

GENERAL STRAIN THEORY AND SOCIAL SUPPORT:
A STUDY OF AFRICAN AMERICANS

A Thesis

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ABSTRACT

Agnew's (1992) general strain theory (GST) has gained increasing attention and empirical support for the effects of strain on negative emotions and deviant coping. However, previous research provides inconsistent results about (1) the effects of negative emotions on deviant coping, (2) the significance of social support in GST, and (3) gender differences and GST. This paper addresses these issues by testing hypotheses generated from GST and analyzing data collected from a nationally representative sample of African American adults. Results from ordinary least squares regression analyses generally support the hypotheses. First, the effects of strain on deviant coping are fully mediated by negative emotions. In addition, the same-directed effects of negative emotions on deviance (outer-directed negative emotions on outer-directed deviance) are larger than opposite-directed effects (inner-directed negative emotions on outer-directed deviance) as hypothesized. Second, social support was found to have significant direct effects on both negative emotions and deviant coping, while buffering effects of social support on strain and negative emotions as well as negative emotions and deviance were not observed. Finally, this study found no gender differences in emotional reactions to strain and the buffering effects of social support. Implications of these findings are discussed as well as the future development of GST.

INTRODUCTION

Agnew's (1992) general strain theory (GST) has rejuvenated criminological research on the etiological significance of strain since its introduction. GST generally receives empirical support, but the current literature on GST shows limited or mixed results on three specific issues. First, anger is found to have positive effects on deviance as GST posits, but other negative emotions like depression have less often been studied than anger and recent research tends to report mixed findings about the non-angry effects on deviant coping (Aseltine, Gore, and Gordon, 2000; Broidy, 2001). Second, while Agnew proposes that social support should help individuals respond to strain in non-deviant ways, the relevance of social support to GST has received little empirical support (Paternoster and Mazerolle, 1994; Capowich, Mazerolle, and Piquero, 2001). Finally, although Broidy and Agnew (1997) already extended GST to explain gender differences in emotional and behavioral responses to strain, research on this topic is scant and provides only limited findings about gender differences (Hoffman and Su, 1997; Mazerolle, 1998).

In order to address the first issue, this study examines the relationship between different types of negative emotions and deviant coping by making a conceptual distinction between non-angry (inner-directed) and angry (outer-directed) negative emotions. To contribute to the GST literature on social support, this paper tests hypotheses about the conditioning as well as direct and indirect effects of social support on negative emotions and aggression as deviant coping. Finally, in relation to the last issue, this paper examines gender differences not only in emotional responses to strain

but also the conditioning effects of social support on the relationship between negative emotions and aggression.

To empirically examine these issues, this paper uses ordinary least squares regression to analyze data collected from the National Survey of Black Americans. The survey is a nationally representative sample of African American adults which provides a unique opportunity to address the generalizability of GST in age as well as race given that prior research on GST is mostly based on data collected from adolescents or young adults who are predominately or exclusively white.

THEORETICAL OVERVIEW

STRAIN

Unlike the two dominant social psychological theories of crime and deviance, social control and social learning (Akers, 1985; Hirschi, 1969), Agnew's (1992) general strain theory (GST) focuses on negative relationships with others. GST conceptualizes strain as relationships in which an individual is not treated the way he or she wants to be treated. GST proposes three types of strain an individual might encounter: (1) the failure to achieve positively valued goals, (2) the removal of positively valued stimuli, and (3) the presentation of negative stimuli (Agnew, 1992). Agnew further expands strain theory to include a key motivational element of negative emotion. Specifically, strain creates negative emotions (e.g., anger, anxiety, depression) within the individual, which in turn, motivates him or her to cope with strain and accompanying negative emotions through legitimate or deviant means.

The main proposition of GST relies on the mediating effects of negative emotions, because the direct effects of strain on deviant coping can be interpreted in terms of social control or theories other than GST without specifying negative emotions as a key intervening variable. According to Agnew (1992, p. 60) "negative affect, especially anger, typically creates a desire to take corrective steps, with deviance being one possible response." Thus negative emotions provide a causal link between strain and deviance. Among a range of negative emotions, Agnew emphasizes outer-directed emotions like anger, but inner-directed ones like depression and anxiety are also proposed to motivate individuals to take corrective actions to alleviate strain (Agnew, 1992). Further, according to Agnew, it is likely that outer- and inner-directed negative

emotions tend to be strongly related to outer-directed (e.g., fighting) and inner-directed (e.g., drug use) deviance, respectively. A recent study provides empirical support for this hypothesis, although the relationships between negative emotions and deviance of opposite directedness (e.g., anger and drug use; or depression and fighting) are also found to be significant (Jang and Johnson, 2000).

