullying (e.g., unprovoked attacks, acts of intimidation, and threats of violence), whereas girls tend to experience more subtle forms of bullying (e.g., slandering, rumor-mongering, social exclusion, and manipulation of friendship relationships). Though boys are not exempt from psychological attacks by their peers, the aim of such attacks is often intended to raise questions about the victims' masculinity and/or their gender orientation.

Control variables employed in this study suggest that younger boys tend to suffer the highest rates of bullying and peer victimization. Similar research reported

by DeVoe et al. (2004) supports this conclusion. Their study, like the current one, also concluded that race is not a significant factor in predicting peer-related victimization.

Limitations of Data

Although the present study contributes to the literature, it is not without limitations. First, the study relies on cross-sectional data collected from students in a rural Southern state. Further, because of various issues, original data collection efforts were unable to elicit a systematic random sample and were forced to include all willing students in the study. While it may appear to some to be a convenience sample, it should be noted that all students in the designated grades were given equal opportunity to participate in this study and as such it can be described as a purposive sample. However, the method in which the data were collected does limit the findings.[7] As such, caution should be taken since the findings in the current study are not offered as ones upon which broad generalizations may be made, but rather as an exploratory study that may help guide future researchers in their attempts to examine this issue more closely.

Another important limitation in the current study is that the temporal ordering of victimization and offending could not be established (a common weakness with cross sectional designs). Future studies, however, should seek to clarify the developmental ordering of parental abuse and peer victimization.

Conclusion

The findings seem to support the tenets of differential oppression theory, especially the utilization of the passive acceptance adaptation. Specifically, the study supports the assertion that passive acceptance of oneself as inferior often leads to internalized manifestations such as low self-esteem or perceived inability to succeed. In the current study, children who experienced lower levels of self-esteem as a result of emotional and verbal abuse were more likely to be victimized by their peers. Again, although the findings do not indicate causality, they do provide an indication that self-concept is an important determinant in how children deal with parental abuse.

Findings in the current study differ from those set forth in previous studies that suggest children who experience verbal abuse by their parents are more likely to become violent or aggressive. While the results do not speak to the aggressive or violent behaviors of psychologically maltreated children, they do demonstrate that psychologi-

cal maltreatment increases the risk of peer victimization, at least within the study sample. These findings indicate that more exploration into the effects of parental verbal and emotional abuse on future peer-related victimization is needed. Of importance is an examination of the perpetrators of the peer-related victimization. Are these children also the victims of emotional and verbal abuse by adults? If so, why do some externalize the abuse, while others internalize it? Children with high levels of self-esteem were less likely to be victimized by their peers. With this in mind, the role of self-esteem should be more closely examined. Specifically, what is the effect of emotional and verbal abuse on self-esteem and how does that translate into the utilization of the various adaptive reactions by children? Also, do anger and resentment, as speculated by differential oppression theory, affect the utilization of particular adaptive reactions? Finally, given the literature that suggests different victimization patterns based on gender, further examinations should also pay close attention to the role of gender.

In conclusion, the findings reported in this study suggest several policy implications that may be helpful for parents, teachers, and school administrators to consider in their daily interactions with children.

Policy Implications

Parents should be made more aware of the harmful effects of verbal and emotional abuse. As recommended by the American Academy of Pediatrics (AAP), pediatricians are in an optimal position to impart such knowledge, through brochures, verbal guidance, and even home visitation (Kairys, Johnson, and the Committee on Child Abuse and Neglect, 2002). Parents should also be encouraged to engage in more positive means of discipline such as redirection and rewarding children's successes, rather than punishing their failures and/or shortcomings. In this way, self-esteem can be built in children. Safety, acceptance, and praise are also likely to reinforce children's positive self-concept. They will learn to see themselves as capable and valued. By monitoring behavior, yet allowing children to make their own decisions when appropriate, parents can teach responsibility and help raise self-confidence.

Teachers, school counselors, and social workers who work with children are also encouraged by this study to focus on building positive feelings of self-worth in children and cautioned against using unnecessary verbal and emotional abuse as a control device. Moreover, they are encouraged to expand conventional understandings of child maltreatment to include not only incidences of

physical/sexual abuse and neglect but also acts of verbal and emotional cruelty against children. Finally, witnessing acts of verbal and emotional abuse should be grounds for reporting and/or preventing so-called "normal" acts of aggression against children by adults.

Finally, school administrators are in a powerful position to help establish a school climate or culture that is focused both on learning and community well-being. A positive school climate can extend beyond the classroom when school personnel are willing to reinforce the importance of positive, pro-social values such as tolerance, harmony, violence prevention, and the need for basic civility in everyday life. Nel Noddings (1992) of Stanford University has an entire curriculum for schools built around an ethic of care (see also Katz, Noddings, and Strike, 1999). Even without embracing Noddings' philosophy of education, administrators are cautioned through this study to attend to the issue of how adults (e.g., teachers, parents, counselors) relate to children, and the negative effects of any abuse of their relationship with children – even at the seemingly harmless level of verbal and emotional abuse.

Endnotes

1. Davis (1996) found that parental threats of corporal punishment are fairly common occurrences in public places (e.g., malls, restaurants, zoos). Given the prevalence of threats made in public places, Davis believes that similar threats of violence against children are even more common in private places, particularly in a child's own home. Yet, because verbal abuse, especially incidents such as threats and intimidation, are so pervasive, witnesses tend to ignore them as "normal" (e.g., typical, unimportant) occurrences.

2. Vissing et al. (1991) are careful to point out that estimates of both the incidence and "chronicity" of these acts are likely to be lower bound estimates given parents' reluctance to candidly divulge known instances of verbal attacks, or because some may truly have forgotten.

3. Only students whose parents signed the consent forms specifying that their children were *not* allowed to participate in the study were excluded from the survey. Thirty-two such forms were received.

4. A total of 579 surveys were excluded as a result of reporting dishonesty on the survey. In results not presented here, we examined the responses of the students who were eliminated from the sample for dishonesty against those who indicated they were honest. Our findings were consistent with those of Brown and Zimmerman (2004). Those students who reported being dishonest did, in fact, provide more inconsistent answers than those who reported being honest.

5. Males made up 51% of the students in the four school districts and 65% of the students in the four districts were White. Furthermore, in results not presented here, we utilized independent sample *t*-tests to estimate the difference in mean scores for the indices. There was no significant difference for the mean scores on the index between the two groups. For each index, those who did not indicate their race and/or gender scored significantly higher on the index than those who did (and were thus included in the sample). Additionally, we estimated Model 8 using all cases but excluding race and gender as control variables. The associations among positive self-worth, ability to succeed, emotional/verbal abuse, and peer victimization remained statistically significant and in the same direction as the associations with the sample under study here. As such, we argue that the relationships presented here are conservative estimates of the actual relationships that would have been demonstrated had we been able to include all respondents instead of only those who completed the race and gender measures.

6. A variety of issues, such as tracking, conflicts in schedules, constraints placed by school administrators prohibited a representative sample from being selected.

7. The pilot test was administered to this group for several reasons: (1) they approximated the lowest targeted grade level to be included in the study, (2) they would not be unduly biased by participating in the pilot study, as they were 7th graders who were not intended to be included in the study sample, and (3) the program specifically targeted educationally disadvantaged students. Therefore, they were the most appropriate group to provide practical and logistical information such as the determination of total time needed for the administration, the comprehension level of the intended subjects, and the appropriateness of question wording.

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About the authors:

Lisa Hutchinson is an Associate Professor of Criminal Justice and Co-Director of the Juvenile Justice Center at the University of Arkansas at Little Rock. She received her Ph.D. from the University of New Orleans. Her current research interests include school crime and safety, evaluation of general strain theory, juvenile delinquency, and program and policy evaluation.

David Mueller is an Associate Professor and graduate coordinator in the Department of Criminal Justice at Boise State University. He received his Ph.D. from Washington State University in 2001. His research interests include juvenile justice, gangs, and school-based crime prevention strategies.

Contact information:

Lisa Hutchinson (corresponding author): Department of Criminal Justice, Ross Hall 500, University of Arkansas at Little Rock, 2801 South University Drive, Little Rock, AR 72204-10099; lxhutchinson@ualr.edu.

David Mueller: Department of Criminal Justice Administration, Boise State University, 1910 University Drive, Boise, Idaho 83725-1955; dmueller@boisestate.edu.

Appendix A. Index Item, Reliabilities, and Factor Loadings

Variable	Categories	Response format	Factor loadings
Peer victimization (α = .74)	Another student yelled, cursed, insulted, or teased you. Another student hit, kicked, pushed, or shoved you. Student has had something stolen at school. Student has had money or things taken from them by force. Another student has threatened them without a weapon.	Nine point Likert Scale from never (0) to once a day (8).	.71 .78 .68 .67 .75
Parental emotional and verbal maltreatment (α = .88)	Feels parents ignore them. Feels parents blame them for things not their fault. Parents yell at students. Parents nag student. Parents threaten to slap student. Parents actually slap students.	Five point Likert Scale from never (0) to always (4).	.77 .82 .84 .79 .81 .70
Positive self-worth (α = .89)	I feel that I am as worthy as other people. I feel that I have a number of good qualities I am able to do most things as well as most people. I have a positive attitude about myself. On the whole, I am satisfied with myself.	Five point Likert Scale from never (0) to always (4).	.81 .88 .81 .85 .84
Ability to succeed (α = .87)	*Responses for these five items were recoded in reverse numerical order to reflect a positive image of ability to succeed.*	Five point Likert Scale from never (0) to always (4).	
	Overall, I feel like a failure. I don't feel like I have much to be proud of. I wish I could have more respect for myself. I certainly feel useless at times. At times, I think I am no good at all.		.84 .70 .82 .88 .89
Race	Original response format was: a) white, b) African-American, c) Asian-American, d) Hispanic, and e) other. These answers were then recoded from string to numeric values.	The variables were dummy coded as follows: 0) for non-whites and 1) for whites.	
Gender	Original response format was a = female, b = male.	The variables were dummy coded as follows: 0) for female and 1) for male.	
Grade Level	Original responses for grade level were coded as numeric values as follows: 1) for 6th grade, 2) for 8th grade, 3) for 10th grade, and 4) for 12th grade.		

A Cross-National Test of Institutional Anomie Theory:
Do the Strength of Other Social Institutions Mediate or Moderate
the Effects of the Economy on the Rate of Crime?[1]

Beth Bjerregaard
University of North Carolina – Charlotte

John K. Cochran
University of South Florida

Abstract. *This study presents a test of Messner and Rosenfeld's theory of institutional anomie. It employs cross-national data on the rates of homicide and theft, as well as a variety of indicators of the economy and of the ineffectiveness of non-economic social institutions. Finally, it examines the degree to which non-economic social institutions mediate and/or moderate the effects of the economy on these cross-national rates of crime. As previous tests of this theory have also found, the level of support our results provide for the theory is dependent upon both the measures employed and the functional forms of the relationships.*

Keywords: institutional anomie; economy; social institutions; cross-national crime rates.

Introduction

In 1938, Robert K. Merton published his ground-breaking article entitled, "Social Structure and Anomie." In this thesis, Merton proposed that crime rates could be explained by examining the cultural and social structure of society. In particular, Merton developed the theory to explain the relatively high rates of crime present in the United States. He postulated that these rates could be explained by focusing on the cultural goals stressed by American society, especially the disproportionate emphasis placed on the goal of attaining monetary success (the American Dream) relative to that placed upon the legitimate means for attaining it. Merton also made special note of the structural strain built into the social organization of American society in which the opportunities to achieve these goals were unequally distributed; that is, openly available to some, while blocked for others. Subsequently, Merton's theory has been identified as one of the most influential theories of crime to be developed in the last century (Messner and Rosenfeld, 2001: 12). Succeeding its introduction, a number of theorists have both modified and expanded Merton's original ideas.

In 1994, Messner and Rosenfeld, drawing heavily on Merton's theoretical propositions, proposed a compatible theory of institutional anomie (IAT). Their theory was similarly designed to explain crime rates at the aggregate level and again focused on explaining the high crime rates in the United States. In particular, Messner and Rosenfeld (1994) focused on the interrelationships among the various social institutions in society. They hypothesized that an overemphasis on economic goals, coupled with a devaluation of the non-economic institutions in society, results in higher rates of crime.

Messner and Rosenfeld (1994) left us with a very intriguing structural theory of crime, but no way of directly testing it. In fact, some of the biggest challenges have been that many of the main assumptions and primary assertions made by the theory are difficult, at best, to examine empirically, particularly at the aggregate-level, because the requisite data needed to test these assertions have not been systematically collected. Messner and Rosenfeld (2006:130-131) lamented that the "high level of abstraction" of IAT "renders empirical assessments difficult" and that deriving "specific causal propositions and identifying operational measures of key concepts pose daunting challenges." Nevertheless, since its introduction, several researchers have attempted to examine key tenants of this theory and to at least partially test its fundamental propositions (Chamlin and Cochran, 1995; Messner and Rosenfeld, 1997; Hannon and DeFronzo, 1998; Piquero and Piquero, 1998; Savolainen, 2000; Batton and Jensen, 2002; Stucky, 2003; Maume and Lee, 2003; Schoepfer and Piquero, 2006). But data limitations have forced them to rely on indirect or partial tests. In fact, Messner and Rosenfeld (1997) had to settle for an indirect test of their own theory. While the current study follows the model of others by utilizing indirect tests to

examine the theory, it enhances the existing research in a number of important ways. First, this research utilizes cross-national data to examine both violent and utilitarian offenses. Many of the earlier studies used data for the United States alone (Chamlin and Cochran, 1995; Hannon and DeFronzo, 1998; Piquero and Piquero, 1998; Stucky, 2003; Maume and Lee, 2003; Schoepfer and Piquero, 2006). Second, because Piquero and Piquero (1998) found that support for IAT was highly sensitive to the measures employed, this study utilizes new measures to examine the role of the economy in influencing cross-national crime rates. Finally, it tests whether the ineffectiveness of non-economic social institutions mediate or moderate the influence of the economy of crime rates, an issue unresolved in the extant research (Chamlin and Cochran, 1995; Maume and Lee, 2003).

Messner and Rosenfeld's Institutional Anomie Theory

In 1994, Messner and Rosenfeld, drawing heavily on Merton's theoretical propositions, proposed a compatible theory of anomie also designed to explain the high rates of crime in the United States. They agree that American society places an over emphasis on material and monetary attainments, the American Dream. They define the American Dream as the "commitment to the goal of material success, to be pursued by everyone in society, under conditions of open, individual competition" (Messner and Rosenfeld, 1994:69). Similar to Merton, they contended that the American Dream also embodies other fundamental value orientations stressed by our culture, those of individualism, universalism, achievement, and materialism (Messner and Rosenfeld, 1994:69; 2006:129).

They then expanded Merton's theory by integrating his anomie theory with certain aspects of structural control theory[2]. Specifically, Messner and Rosenfeld examined the impact of social institutions in the generation of crime. It was their contention that the social institutions of societies develop to help individuals "(1) adapt to the environment; (2) mobilize and deploy resources for the achievement of collective goals; and (3) socialize members to accept the society's fundamental normative patterns" (Messner and Rosenfeld, 1994:72-73). They identified four social institutions as those primarily responsible for meeting these objectives: the economy, the polity, the family, and the educational system.

The economy is the social institution that is responsible for the production and distribution of goods in society. The family regulates sexual activity and the propagation of society. Further, the family provides care for dependent persons and emotional support to its members. Similarly, the educational system is responsible for conveying both cultural standards and skills to the younger generations. Lastly, the polity is responsible for mobilizing and distributing power to attain collective goals.

Messner and Rosenfeld (1994:76) asserted that it is the economy that operates to promote the main values of the American Dream (e.g., monetary and material achievement, individualism, competition) and that the most important characteristic of our economy is its capitalistic nature. They identified the "defining characteristics of a capitalist economy as the private ownership and control of property, and free market mechanisms for the production and distribution of goods and services (Messner and Rosenfeld, 1994:76). It is the emphasis on monetary success promoted in a capitalistic society coupled with weakened controls from non-economic institution – an imbalance of institutional power skewed toward the economy (i.e., "institutional anomie") – that ultimately results in comparatively high rates of crime, especially utilitarian crime, within the United States.

Messner and Rosenfeld (1994) argued that this economic dominance is evidenced by: (1) the devaluation of non-economic institutional functions and roles; (2) the accommodation to economic requirements by other non-economic institutions; and (3) the penetration of economic norms and values into the other non-economic institutions. They provided several examples to support these propositions. First, they pointed to the devaluation of education in our society. Today, education is valued as a means of obtaining occupational and monetary success. Learning for its own sake has become devalued. Likewise, the family and parental tasks of nurturing are devalued. Persons responsible for these tasks, mainly women, are accorded inferior status in our society. Politicians that promote values such as public service are likewise devalued.

Further, these non-economic social institutions also must make accommodations to further the dominance of the economy. Messner and Rosenfeld pointed out that family time is often sacrificed for work or economic purposes. Likewise, educational institutions are designed to provide a steady flow of employable youth to the labor market. Workers who further their education frequently do so for the sole purpose of enhancing their employment opportunities.

Lastly, they argued that economic norms have permeated these other non-economic social institutions. Schools utilize rewards such as grades to motivate students, fostering an environment of competition. Politicians are judged

on their ability to effectively deliver on their promises for a better future (e.g., "a chicken in every pot"). The role most valued in the family is that of the "breadwinner" (Messner and Rosenfeld, 1994).

Eventually, these non-economic social institutions operate, in part, to support the pursuit of economic goals (Chamlin and Cochran, 1995), which, in turn, promotes institutional anomie. In fact, the proliferation of economic opportunities or meritocracy can actually enhance societal strain as it can lead to increased competition for the allocation of scarce resources and rewards and, therefore, will also lead to an increase in anomie (Rosenfeld, 1989).

In sum, Messner and Rosenfeld (1994) expanded Merton's theory of structural anomie to include the relationships among the various social institutions in society. In particular, they stressed the relevance of the imbalance of institutional power that occurs when an economy dominates a society, as with the United States. Messner and Rosenfeld asserted that the American Dream influences our crime rates in two related ways. First, like Merton, they contended that our cultural imbalance promotes anomic conditions which, in turn, lead to increases in crime. Further, they argued that it also contributes to high crime rates by encouraging an institutional imbalance of power which weakens or renders ineffective the social control functions of the other non-economic social institutions. Therefore, one would expect crime rates to be highest in advanced capitalistic societies with weakened or co-opted non-economic social institutions.

Mediation or Moderation?

Messner and Rosenfeld made it clear that the influence of the economy on crime will vary with the ineffectiveness of the non-economic social institutions. Less clear is the exact nature (functional form) of this relationship. In other words, does the ineffectiveness of non-economic institutions mediate or moderate the relationship between the economy, anomie, and crime? Messner and Rosenfeld (2001:77) asserted that the dominance of the economy "fosters weak social controls" implying an indirect or mediated effect. Likewise, they also stated that "the American Dream contributes to high levels of crime in two important ways, one direct and the other indirect" (Messner and Rosenfeld, 1999:175). In contrast, Chamlin and Cochran (1995:413) believed that weak controls must be "coupled with" cultural pressures to achieve materialistic wealth in order to increase instrumental crimes. This asserts that the ineffectiveness of

non-economic social institutions condition or moderate the effects of the economy on the rate of crime.

The current research has not fully resolved the question. While most researchers have found support for the notion that non-economic institutions moderate the influence of the economy on crime rates (Chamlin and Cochran, 1995; Messner and Rosenfeld, 1997; Hannon and DeFronzo, 1998; Piquero and Piquero, 1998; Savolainen, 2000; Stucky, 2003; Schoepfer and Piquero, 2006), Maume and Lee (2003) found that the strength of non-economic social institutions mediated the relationship between the economy and crime. Thus, while the majority of the research supports the notion of moderated effects, this issue is still not fully settled.

Empirical Tests of IAT

To date very few empirical assessments of Messner and Rosenfeld's institutional anomie theory have been conducted[3]. In all likelihood, this lack of attention is due to the methodological difficulties presented by this theory and its data needs (Messner and Rosenfeld, 2006). Nevertheless, despite the inherent difficulties involved, several criminologists have attempted to empirically test this theory.

Chamlin and Cochran (1995) were the first to test one of IAT's main propositions, specifically the idea that the effect of economic conditions on the rate of economic crime varies depending on the strength of the other non-economic social institutions. In order to test this proposition, they examined state rates of profit-oriented crime. They utilized the percentage of families below the poverty level to measure economic conditions. In addition, they examined divorce rates (family disruption) as a measure of the ineffectiveness of the family, church membership rates as a measure of the strength of religion, and the percentage of voting-age persons who actually voted in congressional contests as a measure of the strength of the polity. The researchers created several interaction terms to examine the moderating impact of the strength of the non-economic social institutions on the relationship between economic conditions and crime rates. Their findings supported Messner and Rosenfeld's original proposition, demonstrating that when non-economic social institutions are strong (low divorce rates, high church membership rates, and high rates of voting), the impact of poverty on the rate of economic crime was at its lowest (Chamlin and Cochran, 1995)[4].

In 1997, Messner and Rosenfeld examined the impact of market forces and the decommodification of labor on cross-national homicide rates. In particular, they were

interested in examining how the decommodification of labor, or societal policies designed to empower the citizenry, interacts with the economy to influence homicide rates. While controlling for a variety of socioeconomic and demographic characteristics of a sample of 45 nations, they found that nations with greater decommodification scores tended to have lower homicide rates (Messner and Rosenfeld, 1997). They concluded that nations with greater decommodification of labor reduced the reliance of their citizens on the market for their personal well-being, thus highlighting the interaction between the economy and the polity in influencing homicide rates (see also Jensen, 2002). They also acknowledged that they had restricted their analyses to only this interaction and suggested that it was still important to investigate the conditioning influence of other non-economic social institutions (Messner and Rosenfeld, 1997).

Hannon and DeFronzo (1998) integrated IAT with social support theory and tested the hypothesis that levels of welfare assistance moderate the effects of economic deprivation on crime rates. They examined data on the 1990 total, violent, and property crime rates for a sample of large metropolitan areas in the United States. They found, consistent with IAT, that "higher levels of welfare assistance reduce the strength of the positive relationship between the size of the disadvantaged population and crime rates" (Hannon and DeFronzo, 1998:389).

Piquero and Piquero (1998) also tested IAT by utilizing cross-sectional data from the United States. They also tested the efficacy of the theory in terms of explaining both property crime and violent crime rates. They tested both the impact of the strength of the core non-economic social institutions (i.e., the family, the polity, and education) as well as a series of interaction effects between the strength of the economy and the strength of these core social institutions. Furthermore, they engaged in sensitivity analyses by testing alternative operationalizations of the key independent variables. Initially, they found that the percentage of persons enrolled full time in college (education) as well as the percentage of the population receiving public assistance (the polity) had a negative impact on both types of crime. Both the percentage of the population below the poverty level (economy) and the percentage of single-family homes (family) positively influenced these offenses. More important, the cross-product term representing the interaction between the economy and education was also significantly related to the rate of crime. That is, the economy was found to have the least influence on property crime when more persons were enrolled in college. For violent offenses, both the economy by education and the economy by pol-

ity interactions were found to be significant. However, when they employed alternative operationalizations of the key concepts (percent of persons who voted in the 1988 presidential election and the percent of high school dropouts), these results were not replicated. They therefore concluded that empirical tests of IAT are "extremely sensitive to the operationalizations of key variables" (Piquero and Piquero, 1998:80).