Drawing from the stress and aggression literature, Agnew focuses on aggressive or violent acts. While Agnew does include drug use in GST as one possible act of deviance, there is more emphasis on interpersonal aggressive acts such as fighting. The importance of interpersonal aggression directly relates to the general proposition of GST on negative relationships with others. These negative relationships cause negative emotions, especially anger, that create a desire to retaliate, increases the injury felt by the individual, and gives the individual reason to justify the aggressive act to others (Agnew, 1992). In line with GST, interpersonal aggression will be examined in this study as an act of deviant coping.

Earlier strain theories failed to explain why not all strained individuals commit deviant acts in reaction to strain. Agnew proposes to explain it by conditioning factors that would affect the likelihood of a person's choice between conventional and deviant coping strategies. Strained individuals are likely to turn to deviance in an attempt to cope with strain, but not all strained individuals turn to deviance. Many of them choose non-deviant or conventional strategies to cope with strain cognitively, behaviorally, and emotionally. To explain the probability of a person choosing conventional strategies over interpersonal aggression, two kinds of conditioning effects should be examined by testing

whether the effects of strain on negative emotions and negative emotions on deviant coping are moderated by a conditioning factor (Jang and Johnson, 2000).

One of the major categories of conditioning factors is a variety of constraints to coping: that is, a person may be constrained in their use of conventional coping strategies. The constraints can be internal or external. For example, internal constraints include self-esteem and self-efficacy that help govern an individual's negative emotional state that may arise from strains and the reactions to those emotional states and strains. Those with high self-esteem are more resistant to stress and therefore should be less likely to cope with that stress in a deviant manner. External constraints, like social environments that make it difficult to escape from negative stimuli, may restrict an individual's use of conventional coping strategies. For example, adolescents may have difficulty leaving an abusive home environment, and may resort to deviant coping like running away to avoid such an adverse environment.

One of the external constraints discussed by Agnew (1992) is the concept of social support. Agnew (1992, p. 72) proposes that, "adolescents with conventional social supports, then, should be better able to respond to objective strains in a nondelinquent manner." However, his discussion of social support as a conditioning factor is limited and the number of studies on GST that examine social support and its conditioning effects on deviance is relatively small. Thus this paper is to address this gap in the current literature by empirically testing the effects of social support in moderating the effects of strain on negative emotions and negative emotions on interpersonal aggression.

SOCIAL SUPPORT

The concept of social support has been a reoccurring theme throughout the stress and mental health literature (for examples, see Cohen and Syme, 1985 and Vaux, 1988). However, the importance of social support as a key independent variable has received little attention in criminology. In a presidential address to the Academy of Criminal Justice Sciences, Cullen (1994) argued that social support could possibly be an organizational link for the theories of disorganization, control, and cultural values. Yet, Cullen (1994) also points out that, “... in criminology the insights linking social support to crime remain disparate, and are not systematized so far as to direct theoretical and empirical investigation” (p. 529). The concept of social support in criminological research has not been given adequate attention thus far.

Social support can take on different meanings to different researchers. While concept of family attachment in social control theory can be loosely conceptualized as one form of social support, assuming a traditional family relationship of nurturing and caring, a strong attachment to the family provides the individual with a basic social support group. An individual’s social network may also be examined in relation to social support. An individual’s network is made up of other people with whom he or she has contact. These other people all have the potential to aid the individual with some form of social support, yet the forms of social support can be numerous (Vaux, 1988). This can lead to a disparity in measuring the concept of social support. Without a clear definition and valid, reliable indicators to measure the concept, research on social support would be imprecise (Thoits, 1982).

This study defines social support as the degree to which a person's basic social needs (e.g., affection, esteem, approval, belonging, identity, and security) are gratified through interaction with others (Thoits, 1982). It implies important dimensions of social support: descriptions of available support, supportive behavior, descriptions of enacted support, and support appraisals (Vaux, 1988). Thus the concept of social support includes the perceived availability of support, the behavior that occurs during support, the support that is actually given, and whether the support was useful or not. In addition, support could be one of three different types: instrumental, emotional, and informational. Instrumental support entails the physical and economical support an individual receives from social support. Emotional support entails the affection, empathy, and acceptance gained from social support. Informational support involves advice and information conveyed from social support.

In his brief discussion of social support and its relation to strain, Agnew (1992) suggests that the three types of social support correspond to the three types of coping strategies. Each type of social support may provide aid to an individual in coping with strain and negative emotions. This aid would come in the form of affection, esteem/approval, belonging, identity, and security (Thoits, 1982). Individuals with a conventional social support system are likely to cope with strains in conventional ways thereby decreasing the likelihood of deviant coping (Agnew, 1992). This study focuses on the interactions between social support and the effects of strain on negative emotions and between social support and the effects of negative emotions on interpersonal aggression (see Figure 1).