Savolainen (2000) examined the impact between economic inequality and cross-national homicide rates hypothesizing that this relationship would vary depending on the strength of both the economy and other non-economic social institutions in society. Savolainen's findings provide support for some of the key propositions of IAT. Specifically, he found that the interactions between income inequality, economic discrimination, and decommodification were, as expected, negatively, although often insignificantly, related to homicide victimization rates. He also discovered a significant, strong, negative relationship between the interaction of income inequality and welfare spending on the homicide victimization rate. Savolainen pointed out that the nations with considerable welfare programs also tended to have the lowest levels of income inequality, noting that this provides strong support for the notion that economic inequality is a predictor of homicide rates in societies with weak welfare support.

Batton and Jensen (2002) examined the main effects of the decommodification of labor (a measure of the extent to which the other non-economic social institutions have tamed the market) in a time-series analysis of homicide rates in the United States (1900 - 1997). Although the direct effect of decommodification was not significantly related to U.S. homicide rates for the entire length of the time series, they did observe a significant direct effect for the first half of the series until the end of World War II. They concluded that the decommodification index had an effect on homicide rates that occurred only under unique institutional circumstances.

Stuckey (2003), like Chamlin and Cochran (1995), Hannon and DeFronzo (1998), and Piquero and Piquero (1998), focused on sub-national units within the United States. Integrating IAT with "systemic" social disorganization theory, he predicted that the responsiveness of local political structures would condition the effects of economic deprivation on crime. His findings were consistent with this prediction; the effects of economic deprivation on the rate of crime were weakest in those metropolitan areas with responsive (strong) local political structures.

Most recently, Schoepfer and Piquero (2006) provided another test of the mediating effects of non-eco-

nomic social institutions and the relationship between the economy and crime. Like most of the studies that preceded them, Schoepfer and Piquero (2006) restricted their analyses to the data for the United States. However, rather than testing the efficacy of IAT to predict rates of street crimes, these authors tested IAT against state-level data on embezzlement rates. They found that the effect of economic conditions (percentage unemployed) on the rate of embezzlement was conditioned or moderated by the strength of the polity (percent voting in 1990 state and local contests). However, the strength of the family (divorce/marriage ratio) and the strength of education (percent not graduated from high school) both failed to moderate the effect of economic conditions on the rate of embezzlement (Schoepfer and Piquero, 2006).

Unlike all of the studies discussed above which observed interactive or moderating effects of non-economic social institutions, Maume and Lee (2003) assessed the institutional dynamics of IAT by also examining the mediating effects of the strength of non-economic institutions. Again using sub-national (i.e., county-level) data, they observed more support for the conclusion that non-economic social institutions (the polity, the family, and religion) mediate, rather than moderate, the relationship between the economy and crime rates (Maume and Lee, 2003).

While these indirect tests provide important support for IAT, they do not provide the most powerful tests of the theory. First, only Messner and Rosenfeld (1997), Savolainen (1998) and Batton and Jensen (2002) utilized cross-national data, a requisite for testing IAT. However, each of these studies was restricted to examinations of homicide rates only. Conversely, those studies which examined both violent and property crime rates failed to employ cross-national data (Chamlin and Cochran, 1995; Hannon and DeFronzo, 1997; Piquero and Piquero, 1998; Stucky, 2003; Schoepfer and Piquero, 2006). As Savolainen (2000:1024) compellingly argued, "nation-states constitute more compelling units of analysis than do the states of the Union." Further, different studies have examined the impact of different sets of non-economic institutions and the moderating effects of the strength of these non-economic social institutions are very sensitive to alternative operationalizations (Piquero and Piquero, 1998). Finally, it is unclear whether the role of non-economic institutions in IAT is to mediate or to moderate the effects of the economy on crime. While nearly every study finds evidence of moderation by at least one non-economic social institution, Maume and Lee (2003) have made a strong case that their influence is to mediate rather than moderate. Moreover, Messner

and Rosenfeld's original presentation of IAT asserts that the dominance of the economy "fosters weak social controls" implying an indirect or mediated effect. Likewise, they also stated that "the American Dream contributes to high levels of crime in two important ways, one direct the other indirect" (Messner and Rosenfeld, 1999:148).

The Present Study

The current study proposes to draw on the strengths of the above research and to improve upon its limitations by providing another partial test of IAT utilizing cross-national data to explain both violent and utilitarian offenses. In addition, it attempts to clarify the causal mechanisms through which economic dominance influences these crime rates. This study contributes to the small but growing research literature testing IAT in a number of very important ways: (1) utilizing cross-national data to examine both violent and property crime; (2) employing alternative operationalizations for the key concept of economic dominance; and (3) determining whether mediation or moderation best describe the causal relationship between the strength of the economy, the effectiveness of non-economic social institutions, and crime cross-nationally.

Data

Since IAT proposes relationships at the macro-social level unique to certain societies, these propositions require cross-national data for proper testing. The data for this research were collected for 49 nations from a variety of sources including the International Criminal Police Organization (INTERPOL), the World Health Organization (WHO), the United Nations (UN), the World Bank, and other international sources identified in Appendix A. The data for the independent variables were taken from 1997 where possible, and from 1996 if 1997 data were not available[5]. In several instances, variables were combined both to eliminate problems of multicollinearity and to preserve degrees of freedom. Principal components factor analyses were performed and variables were created from these analyses. The results of these analyses are reported in Appendix B.

Measures

Crime Rates

Two measures of crime are utilized to examine the efficacy of IAT. Since anomie theory was originally designed to explain rates of utilitarian crimes, a measure

of all theft crimes is utilized. These data were obtained from the International Crime Statistics published by INTERPOL (1997). Numerous concerns regarding the use of official statistics to measure cross-national crime have been raised (e.g., Newman, 1999). One of the primary issues is the possibility of systematic bias in the reporting practices of various nations[6]. Kick and LaFree (1985), however, concluded that offenses such as homicide and theft, which have ancient origins, exhibit a fairly high degree of definitional consistency and are more comparable. Likewise, Krohn and Wellford (1977) and Krohn (1978) also suggested that problems of systematic bias may not be particularly serious. This was also concluded by Bennett and Lynch (1990) who examined the reliability of four cross-national crime data sets, including Archer and Gartner's CCDF, INTERPOL, UN, and WHO data[7]. They concluded that for analytical purposes, all four data sets afforded substantively similar results (Bennett and Lynch, 1990). They also concluded that analytic studies were "more robust than descriptive studies with respect to error" and that such error did not necessarily affect the substantive findings unless correlated with the independent variables (Bennett and Lynch, 1990:157). They also suggested that aggregating these indicators helps to mitigate some of these issues. Therefore, our measure of cross-national theft rates, while not limited to the most serious offenses, provides a more reliable and accurate measure. That is, while definitions of serious and minor theft offenses surely differ cross-nationally, an inclusive measure such as the all theft crimes that we utilize minimizes the impact of these differential recording practices.

In addition, Messner and Rosenfeld (1994) proposed that their theory also explains cross-national differences in the rate of serious crimes. Therefore, cross-national homicide rates are utilized as our second measure of crime. This measure offers the additional advantage of being considered the most reliable and accurate estimate of crime available for cross-national comparisons. Homicide rate data were derived from both the World Health Organization (1997-1999) and the International Crime Statistics, published by INTERPOL (1997). The primary source of data is the World Health Organization (WHO). If data were missing from this source, INTERPOL data were utilized. While WHO data are considered by some to be the most reliable estimates of international crime rates (Avison and Loring, 1986; Savolainen, 2000; Messner, Raffalovich, and Schrock, 2002, Krahn, Hartnagel, and Gartrell, 1986; Nalla and Newman, 1994; Chamlin and Cochran, 2007), both the WHO and INTERPOL measures correlate very highly for

the sub-sample of nations for which complete data are available.

To control for yearly fluctuations, multi-year averages were computed. Logged transformations of these crime rate measures were utilized as they were highly positively skewed. Initial analyses also indicated potential problems with heteroscadasticity which were greatly reduced once the measures were logged.

The Economy

Messner and Rosenfeld (2001:68) stressed that the core values expressed in the American Dream are supported by the economy and that the most important characteristic of the American economy is its capitalistic nature which is defined by "both private ownership and control of property and free-market mechanisms for the production and distribution of goods and services." However, they also stressed that a free-market economy, if unregulated by other non-economic social institutions, would adversely impact crime rates. When the economy is unchecked by non-economic social institutions, the principles of the free-market economy dominate and infiltrate the functions of these other institutions. The degree to which economic conditions influence non-economic institutions is associated with both the amount of control or political restraint the state exerts over the economy and the extent to which it attempts to mediate the effects of these economic conditions (Batton and Jensen, 2002). These conditions should have more of an impact when state regulation and control are reduced. This suggests that the impact of the economy of crime at a cross-national level of analysis involves at least two elements: (1) the degree of economic freedom/regulation within a nation, and (2) the nature of economic conditions. The present study is unique in that it includes measures of both of these elements.

The prominence of a free-market economy, unrestrained and unregulated by social or political constraints, is measured first by an index of economic freedom developed by the Heritage Foundation (O'Driscoll, Holmes, and O'Grady, 2003). Economic freedom is defined as "the absence of government coercion or constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself" (Beach and O'Driscoll, 2003:2). Each country is rated by examining fifty economic variables classified into ten broad categories including: trade policy, fiscal burden of government, government intervention in the economy, monetary policy, capital flows and foreign investment, banking

and finance, wages and prices, property rights, regulation and black market activity (Beach and O'Driscoll, 2003). High scores on this variable are indicative of institutional policies that are most conducive to economic freedom[8].

In countries where the economy is dominant, the welfare of its citizens is contingent upon market forces. Conversely, when governments have social welfare policies in place, these policies can act as a buffer against these market forces. These policies also have the effect of potentially strengthening non-economic social institutions such as the family (Jensen, 2002). Therefore, one would expect that low social welfare allocations signify economic dominance (Jensen, 2002). The current study employs a measure of social welfare by the annual total social security expenditures as a percentage of the gross domestic product (International Labour Office, 2000). This measure of economic dominance is conceptually similar to the decommodification of labor index proposed by Esping-Andersen (1990) and employed by Messner and Rosenfeld (1997) and Savolainen (2000) in their tests of IAT[9].

Finally, in a free market economy one would expect changes in the economy to have a direct impact on crime rates. In the present study, economic conditions are operationalized by a measure of relative deprivation or economic inequality. Nearly every test of IAT has also employed a measure of economic inequality as an indicator of the strength of the economy. Chamlin and Cochran (1995) and Piquero and Piquero (1998) both used a measure of the percent of families living in poverty. Messner and Rosenfeld (1997), Savolainen (2000), and Maume and Lee (2003) each used the Gini coefficient as their measure of economic inequality. Messner and Rosenfeld (1997) and Savolainen (2000) also utilized an index of economic discrimination. Schoepfer and Piquero (2006) employed the percent unemployed as their measure of the strength of the economy. Finally, Messner and Rosenfeld (1997), Hannon and DeFronzo (1998), and Stucky (2003) each employed an index economic deprivation consisting of several of the indicators employed by the other studies. The present study employs the Gini coefficient of household income to measure economic inequality or relative deprivation. This coefficient ranges in value from 0 to 100 with a score of 0 representing perfect income equality and a score of 100 representing a perfectly unequal distribution of income[10].

The Family

Messner and Rosenfeld (2001) described several situations to illustrate both the devaluation and accom-

modation of the family where the economy is dominant. They suggested that single-parent families, as well as families where both parents work, are less able to effectively supervise their children. In previous tests of IAT, family disruption has been measured by divorce rates (Chamlin and Cochran, 1995; Piquero and Piquero, 1998; Maume and Lee, 2003; Schoepfer and Piquero, 2006). However, Messner and Rosenfeld (2007:83) also suggested that the intrusion of economic norms into the family is illustrated by the fact that "contributions to family life tend to be measured against the all-important breadwinner role, which has been extended to include women who work in the paid labor force." While this has been traditionally measured by examining the percentage of female-headed households, this measure is not uniformly available cross-nationally. However, Messner and Rosenfeld (2007:8) noted that one indication that economic norms have permeated the family is that the devotion of a parent is now frequently measured by his/her capacity to "provide a better life" for his/her children. Traditionally, women's status has been assessed by their role in the family (see Lehmann, 1990). Women in the workforce signal a breakdown in this traditional perspective and the effectiveness of families to socialize their children. Females in the labor force primarily mean that childcare is outsourced and that the traditional female role as caregiver is severely compromised putting stress on family bonds (Gartner, 1990; Neumayer, 2003). Consequently, traditional family socialization is jeopardized as parents will have "difficulty providing children with the emotional support and nurturance to deal with everyday misfortunes" and will have to farm out those roles to other institutions such as schools (Messner and Rosenfeld, 2007:86)[11].

A measure of family disruption that includes both the breakdown of the traditional nuclear family as well as a measure of the permeation of economic norms is a more complete measure of extent to which the family has been devalued as economic values have been accommodated[12]. Therefore, family disruption, as a measure of the effectiveness of the family, was created in the current study as a factor variable which combines divorce rates and the percentage of females in the labor force. Therefore, high scores on this measure represent family disruption or the ineffectiveness of the family.

Education

Messner and Rosenfeld (2001) pointed to the importance of the educational system as a socializing agent. They stressed that the educational system is also respon-

sible for preparing youth for their occupational roles. They also noted how this emphasis on preparing youth for the labor force, rather than the pursuit of knowledge, is evidence of the extent to which the educational system is accommodating a dominant economy. The current study employs two measures of the strength of the educational system: illiteracy rates and pupil-to-teacher ratios. Both of these variables were combined to create a single factor variable with high scores representing a weak educational system.

The Polity

As a social institution, the political system is utilized to promote and attain collective goals, unless co-opted by the economy (Messner and Rosenfeld, 2001). Messner and Rosenfeld (2001) further maintained that involvement in the political process can promote a sense of community and lead to a reduction in anomie. They also pointed to low voter turnout as an indicator that the polity is devalued (Messner and Rosenfeld, 2001). Accordingly, the ineffectiveness of the polity was measured by the lack of voter turnout at the latest election. That is, this measure was created by subtracting the percentage of the population that voted at the last election from 100.

Control Variables

Previous researchers, including Messner and Rosenfeld (2001), emphasized the importance of demographic controls in the analysis of crime rates. Specifically, they highlighted the importance of gender and race, claiming that societies that are both racially homogeneous and with a larger proportion of females have lower crime rates (Messner and Rosenfeld, 2001). To control for the impact of these demographic forces, the current study includes measures of the sex ratio and the index of racial heterogeneity for each country. Further, the percentage of the population aged 15-29 was also included as a control measure. Due to collinearity problems, these demographic characteristics of the countries were combined to create a single factor variable. Therefore, countries that score high on this have a more crime prone population.

The degree of economic development, in particular economic affluence, is also important to control for. Nations with an abundance of resources may be better able to keep non-economic social institutions strong, to buttress the anomic effects of economic imbalance of power, and/or to otherwise reduce crime rates. In contrast, nations with a paucity of resources may have populations that tend to "resolve interpersonal conflicts on their own" thus increasing crimes rates (Jensen, 2002:65). Moreover, Messner and Rosenfeld (1997) have noted the importance of the general affluence of a nation on its rate of crime. The present study controls for the influence of economic affluence with a single factor variable which combines the gross domestic product per capita in U.S. dollars with the life expectancy and annual health expenditures to measure the general well-being of the country. High values on the economic affluence variable represent more affluence. Table 1 presents the minimum and maximum values and means and standard deviations for the variables used in this study. The bivariate correlations between these variables are presented in Appendix C.

Table 1. Descriptive Statistics

	Minimum	Maximum	Mean	Standard deviation
Dependent variables				
Homicide rate (log)	-.63	4.80	1.258	1.321
Theft rate (log)	2.52	9.03	6.915	1.477
Economic variables				
Economic freedom	.00	3.50	2.206	.751
Social Security $	2.50	34.70	16.621	9.195
Gini coefficient	23.10	59.30	35.024	9.516
Social institution variables				
Family disruption	-1.09	1.57	.130	.736
Education	-1.22	3.38	-.474	.741
Polity	5.00	64.00	29.184	13.422
Control variables				
Demographics	-1.64	1.31	-.566	.713
Affluence	-.89	2.86	.436	1.052

Findings

Tables 2 and 3 present the results of linear regression analyses predicting cross-national homicide and theft rates, respectively. Each table presents five sets of three models. The first set of three models examines the direct effects of each of the three measures of the economy [i.e., (a) the Gini coefficient, (b) social security expenditures, and (c) economic freedom] on these rates of crime. The second set of three models adds measures of the ineffectiveness or weakness of the three non-economic social

institutions (i.e., the family, education, and the polity) to test the mediating hypothesis of Maume and Lee (2003).[13] The next three sets of three models (nine models) include cross-product terms for each of the three indicators of the economy (centered) by each of the three measures of the strength of non-economic institutions (also centered) to examine the potential moderating effects of each of the three non-economic institutions on each of the relationships between three indicators of the economy and the rate of crime cross-nationally. All analyses included the control variables in order to ensure that any observed

Table 2. OLS Regression Analysis of the Mediating and Moderating Hypotheses from IAT−log Homicide Rates

(n = 49)

	Direct effects models			Mediated effects models			Moderated effects models								
	a	b	c	a	b	c	a1	b1	c1	a2	b2	c2	a3	b3	c3
Economic variables															
a) Gini coefficient	.045 *			.037			.036			.044			.035		
b) Social Security $		.003			.016			-.007			-.012			.020	
c) Economic freedom			-.098			-.246			-.178			-.233			-.245
Social institutions															
Family disruption				.112	.065	.577 *	.135	.100	.536 *	.148	.057	.601 *	.111	.065	.576 *
Education				-.232	-.208	-.191	-.214	-.309	-.207	.083	-.525	-.114	-.216	-.189	-.185
Polity				.018	.027 *	.019	.019	.024 *	.019	.027 *	.027 *	.019	.019	.030 *	.021
Cross-product terms															
1) Economy *family							-.017	.056 *	.188						
2) Economy *education										.050 *	-.035	.184			
3) Economy *polity													.001	-.001	-.002
R^2	.386	.457	.422	.475	.513	.579	.541	.519	.584	.482	.561	.580	.479	.522	.579

Note: Values reported are unstandardized regression coefficients. All models control for affluence and demographic factor-score variables. Model intercepts and other results are available upon request.

* *p* < .05

Table 3. OLS Regression Analysis of the Mediating and Moderating Hypotheses from IAT−log Theft Rates

(n = 46)

	Direct effects models			Mediated effects models			Moderated effects models								
	a	b	c	a	b	c	a1	b1	c1	a2	b2	c2	a3	b3	c3
Economic variables															
a) Gini coefficient	-.026			-.018			-.020			-.004			-.012		
b) Social Security $		.091 *			.061 *			.049			.043			.060	
c) Economic freedom			.484			.451			.622 *			.396			.460
Social institutions															
Family disruption				.383 *	.325	.549 *	.430 *	.355 *	.447	.461 *	.324	.438	.384 *	.325	.546 *
Education				-.748 *	-.531 *	-.745 *	-.709 *	-.576 *	-.784 *	.146	-.724	-1.091 *	-.788 *	-.534 *	.673 *
Polity				-.011	-.005	-.018	-.009	-.007	-.019	.006	-.005	-.017	-.014	-.006	-.006
Cross-product terms															
1) Economy *family							-.035	.026	.470						
2) Economy *education										.095 *	-.021	-.817			
3) Economy *polity													-.002 *	.000	-.022
R^2	.432	.529	.445	.596	.612	.624	.615	.623	.650	.743	.614	.649	.639	.612	.642

Note: Values reported are unstandardized regression coefficients. All models control for affluence and demographic factor-score variables. Model intercepts and other results are available upon request.

* *p* < .05

findings were not spurious in nature. Overall, the models explained between 38.6 and 58.4 percent of the variation in cross-national homicide rates and between 43.2 and 65 percent of the variation in international rates of theft[14].

In Table 2, we first note that of the three indicators of the economy, only the Gini coefficient, as a measure of economic inequality, has a direct effect on cross-national homicide rates ($b = 0.045$). Thus, as predicted by IAT (and other macro-social theories of crime), economic conditions are associated with increased levels of homicide cross-nationally.

Most prior studies of IAT that have utilized cross-national data have failed to incorporate a measure of the economic structure or its characteristics. The index of economic freedom compiled by the Heritage Foundation was used in the current study to measure the prominence of a free market economy. The hypothesis was that countries with a free market economy would be more likely to experience economic dominance and anomie and therefore would have higher rates of crime. Also, because of the difficulties inherent in directly measuring the presence of anomie, previous studies have relied on indirect measures. The most common approach is to examine either absolute (Chamlin and Cochran, 1995; Piquero and Piquero, 1998) or relative deprivation (Savolainen, 2000; Maume and Lee, 2003). An alternative approach is to examine restraints on the economy by examining such items as decommodification or welfare policies (Messner and Rosenfeld, 1997; Maume and Lee, 2003). The present study used total annual expenditures of social security as a buffer against economic conditions. Neither annual expenditures on social security nor the index of economic freedom are significantly related to cross-national homicide rates.

Consistent with the argument of Maume and Lee (2003), the effects of the economy on homicide are mediated by the influence of the non-economic social institutions. Specifically, the effects of the Gini coefficient are reduced by 18 percent ($b = 0.045$ vs. 0.037) and become non-significant. However, a test for the equality of the direct and mediated effects revealed that they were statistically equivalent (difference = -0.008, $Z = 0.27$, $p = 0.39$). Of the non-economic social institutions, family disruption is positively associated with cross-national homicide rates when IAT is modeled by the economic freedom index. Likewise, poor voter turnout (a measure of the ineffectiveness of the polity) is also significantly associated with cross-national homicide, but only when IAT is modeled by annual expenditures on social security. Thus, cross-nationally low voter turnout is associated with greater rates of homicide.

Despite no evidence of any remaining direct effect of the economy on cross-national homicide rates once the weaknesses of non-economic social institutions are controlled, the analyses reported in Table 2 still show limited support for the moderating effects hypothesis, though not always in a manner consistent with the argument tendered by Chamlin and Cochran (1995). For instance, high levels of family disruption are associated with increased levels of homicide when coupled with high levels of social security expenditures ($b = 0.056$). Perhaps nations employ such expenditures in an attempt to mute the consequences of family disruption as a form of prophylactic social control. Conversely, high levels of economic inequality are related to high levels of homicide cross-nationally, especially among nations with an ineffective education system ($b = 0.050$).

Support for IAT is equally mixed with regard to cross-national rates of theft (see Table 3). Unlike what one might expect from the effect of social security expenditures on the cross-national crime rate, we found that high levels of these expenditures are associated with higher levels of theft ($b = 0.091$). This direct effect is partially mediated by the ineffectiveness of the other non-economic social institutions ($b = 0.061$), though it remains statistically significant. Again, however, a test for the equality of the direct versus mediated effect revealed that the two were statistically equivalent (difference = 0.03, $Z = 0.75$, $p = 0.23$). Rather than blunting the effects of criminogenic conditions of an institutional imbalance of power, these governmental expenditures are associated with increased cross-national levels of theft independent of the ineffectiveness of non-economic social institutions. While high levels of family disruption are associated with high levels of theft as one might expect, a weak educational system is associated with lower rates of theft.

While the results in Table 3 provide some very limited evidence for the mediating influence of non-economic institutions (Maume and Lee, 2003), there is stronger evidence of their moderating influence. Consistent with the argument of Chamlin and Cochran (1995) the effect of economic inequality of the cross-national rate of theft is significantly enhanced under conditions of high family disruption ($b = 0.095$). Conversely, the results in Table 3 also reveal that low levels of voter turnout significantly *reduce* the criminogenic effects of economic inequality ($b = -0.002$)[15].

Discussion

In 1994, Messner and Rosenfeld presented to the criminological community what is today the structural

version of anomie theory with the greatest currency: institutional anomie theory (IAT). Their theory, drawing on Merton (1938), emphasizes both the unique anomic and criminogenic influence of a predominant cultural focus on the attainment of monetary success and affluence in the United States (i.e., the American Dream) and the institutional imbalance of power between the economy and the other non-economic social institutions. That is, according to Messner and Rosenfeld, the emphasis on monetary success promoted in a capitalistic society coupled with the devalued goals of and weakened controls from non-economic social institutions – an imbalance of institutional power skewed toward the economy (i.e., institutional anomie) – ultimately results in the comparatively high rates of crime in the United States. While a valuable and intriguing macro-social theory of cross-national variation in the rates of crime, Messner and Rosenfeld's theory has proven to be a daunting challenge to assess empirically. To date, all tests have been partial and indirect and tended to focus on the extent to which the ineffectiveness of non-economic social institutions are able to buffer the criminogenic influences of the economy. While this literature consistently supports specific propositions derived from Messner and Rosenfeld's theory, this support is consistently inconsistent. By that, we mean the level of support for IAT varies according to how its key explanatory concepts (i.e., the economy and the strength of non-economic social institutions) are measured (see Piquero and Piquero, 1998) and whether the model tested supports the claim by some (Chamlin and Cochran, 1995) that the strength of non-economic social institutions condition the effects of the economy on the rate of crime or whether the models support the claims by others (Maume and Lee, 2003) that the influence of non-economic institutions mediates the effects of the economy.

The current study also employed a partial and indirect test. However, it enhances the existing research in a number of important ways. First, this research utilized cross-national data to examine both violent and utilitarian offenses. Many of the earlier studies used data for the United States alone (Chamlin and Cochran, 1995; Hannon and DeFronzo, 1998; Piquero and Piquero, 1998; Stucky, 2003; Maume and Lee, 2003; Schoepfer and Piquero, 2006). Studies that focus solely on a single culture are unable to measure, even indirectly, variation in cultural values. While examinations of data from the United States have the perceived advantage of holding constant the cultural values of the society, they do not allow the researcher to compare the unique aspects of this culture (e.g., the American Dream) to other cultures.

Since it is the culture that is thought to induce anomic pressures, it is critical to allow for this variation. Further, it is clear that Messner and Rosenfeld (2001:44) intended their theory to explain "variation across societies in rates of serious crime." Therefore, the present study has critically advanced the testing of IAT by examining cross-national data for the rates of two serious crimes.

Second, because Piquero and Piquero (1998) found that support for IAT was highly sensitive to the measures employed, this study utilized new measures to examine the role of the economy in influencing cross-national crime rates. Finally, it tested whether the strength of non-economic social institutions mediate or moderate the influence of the economy of crime rates, an issue unresolved in the extant research (see Chamlin and Cochran, 1995; Maume and Lee, 2003).

Lastly, it is important that we controlled for a variety of relevant factors that might confound the relationships between the economy, non-economic social institutions, and crime rates. Specifically, we controlled for several demographic factors highlighted by Messner and Rosenfeld (2001) to influence crime rates cross-nationally, and for the relative affluence of each country. This was critical for examining the impact of the economy on crime.

Our findings from multivariate analyses of cross-national data, like those of others before us, yielded mixed and rather limited support for IAT. Moreover, like the extant research literature, our support for IAT was consistently inconsistent. First, the efficacy of our models varied by type of crime examined (cross-national homicide rates versus rates of theft). For instance, the explanatory power of the models testing IAT with cross-national data for the rate of theft was considerably stronger than that for the rate of homicide models. However, the nature of the relationships observed (i.e., the direction, statistical significance, and functional form of these associations) were somewhat more supportive of IAT propositions for the homicide data than for the theft data. For instance, with the homicide data, we observed a significant, direct effect of relative economic deprivation (the Gini coefficient) on the rate of homicide, such that countries with higher levels of economic inequality also, as expected, had higher rates of homicide. More importantly, the ineffectiveness of non-economic social institutions both mediated (though not appreciably) the influence of economic deprivation as predicted by Maume and Lee (2003) and moderated its influence as predicted by Chamlin and Cochran (1995). However, we also observed that the positive relationship between levels of family disruption and cross-national rates of homicide was significantly

enhanced among those countries reporting high levels of social security spending.

For the theft models, higher levels of social security expenditures were associated with *higher* rather than lower rates of theft. This unexpected relationship was mediated somewhat, albeit only marginally, by the ineffectiveness of the non-economic social institutions. We also observed moderating influences from the non-economic social institutions, though not always consistent with expectations derived from IAT. While high levels of family disruption do enhance the criminogenic influence of the economy on cross-national rates of theft, poor voter turnout *diminished* the effect of economic deprivation.

Second, as observed by Piquero and Piquero (1998), support for IAT varies according to how its key concepts have been operationalized. That is, the effect of the economy on cross-national rates of crime is very sensitive to how the economy is measured. In particular, support for IAT was more consistently observed when the economy is operationalized as a measure of the level of economic deprivation (i.e., the Gini coefficient), than by either annual levels of social security spending (a measure conceptually similar to Messner and Rosenfeld's use of the index of the decommodification of labor) or the Heritage Foundation's measure of economic freedom (an indicator conceptually consistent with Messner and Rosenfeld's conceptualization of economic dominance)[16]. In addition, support for IAT also varies by how the strength of the non-economic social institutions is measured. In particular, the anticipated mediating and moderating effects of these non-economic institutions were most pronounced and most consistent with IAT for our measures of the ineffectiveness of the family (family disruption) and the educational system (high illiteracy and pupil-to-teacher ratios) and were least so for our measure of the ineffectiveness of the polity (low voter turnout).

Third, the primary research question of the present study involves the dispute among IAT researchers as to whether the predicted influence of the strength of non-economic social institutions moderates (Chamlin and Cochran, 1995) or mediates (Maume and Lee, 2003) the effect of the economy on cross-national rates of crime. Again, our findings were consistently inconsistent. That is, we observed that the economy's effect on the rate of crime was sometimes mediated and sometimes moderated. In fact, it was both mediated and moderated. But, this all depends on which measure of the economy was examined and the effectiveness of which non-economic social institution was being examined. The cleanest picture indicative of support for IAT to emerge from our analyses showed that the effect of economic deprivation

(i.e., the Gini coefficient) on the cross-national rate of homicide and/or theft was both mediated and moderated by the ineffectiveness of the family and the educational system. Importantly, the economy may interact differently with different non-economic institutions so that both mediation and moderation may be at work.

In sum, the research literature is consistently inconsistent with its support of IAT and our study is no different. As others before us have found, support for IAT varies across units of analysis (cross-national versus sub-national) and across types of crime (rates of homicide versus instrumental crime). Tests of IAT are also very sensitive to the operationalization of key explanatory concepts (both the economy and the strength/weakness of non-economic social institutions). Curiously, we observed confounding effects for total annual social security expenditures, directly with theft and conditioned by family disruption for homicide. Such confounding effects need to be resolved. Conversely, we found the measure of economic inequality (i.e., the Gini coefficient) to be the indicator of the economy most consistently related to cross-national rates of crime in a manner predicted by IAT. It was directly related to cross-national homicide rates as predicted and was involved in three of the four moderated effects observed. IAT theorists and researchers must work to resolve the highly sensitive nature of the theory to its operationalizations.

Finally, it remains unclear, both theoretically and empirically, whether non-economic institutions moderate or mediate the effects of the economy on the rate of crime. This state of affairs may be due, at least in part, to the challenging and complex nature of this theory and the lack of systematically collected cross-national data that properly operationalize its key concepts. This is especially the case with Messner and Rosenfeld's (1994) conceptualizations of anomie and culture (i.e., the extent to which the American Dream has permeated the cultures of other countries and the extent to which the economy dominates other social institutions). Until the theory is better specified and until such data become available, tests of IAT will remain both partial and indirect. Moreover, the findings from these partial and indirect tests are likely to remain consistently inconsistent in their support for the theory. That is, the theory will likely receive consistent support, but this support will differ across measures of crime, across measures of the economy, across measures of the non-economic social institutions, and across the various functional forms suggested by theory for the relationships among these measures.

Endnotes

1. The authors would like to acknowledge Richard Rosenfeld for his helpful comments provided to an earlier draft of this manuscript.

2. This is very similar to the early concept of social disorganization which emphasizes the ability of communities to generate social control and to assist residents in achieving common goals. For further elaboration, see Kornhauser (1978).

3. While many have tested Messner and Rosenfeld's institutional anomie theory by examining the direct, indirect, and/or conditioned effect of the economy on rates of crime, others have addressed the issue of "American exceptionalism" asserted within the theory (see Jensen 2002; Cao, 2004; Chamlin and Cochran, 2007; Messner and Rosenfeld, 2006). Others have addressed cultural dynamics associated with IAT (see Chamlin and Cochran, 1997; Pratt and Godsey, 2003; Cullen, Williams, and Wright, 1997). Finally others have examined the direct or conditioning effect of the decommodification of labor index (Messner and Rosenfeld, 1997; Jensen, 2002; Batton and Jensen, 2002). For perhaps the best and most current review of research testing IAT, see Messner and Rosenfeld, 2006.

4. Although Jensen (1996) disputes that these findings support Messner and Rosenfeld's theory, Chamlin and Cochran (1996) responded by reiterating that their findings are consistent with Messner and Rosenfeld's proposition that economic conditions (poverty) should be strongly and positively related to crime only when non-economic social institutions are ineffective.

5. The 49 nations examined are Albania, Austria, Azerbaijan, Bahamas, Bangladesh, Bulgaria, Canada, Columbia, Costa Rica, Croatia, Czech Republic, Denmark, Dominican Republic, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Israel, Italy, Jamaica, Japan, Republic of Korea, Kyrgyzstan, Latvia, Lithuania, Luxemburg, Maldives, Moldova, Netherlands, New Zealand, Norway, Panama, Poland, Portugal, Romania, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Trinidad, Tunisia, Turkey, Ukraine, and United States.

6. It should be noted that these same concerns have been raised concerning crime estimates across the United States (see Wiersema, Loftin, and McDowall, 2000).

7. In fact, Bennett and Lynch (1990) suggest that the selection of a data set should be based on coverage or lo-gistical considerations. In our data, the homicide rates reported by INTERPOL and the WHO were found to correlate at 0.80, lending credence to the idea that they are substantially measuring the same phenomenon.

8. The variable was originally measured on a scale from 1 to 5, with high scores representing policies that were least conducive to economic freedom. In the current analyses, the variable was re-scaled from 0 to 4 and then reverse coded so that higher scores represent greater economic freedom. For further information see http://www.heritage.org/research/features/index.

9. In a sub-sample of 18 nations for which both measures are available, these two measures are significantly correlated at 0.80.

10. For countries with missing data on either the Gini coefficient or the annual social security expenditures measure, aggregated mean substitution was utilized by region and the United Nations human development code.

11. Rosenfeld and Messner (2006) point out that families accommodate economic requirements in a variety of ways. They emphasize that "work hours determine household meal and vacation schedules, how an employer's permission is needed to tend to a sick child, how having a family above all requires having a job" (Rosenfeld and Messner, 2006:165).

12. As pointed out by an anonymous reviewer, this may be perceived as an androcentric view of how to measure family. However, we believe that this view is consistent with the proposition advanced by the theoretical perspective that the devaluation of the family has resulted in a de-emphasis on traditional family roles including the role of the female as the primacy caretaker.

13. Readers will note that while others may refer to these variables as measures of the strength of non-economic social institutions, in the current study, each indicator is actually a measure of the weakness or ineffectiveness of these non-economic social institutions.

14. The Variance Inflation Factors (VIF) for the direct effects models and mediated effects models were all less than 4.5. However, a maximum VIF of 10.5 was observed in the moderating effects models, suggestive of a problematic level of multicollinearity due to the inclusion of the various cross-product terms. To adjust for this problem, variables were centered prior to analysis (see Aiken and West, 1982). In addition, residual statistics and casewise diagnostics revealed no outliers past three standard deviations.

15. In supplementary analyses not reported here, we re-ran all the analyses reported in Tables 2 and 3 by excluding the U.S. Almost all of the results were the same except the following: (1) in the homicide analyses when testing for the mediated effects of the polity on the social security spending-homicide relationship, the direct effect of the polity measure became non-significant; and (2) in the theft analyses (a) the direct effect of economic freedom attained statistical significance, (b) the direct effect of family disruption attained statistical significance in the moderated effects model for economic freedom, and (c) the direct effects of family disruption also attained significance in the model testing moderating effects of the polity on the social security spending-theft relationship.

16. In a personal communication to the lead author, Rosenfeld (2003) stated that he thought our Heritage Foundation's measure of economic freedom "matches closely our notion of economic action unfettered by social or political constraint."

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About the authors:

Beth Bjerregaard is an Associate Professor in the Department of Criminal Justice at the University of North Carolina at Charlotte. She received her Ph.D. in Criminal Justice from the State University of New York at Albany. Her research interests include the death penalty, gang membership and delinquency as well as legal issues pertaining to cases of domestic violence and stalking. Her most recent publications have appeared in Justice Quarterly, Homicide Studies, Police Quarterly, Journal of Criminal Justice Education, and Criminal Justice Policy.

John K. Cochran is Associate Dean for Faculty Affairs in the College of Arts & Sciences and of Department of Criminology at the University of South Florida. Professor Cochran earned his Ph. D. in Sociology at the University of Florida (1987). His current research interests involve testing micro-social theories of criminality and cross-national tests of macro-social theories of crime and crime control. His is also continuing his work on issues associated with the death penalty.

Contact Information:

Beth Bjerregaard (corresponding author): Department of Criminal Justice, University of North Carolina – Charlotte, 9201 University City Blvd., Charlotte, NC 28223; bebjerre@uncc.edu.

John K. Cochran: Department of Criminology, University of South Florida, 4202 E. Fowler Ave., SOC107, Tampa, FL 33620-8100, cochran@cas.usf.edu.

Appendix A. Measures and Data Sources

Measures	Data Source
Crime	
Homicide and theft rates	International Crime Statistics. International Criminal Police Organization. 1997.
	World Health Statistics Annual, 1997-1999 Online Edition. World Health Organization.
Economic conditions	
Economic freedom	Heritage Foundation. http://www.heritage.org/research/features/index.htm. Accessed 01-23-03.
Social Security expenditures	Cost of Social Security - World Labour Report. 2000. International Labour Organization.
Gini coefficient	World Inequality Database. World Institute for Economic Research. http://www.undp.org/poverty/initiatives/wider/wid_download.htm. Accessed 09-09-02.
	World Resources Institute Facts and Figures: Environmental Data Tables. World Resources Institute. http://www.wri.org/facts/data-tables-population.html. Accessed 09-08-02.
Family	
Divorce rates	International Marketing Data and Statistics, 2001.
participation	World Development Indicators 2001. CD-ROM. World Bank.
Education	
Illiteracy rates	International Marketing Data and Statistics, 2001.
Pupil/teacher ratio	World Development Indicators 2001. CD-ROM. World Bank.
	UNESCO Statistical Yearbook. 1999. UNESCO. http://www.vis.unesco.org/en/stats/statso.htm. Accessed 09-08-02.
Polity	
Voter turnout	Human Development Report, 2000. United Nations.
Demographics	
Racial heterogeneity	Illustrated Book of World Rankings. 1997. George T. Kurian.
Population 15-29	Krug, Dahlberg, Mercy, Zwi, & Lozano. World Report on Violence and Health, 2002. World Health Organization. http://www.who.int/violence_injury_prevention/violence/world_report/en/full_en.pdf. Accessed 05-19-06.
Sex ratio	Social Indicators: Indicators on Population. 2001. United Nations Statistical Division. United Nations.
Affluence	
Life expectancy	World Development Indicators 2001. CD-ROM. World Bank.
Gross Domestic Product	World Development Indicators 2001. CD-ROM. World Bank.
Health expenditures	World Development Indicators 2001. CD-ROM. World Bank.

Appendix B. Principle Components Factor Analyses

	Factor loadings	Eigenvalues	Percent of variance
Family			
Divorce rates	.82	1.35	67.50
Percent of labor force female	.82		
Education			
Illiteracy rates	.92	1.68	84.11
Pupil/teacher ratio	.92		
Demographics			
Racial heterogeneity	.82	1.45	48.25
Percent age 15–59	.59		
Sex ratio	.66		
Affluence			
Life expectancy at birth	.77	2.40	80.14
GDP per capita in U.S. dollars	.96		
Health expenditures	.95		

Appendix C. Bivariate Correlations

Homicide rate (logged)	1.000									
Theft rate (logged)	-.314 *	1.000								
Economic freedom	-.414 **	.568 **	1.000							
Social security	-.515 **	.659 **	.403 **	1.000						
Gini coefficient	.564 **	-.381 **	-.253	-.612 **	1.000					
Family disruption	.033	.421 **	.233	.443 **	-.432 **	1.000				
Education	.246	-.583 **	-.262	-.642 **	.345 *	-.381 **	1.000			
Polity	.254	-.063	.078	-.213	.221	.155	-.073	1.000		
Demographic controls	.571 **	-.429 **	-.347 *	-.761 **	.675 **	-.471 **	.569 **	.031	1.000	
Affluence controls	-.583 **	.639 **	.697 **	.656 **	-.397 **	.219	-.467 **	.028	-.585 **	1.000

$* p < .05; ** p < .01$

Factors and Conditions Influencing the Use of Research
by the Criminal Justice System

Christopher A. Innes
National Institute of Corrections

Ronald S. Everett
University of Alaska Anchorage

Whither We Are Tending

"If we could know *where* we are, and *whither* we are tending, we could then better judge *what* to do, and *how* to do it," said Lincoln in his famous "house divided" speech in 1858 (Angle, 1991). While we might imagine that the debate over criminological research and its applicability to practice is inconsequential compared to the coming crisis Lincoln was addressing, such a judgment ignores the reason the debate is so important. On any given day, over two million people are being held against their will in jails or prisons in the United States and over twice as many more are under community supervision or otherwise entangled in the criminal justice system (Harrison and Beck, 2006; Glaze and Bonczar, 2006). Collectively, they represent tens of millions of victims. About 350,000 people a year are seriously injured in a crime and over the last decade an average of 20,000 have died violently each year (Federal Bureau of Investigation, 1990-2000; Rennison, 2001). One in three Americans are afraid to walk alone in their own neighborhoods at night (Gallup, 2000). These and many other statistics may define where we are, but the fact is that our own professional house has long been divided between researchers and practitioners and this has hobbled our society's response to crime and violence.

What is most interesting about Lincoln's remark is the distinction he drew between what to do and how to do it within the context of the *goals* we wish to set. This manner of framing the issue is a classic statement of Pragmatism; Lincoln was speaking at a time when that tradition was emerging as the dominant philosophical perspective in America (Menard, 2001). Much later, John Dewey (1929:7-8) captured the Pragmatic spirit of inquiry when he argued that knowledge should be tested by asking the questions

> Does it end in conclusions which, when they are referred back to ordinary life-experiences and their predicaments, render them more sig-

nificant, more luminous to us, and make our dealings with them more fruitful? Or does it terminate in rendering the things of ordinary experience more opaque than they were before, and in depriving them of the having in 'reality' even the significance they had previously seemed to have?

For Dewey and the Pragmatists this test applies equally to any type of inquiry, including those that use the methods of science. Like everyday knowledge, science must begin and end with experience and its ultimate test is *how it can be used*. From the Pragmatist perspective, a science that begins with experience, but ends with a published report providing an explanation is incomplete. In this paper, we will discuss the contrast between this perspective and the more common practices of social science research inherited from a Positivistic view of the scientific enterprise to examine a number of issues that influence the relationship of research and practice.[1]

Central to the Pragmatist critique of Positivism is the argument that the latter relies exclusively on an attenuated understanding of experience. In Pragmatism, the concept of "experience" joins the dual meanings of the term in ordinary language to include, 1) experience *of* something as when we observe the world around us and 2) experience *with* something when we participate in an activity (Dewey, 1925; Murphy and Rorty, 1990; Ratner, 1939). When we have observational experiences, including when our observations are systematic as in scientific research, it produces empirical evidence. When we have participatory experiences, we develop skills. We can say, for example, that a person has a great deal of experience in substance abuse programs and mean by it either 1) they have done many studies, 2) have run programs for many years, or even 3) have been treated for dependency several times. It is the union of these differing senses that constitutes the full meaning of experience in the Pragmatic sense. Keeping these multiple aspects of the concept in mind helps us think through the supposed divi-

sion between research and practice.

Largely for historical reasons, the social sciences have limited themselves to a language of experience-as-evidence and this has served to render its conclusions more opaque, to use Dewey's term. When social science emerged as a professional discipline, it embraced the Positivist view of a privileged language of science that assumed the verification theory of meaning. This value neutral vocabulary of operationalization has served social science well in developing and testing hypotheses on an empirical base. The obvious utility of this language argues against the view that it is simply a patina of "scientific" jargon designed to bolster the status of the discipline or a linguistic tick that amounts to an occupational hazard.

At the same time, there remains a residual practice of strictly following the language of operationalization when we present research results to audiences beyond the discipline. We will argue below that this language is a convention social scientists adopted because the use of precisely operationalized concepts and value neutral terms makes developing and testing hypotheses or engaging in scientific debate about research results more straightforward. While we may need to use operationalized language when we are doing research, however, there is nothing that *necessarily* restrains us from changing our language when we turn to the task of discussing the significance of our findings for practice. Our insistence upon staying within the strict confines of that language has led to a number of confusions about the relationship of research (and researchers) to practice (and practitioners).

For the purposes of the discussion below, a "practitioner" is anyone working within the criminal justice system, at any level, who has a decision-making role. When they are deliberately referring to research evidence in making such decisions, they can reasonably be said to be "using" it. If, for whatever reason, including political opposition, bureaucratic obstinacy, or simple lack of resources they are unsuccessful in implementing that decision, they have nonetheless used research to guide their efforts, no matter how disappointing the result.

Talking About What Works and How to Do It

When researchers talk about how something works, they are referring to the precise details of a causal explanation. When practitioners talk about how something works, they mean how can they actually *do* what a causal explanation implies should be the result of their actions. The bifurcation of our way of talking about what works as opposed to how to do it, which echoes the dual meaning of experience, is not typically a problem in everyday life where we have little trouble making the translation. For example, if we wished to travel from Washington, D.C. to Boston and asked the best way to make the trip we would most likely be advised to fly. If instead we wanted to know the best way to get from Washington to Philadelphia, we might be told to take the train. So, we might inquire, what works better, train travel or air travel? The answer, of course, goes back to the "...where we are, and whither we are tending..." advice we received from Lincoln. Where you are and where you want to go determines the best way to get there.[2] It should also be pointed out that none of this information is going to be of any real use to you in actually traveling anywhere.

There is an entirely different answer to the question, "What is the best way to get to Philadelphia?" If the question were asked somewhere in downtown Washington, the answer would be, "Go to the closest Metro station and get on the Red Line train traveling to Union Station. At Union Station, take the escalator up to the main hall. Turn right and go to the Amtrak ticket counter and buy a ticket to Philadelphia. Follow the ticket agent's directions on where to get the right train..." There is nothing in this answer that is incompatible with the shorter one of, "Take the train." What is different is the vocabulary employed in making the transition from a "what works" language to a "how to do it" language.

In the simple case of getting from one place to another, the translation of what to do into providing the details of how exactly to do it seems straight forward. Yet if we ask, "What is the best way to deal with drug addicted offenders?" we are less likely to get a reply nearly so useful. We might be told, "Research has shown that offenders who receive substance abuse treatment are less likely to recidivate," or worse, that, "Research has shown a significant statistical association between recidivism and a self-reported history of drug use." These answers are decidedly opaque because they lapse into the peculiar language of social science explanation. This is why statements that begin with, "Research shows..." never seem to have an obvious translation into guides for action in the same way that taking trains seems to immediately imply train stations, tickets, and the like. As will be discussed below, explaining events, prescribing actions, or describing the details of how to carry them out requires diverse languages that are not necessarily incompatible nor is any one intrinsically superior to the others apart from its use.

Positivism and Social Science

Social science came of age as a profession under the influence of Positivistic approaches to measurement

that relies on a specific form of scientific nomenclature. Positivism, as it emerged during the early decades of the 20th century, was built on the central tenant that any statement of empirical fact has meaning only if it is possible to operationalize it through a precise description specifying the observational procedures for its verification. For example, Carnap (1953:47) wrote, "If we knew what it would be for a given sentence to be found true then we would know what its meaning is...Thus the meaning of a sentence is in a certain sense identical with the way we determine its truth or falsehood; and a sentence has meaning only if such a determination is possible." (See also Bergmann and Spence, 1953). The Positivist language of science, therefore, has to be clearly distinguished from the everyday language we use to talk about the world and the many meanings we associate with its words and symbols.

Contemporary social scientists have enshrined this approach in standard methodologies that require every concept be operationalized in a way that allows it to be measured in an objective fashion. This approach is necessitated by our concept of causality. Levi (1959:331) opens his discussion of Positivism's development by saying, "It has taken three hundred years to prepare the positivistic avalanche... [which came because]...the overwhelming successes of seventeenth-century science bequeathed to its philosophical successors the unsolved problems of the foundations of mathematics and of observational sciences."[3] The avalanche came as a delayed response to the Empiricist's attack on the metaphysical theory of causality when Hume shifted the locus of analysis from necessary connection to constant conjunction. One of the keys to this approach is to recognize that causal explanations will always be probabilistic and conditional (Pearl, 2000).

This means hypotheses are never confirmed with certainty because they are based on observations of a correlation between variables and there is always the possibility that future observations will fail to detect the same correlation. Instead, hypotheses can only be disconfirmed when the null hypothesis is tested to determine if the observed association is significantly different from what might occur by chance (Popper, 1968). Disconfirmation as the basis for developing explanations depends on precise measurement to reduce to a minimum those occasions when measurement error or conceptual confusion results in a true hypothesis being disconfirmed or a false one confirmed.

Social science researchers have frequently argued that at this point, when they have developed and tested a casual explanation for a social phenomenon or behavior,

their job is done. Many consciously separate research as objective scientific inquiry from the realm of practical policy and their language serves to reinforce this separation. Researchers, as they engage in the scientific enterprise, expect to be objective, detached, nonjudgmental, or value-free as they endeavor to unravel the complexities of any phenomena and uncover the causes of such things as drug addiction, violence, and other criminal behavior. What to do with the knowledge—how to formulate criminal justice policy or develop intervention programs—is not a traditional part of the research process following Positivistic approaches.

As discussed above, there are compelling reasons why social scientists strictly adhere to this language when they are doing research or examining its findings. Using objective, verifiable, and value-neutral terms facilitates scientific debate and helps insulate it from other pressures. So far, this is familiar ground to social scientists, but the issue can be raised whether in pursuing this program of science we have not also created, among ourselves and others, a number of confusions that unnecessarily interfere with the translation of research into applications.

Explanations and Applications in Criminal Justice

The argument here is that this state of affairs is not an inevitable consequence of an empirical science. Instead, the value of the sort of objective, observational language we favor lies in its utility in developing hypotheses, testing them, and debating research results. If, however, the value of this language rests on its usefulness for the purposes of social science research, rather than some epistemological necessity, we cannot insist on adhering to it in situations where it is less useful. When we attempt to apply the results of research to the solution of concrete problems, the limitations of the language of research become obvious. In part, the issues surrounding the applicability of research to practice becomes obscured by concerns over value-free science as opposed to the value judgments required to make policy recommendations. Social scientists have tried to keep value judgments at arms length by arguing that they are better equipped to predict what consequences will result from each of the various policy alternatives available and that their role ought to be limited to what they do best.

In the area of criminal justice research, Moore (2002) has recently articulated the argument that a clear line needs to be maintained between research results and policy prescriptions. He sees an important overlap between social science efforts to understand and explain the world and policy analysis efforts to evaluate alternative

courses of action. The connection, according to Moore, lies in the fact that the scientific method is the best way for us to understand our world and that policymakers need the results of research to estimate the consequences of their action if they are to "...act both responsibly and effectively..." (2002:33) in making policy. The relationship is a tenuous one because the fundamental goal of social science is to produce verified theories which is "... a different project than the policy makers had in mind... [because they were]...less interested in general causal description than they were in specific policy prescription" (2002:33).

Moore goes on the argue that, as useful as they may be to predict the likely outcomes of a policy, the type of generalized explanations social science produces can not guide policy because, "As a logical matter, to decide on an action, one has to have a goal or purpose, or a way of evaluating whether the world is better or worse off than before one acted" (2002:34). Science, however, "...has always said it is incapable of making value judgments...It was capable only of making estimates of consequences" (2002:34). Social scientists typically draw this line between predicting the likely results of a particular policy as opposed to *recommending* one policy over other alternatives. Concludes Moore, "What constituted an important consequence of a policy from a normative perspective was left to philosophers, to political process, or to individuals who were free to have their own views about what was valuable" (2002:34).[4].

We can juxtapose this perspective on social science and its intrinsic limits with the criticism by the contemporary Pragmatist, Rorty, who takes issue with precisely this account of social science and its uses (1982:196):

> Suppose we picture the 'value free' social scientist walking up to the divide between 'fact' and 'value' and handing his predictions to policymakers who live on the other side. They will not be of much use unless they contain some of the terms which policy-makers use among themselves. What the policy makers would like, presumably, are rich juicy predictions...When they get predictions phrased in the sterile jargon of 'quantified' social sciences ('maximizes satisfaction,' 'increases conflict,'' etc.), they either tune out, or, more dangerously, begin to use the jargon in moral deliberations.

This charge levied against social science research echoes, in different terms, the often voiced complaints made by policymakers and practitioners.

Rorty goes on, however, to trace the problem to the more fundamental issue of the strategy of social science. Social scientists argue that it is the utility of their explanatory models in making predictions that is the true value of research and, incidentally, why public funding ought to be used to support it. We assume that our casual explanations imply a set of alternative policies and allow policy makers to choose among them by predicting the likely results of adopting each. Rorty challenges this logic, arguing that, "...social science assumed that a thin 'behavioristic' vocabulary..." will allow reliable predictions, but

> This assumption has not panned out very well; the last fifty years of research in the social sciences have not notably increased our predictive abilities...friends of value freedom, insisting that as soon as social science finds its Galileo (who is somehow known in advance to be a behaviorist)...[we will be able to predict and]... that it is our duty to start making policy in suitably thin terms– so that our "ethics" may be "objective" and "scientifically based." For only in that way will we be able to make maximal use of all the splendid predictions which will shortly be coming our way...It is a mistake to think that when we know how to deal justly and honorably with a person or society we *thereby* know how to predict and control him or her or it, and a mistake to think that ability to predict and control is *necessarily* an aid to such dealing. (1982:197-198)

While the above passage may make some of us wince, it does address the central issue with a directness few social scientists display. In abstaining from the evaluative debate about how our research ought to be used, researchers are evading this dilemma. Policymakers tend to be co-conspirators in this evasion as they seek to relieve themselves of the full responsibility for their decisions by trying to lean on research for support of their policy choices. As Rorty noted above, the ability to predict does not necessarily tell us how to deal justly and honorably with others.

This also raises the question of degree to which research and policy in criminal justice represents a special case of the larger problem of the relationship between science and practice. The American criminal justice system exists both to protect public safety and to dispense justice to victims and offenders alike and there are many instances in which these two goals come into sharp

conflict. Whether criminological researchers aspire to be value free or not, they inevitably work in a value-laden environment and it is disingenuous for us to claim that our neutral professional language will not have value significance. These are important distinctions. Often, when critics claim social science can not be value free they are confusing issues of bias in the conduct of research with the question of the significance of its results. Our training, the transparency of the scientific method, and the use of peer review are all designed to eliminate such biases. Practicing the *profession* of research requires the capacity to view an issue objectively, based on the available evidence and holding in abeyance considerations beyond the validity and reliability of the results.

At the same time, there is very little anyone can say about human behavior, no matter how objective or neutral in tone, that does not immediately become evaluative. Discussions about issues like addiction or crime and violence assume a value significance by their nature. Assuming a posture that the manner of talking about research results, (i.e., in operationalized or probabilistic terms), somehow absents the researcher from the value significance of the results is not a tenable position. This is not to say that becoming more engaged in policy prescriptions does not lead to role conflicts for researchers. There are many researchers, however, who have successfully navigated the inherent pressures of working in applied settings, in partnerships with practitioners, and on issues which arouse strong opinions. On the other hand, researchers usually then limit their involvement in policy discussions to the presentation of their findings coached in our preferred terminology and this leaves to others the interpretation of their results and its translation into evaluative terms.

As we have argued above, this is not necessitated by the dictates of our methodology nor does it have anything to do with debates over value-free science. Researchers, while we are doing research, must be unbiased and use all of the devices, such as precise operationalization of concepts, at our disposal to maintain neutrality. After the research has been finished, however, we can take positive steps to insure that our results will be properly understood and, when attempts are made to apply it, the results we do predict will follow.

The best evidence of this is that every debate in criminology is fundamentally complicated by the political battles among policymakers who make liberal use of their own interpretations and evaluations of research findings. Policy and programs within criminal justice are not unique in being influenced by political debates, but the language of research used by social scientists often makes it vulnerable to manipulation and obfuscation. There are many recent examples of highly contested criminal justice issues in which the argument could be made that public fear and the absence of a clear understanding of the body of relevant research conspired to produce dubious policies: popular three-strike sentencing plans, mandatory sentences for drug offenses and the special attention given crack cocaine, some domestic violence interventions, general approaches to white collar and corporate crime, and correctional innovations such as boot camps or community programs like DARE. It is unlikely that a change in communication between researchers and practitioners will eliminate all the difficulties inherent in formulating justice policy, but we might hope it would help discourage the worst abuses.

This is part of the reason that communication, in and of itself, is seldom the solution. Researchers, for instance, frequently prescribe more communication with practitioners so researchers can convince practitioners of the value of research. Less often do researchers resolve to listen better in order to appreciate the value of practice. Equally unhelpful are practitioners who complain that they must work too hard to understand difficult issues, believing that complex information ought to be reducible to easily digestible "bullets," sound bites, or one-page summaries. Holding up "evidence-based" practice as an ideal only exacerbates the problem. Evidence is what scientists collect by observing and this reduces practitioners to simple consumers who become the passive recipients of research results. This depreciates the importance of the second aspect of experience noted above—participation in experiences with the problem and the skills that develop as a result. Any effective process of knowledge building should be a union of these two, reflecting the dual meaning of experience, to produce an "experience-based practice" based on both.

Technology Transfer in Criminal Justice

Over the last few decades, federal agencies involved in funding research have pursued various strategies to transfer the results of research into applications, but these efforts have all tended to be driven by the orientations of researchers. Variously known as technology transfer, research utilization, or "diffusion theory," they have met with mixed success, although some, like the adoption of improved agricultural practices and the application of defense- or space-related technologies, have been more effective (Simpson, 2002; Backer, 1993; Rogers, 1995). The "transfer" of the results of behavioral science to practice has always been especially problematic. In review-

ing the area of drug abuse technology, Brown and Flynn acknowledge the general problem of technology transfer between researchers and the field, writing that

> The past 30 years have seen a focus on substance abuse research in association with the creation of federal agencies specifically mandated to guide the effort. While research has been well supported and largely productive, there has been increasing concern with the slow pace of adoption of the findings from that research. (2002:245)

The authors develop a detailed model focused on the mechanics of dissemination, utilization, and evaluation with federal agencies playing a central role. (See also Brown, 1995).

In this model, federal agencies, such as NIJ and NIDA, occupy a unique position between the world of research and that of practice by managing a four-stage process. In the first stage, *technology development*, there is an emphasis on involving practitioners, "...the primary consumer group..." (Brown and Flynn, 2002:??) in the selection of research topics. In the second stage, *transfer preparation*, the body of research is reviewed by the research community to decide which results are most reliable and by the practitioner community to determine which are most relevant to their needs. In the third stage, *transfer implementation*, training and technical assistance is provided to practitioners to aid them in implementation. Finally, in the *technology stabilization* stage, ongoing support to the field is provided to avoid backsliding into the old practices.

In this model, interpersonal contacts among federal agencies and the field are pivotal to facilitate the necessary cooperation and planning for successful knowledge generation and subsequent transfer to the field. In his 1995 paper, Brown listed a number of general factors that serve as impediments to technology transfers, listing relevance, timeliness, clarity, credibility, replicability, and acceptance of research findings. The general tone of this and other similar models is a kind of marketing approach in which the agencies work with researchers to sell ideas to practitioners and concentrates on barriers to the implementation of evidence-based practices, including local resistance to innovation (Lamb, Greenlick, and McCarty, 1998; Martin, Turner, and Smith, 2000). All of these approaches focus on the problem of the transmission of research to the field as opposed to its translation in converting research results into directions for practice. They are all clearly constructive attempts, but they share a unidirectional quality in which practitioners, in their di-

minished role as consumers, are only consulted regarding their preferences. A full partnership between those with evidence-based knowledge and those with participatory-based knowledge has not been built into every stage of the process.

Knowledge Production

The essential Pragmatist thesis is that there is no real difference between theory and practice, and knowledge is always explicable in terms of what it means for human action. From this perspective, thinking always begins with a problem, some doubt about how in a particular context we could act, and it ends in a belief about how we might proceed. Science may, by virtue of the rigor of its methods, claim to be quantitatively superior to everyday experience as a means of gathering evidence, but not qualitatively so. It is in the nature of research to extract generalizations from the particular and in the nature of practice to apply the general to the specific. Each represents a conceptual posture toward our experiences, the one focusing on their common characteristics and the other on their distinctive qualities. The science of social research has a set of highly-developed methods to produce generalized findings, but there is no sister science of social practice equipped with its own methods to apply them to particular problems. This is why, when research names a policy or program to the list of "what works," we are only half done, because it begs the question of *how* it worked in the practical sense.

This implies that knowledge generation is a process that oscillates between an emphasis on experience in the first sense (observational to generate evidence) and experience in the second sense (participatory and skill-producing). The solution, however, is not to turn practitioners into researchers or vice versa, it is to develop effective partnerships between them so each can bring their respective strengths to the process through a constructive division of labor. Understanding the dual sense in which we use the idea of experience suggests a broader strategy toward the process that produces new knowledge. The *accumulation* of research results often fails to produce *cumulative* knowledge useful in applied settings because our efforts are routinely truncated, as when they end with the generation of only a research report.

This is because there are a number of interdependent processes that make up the structure of knowledge production and each process has a unique mix of roles between practitioners in the criminal justice system and the criminal justice research community. For the purposes of this discussion, knowledge building can be separated into

stages that define an arc from the definition of a problem through to the application of a solution. The analogy most often used to describe this process is "bridging the gap" between research and practice. The process becomes essentially an engineering problem in which information is collected, made sense of, a prototype is constructed and tested, others are taught how to recreate similar structures, and the solution is applied to similar concrete situations.

In the early stages, researchers and their methods dominate, but practitioners are not relegated to a passive role. Comparable to other models of technology transfer, this process begins with knowledge *Generation,* the familiar process by which basic and applied scientific research on crime and the criminal justice system is conducted. In this model however, genuine collaborative relationships are required and include active participation in research projects, rather than advisory roles, and equal representation on peer panels. In the second stage, knowledge *Organization* occurs, again through collaborative efforts, by which a body of empirical evidence in a field is made meaningful by placing it within a coherent conceptual scheme and relating it to practice in a manner that suggests a model policy or program. This differs from the recent attempts to synthesize the body of research in a particular area, a process that is controlled and guided by researchers in an attempt to package the results in a more digestible form. This tends to perpetuate the basic opacity of the results because they are still presented in the typical language of social science explanation.

In the third phase, knowledge *Testing,* a model policy or program is implemented in a field test designed both to demonstrate the feasibility of the model and to evaluate its effectiveness. In practice, this process involves iterative steps between basic research or evaluations and field tests. The National Institute of Justice has experimented over the last decade with a strategy of carrying out field tests as joint efforts between the Institute, evaluation researchers, and demonstration sites. There are a number of difficulties involved in the successful execution of such a strategy that are discussed elsewhere, but the central goal of such projects is the attempt to achieve a union between the two aspects of experience as a vehicle for the translation of basic research findings into broader applications (Innes, 2003).

As this process continues, the relative positions of the research community and the practitioner community reverse. Knowledge *Translation* is the process in which the accumulated organized body of research and the results of its testing are translated for a broader audience in the most accessible language and formats. Practitioners assume the central role in articulating the body of knowl-

edge into "how-to language" by developing program plans or manuals and providing training or technical assistance. When knowledge *Application* occurs, control over the process has passed into the hands of the practitioner community as a policy or program is implemented to scale in an organization and incorporated into its routine operations. While researchers play a central role in generating research results, they become increasingly peripheral to the processes of organizing or disseminating those results beyond the research community as practitioners assume greater responsibility.

In a real sense, the relationship between researchers and practitioners tracks the transition from observational experience to participatory experience as their essential roles are exchanged. At the beginning of the process, when basic and applied research is conducted, researchers take the initiative and the practitioners serve as a "reality check" to their theories and explanations. At the back end, it is the practitioners who take the lead in translating and applying knowledge, while the researchers rain on their parade by pointing out what is not based on the evidence or not working. The keystone, to continue with the bridge analogy, is field testing, when the roles are most nearly balanced and the collaboration most equal.

What to Do and How to Do It

The discussion above has contrasted the Pragmatist perspective on the scientific enterprise with social science methodology following a more Positivist model. That model, with its reliance on operationalized concepts and probabilistic statements of casual inference, has clearly been successful in advancing empirical research. The utility of this approach notwithstanding, its use by social scientists has led to a preference for a language that is grounded directly on an observational foundation. We have argued that in practice this has produced an empiricism biased toward one side of the dual meanings of "experience" as both the evidence we gain from observation of and the skills we develop from participation with the world around us. The exclusive emphasis on the first aspect of experience results in the gap between it and the second one that shows up in the difficulty of translating the findings of research into practice.

Social scientists have frequently sought to restrict themselves to their central concern of developing and testing explanations. They have tended to assume that their contribution to solving social problems is the understanding of its nature which, in turn, makes it possible to predict the likely effects of any proposed solution. That promise has not been realized to date and the ability of the

social sciences to make predictions in nontrivial cases has proven limited. The solution to the dilemma, in our view, is for the research community to reduce its isolation and recognize the need for the full involvement of the practitioner community in our work. This will mean accepting that the process of knowledge production must embrace both aspects of experience and that means there must be a division of labor between researchers and practitioners through each stage of the process.

Although we have discussed the issue in terms of differing languages, one an evidence-based "what works" language and the other a skill-based "how to" language, we have also argued that the gap between research and practice is not just a communication problem. More than anything else, the problem is an example of professional culture clash. If there is a defining difference between practitioners and researchers it is that the former love success too much and are always impatient to claim it. For researchers, it is really the thrill of failure that attracts them because it sets up the *next* research problem and this leads them to focus on critical questions awaiting investigation rather than those already answered. The solution is not to teach practitioners how to think like researchers, nor should it be for researchers to abandon their hard won methods and practices simply to make their results more digestible or palatable to practitioners. Instead, the solution lies in the acceptance by both the research and practitioner communities of the hard work involved in sharing the control and responsibility of the entire process of building new knowledge in the service of the public good.

Endnotes

1. The reader familiar with Gottfredson and Hirschi's 1990 book will recall that it contains a lengthy critique of "positivistic" theories of crime. Unfortunately, as Akers has pointed out in his original review of the book, Gottfredson and Hirschi misuse the term when they contrast their version of control theory with other perspectives on the grounds that the others are Positivistic while their theory is not. Akers notes that, "Positivism is supposed to be deterministic... [and] is quantitatively oriented, emphasizes measurability, utilizes statistical analysis, and measures variables with objective, empirical indicators," and points out that their theory is thus as positivistic as any and more so than many. (See also Akers, 1991 and Akers, 1997.)

2. The same argument would apply to any questions about the cost effectiveness of flight versus rail travel; it

may be cheaper to take the train to Philadelphia than it is the fly to Boston, but that is no help if you are determined to get to Boston. In fact, the easiest and cheapest way to get either place is probably to steal a car and force someone to drive you there, but that option is unlikely to occur to most people who are not criminals, or at least criminologists.

3. Levi's succinct account of the essential issue merits quoting at length:

> The metaphysical theory of causality assumes that inductive generalization is possible because there is an order of nature expressing real relations which hold between the real things which compose the natural world. Such identities of patterns as disclose themselves in these mutual relations are the laws of nature, and from these uniformities or necessary connections we are entitled to trust in inductive inference. But Hume shifted the locus of his analysis from the necessary connection of things to the connections of ideas in the mind. He finds that although between such ideas there is a 'constant conjunction', there is no necessary connection, and that constant conjunction itself is a habit of belief and not necessity imposed by the texture of nature's connectedness. Thus originates the positivistic doctrine of scientific 'explanation'. Laws of nature are the observed identities of pattern disclosed in a series of comparative observations, but the pattern is a mere *description* wholly uninterpreted and without metaphysical implication. The doctrine is attractively simple, and it gives to scientific methodology imperatives admirable in their clarity: 'Keep to things observed' and 'Aim at descriptive simplicity.' But it leaves induction suspended in mid-air, cut off from its roots in the natural world. (1959:334)

4. Moore notes that evaluations of programs comes closest to unifying the methods of science with those of policy makers, because the goals of the program or policy has been set a priori by the policy makers. He makes clear, however, that such evaluations "...always seemed like a second rate, applied activity..." (2002:35) because it only shows that a how a particular program works in a particular place and leaves the underlying causal mechanisms hidden.

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