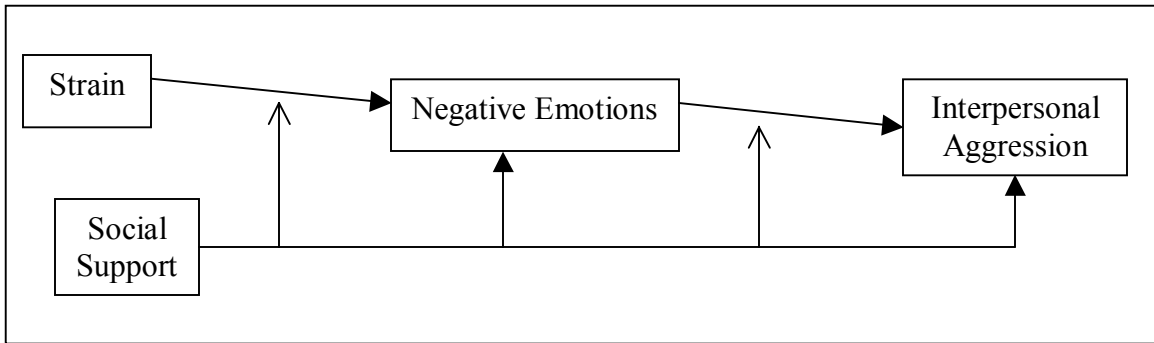


Figure 1. Direct and buffering effects of social support (open arrows indicate buffering effects; closed arrows indicate direct effects)

Research on GST that examines social support as a conditioning factor is sparse in comparison to other factors such as self-esteem and self-efficacy. Thus we have limited evidence of whether social support would weaken or buffer the positive effects of strain on negative emotions and those of negative emotions on deviance. This study will address these limitations by testing the interaction effects involving social support, strain, and negative emotions.

GENDER

Reviewing past literature from stress and mental health research as well as criminological research, Broidy and Agnew (1997) ascertain that females experience as much, if not more, strain as males. The distress literature suggests that females also report higher levels of psychological distress, or negative emotions, than males (Mirowsky and Ross, 1995). In conjunction with this, Broidy and Agnew (1997) find that females tend to experience higher levels of negative emotions in reaction to strain, but commit lower rates of deviance, especially interpersonal violence and aggression. This is contradictory to the GST proposition that strain or the degree of negative emotion elicited by strain has a positive relationship with deviant coping. Broidy and Agnew conclude that GST cannot explain gender differences in deviant coping in terms of

gender differences in strain because males experience as much, if not more, strains as females. They propose potential explanations for this apparent contradiction, one of which the present study focuses on; gender differences in both emotional responses to strain.

Males and females both experience anger from strain, yet females tend to have depression, guilt, and anxiety in conjunction with anger (Broidy and Agnew, 1997; Agnew and Brezina, 1997). Females experience anger accompanied by depression and anxiety, which is internalized through self-destructive forms of deviant coping such as drug use and eating disorders. From the stress literature, females have been shown to be more concerned with maintaining close relationships with others and meeting the needs of others in those relationships (Kessler and McLeod, 1984; Moore, 1990). Males, on the other hand, are more concerned with competitive successes and achievements. Women view their anger as a breakdown of their own self-control that may lead to the harm of relationships.

In this way, females tend to have more inner-directed negative emotions to avoid conflict with others in the interaction. The anger experienced by males tends to be accompanied by a sense of moral outrage, which is displayed externally through aggressive acts such as fighting. They blame others for the maltreatment they encounter and interpret such treatment as a direct challenge (Broidy and Agnew, 1997). The anger that women experience, coupled with other inner-directed emotions such as depression, is expected to manifest in inner-directed deviant coping like drug use. On the other hand, the anger experienced by men manifests itself in outer-directed deviance such as fighting

and other forms of interpersonal aggression. Therefore, females are less likely than males to turn to aggression due to differences in emotional responses to strain.

Differences in socialization of males and females also help identify the aspects of social support unique to each gender (Vaux, 1988). Hoffman and Su (1997), relying on the stress literature, use two separate theoretical models based on the socialization process to define how certain individuals react to strain that help refine the disparity between the genders. The first model, called the interpersonal model, focuses on individuals who are sensitive to interpersonal relations and have difficulty expressing anger. The individualistic model involves those who are sensitive to negative relations with others and who use anger and aggression to cope. It is argued that males ascribe to the latter model and females to the former model due to gender socialization processes. In addition, Vaux (1988) finds that, “feminine sex role characteristics should facilitate the support process,” and “masculine characteristics should impede this process” (p. 165). The male role emphasizes independence and rationality, and the female role emphasizes compassion and supportiveness.

The gender differences defined by the socialization argument may also be used in examining the buffering effects of social support. Females tend to have more close friends to turn to when they need help with problems because they are socialized to be more interpersonal, whereas males tend to be unwilling to seek help with problems because they are socialized to be more independent. It is then reasonable to assume that, individuals with more intimate groups of people to turn to in stressful times such as family have more social support resources. The effectiveness of social support weakening the effects of the negative emotions created by strain is expected to depend on

the environments in which the individual is found (see Stark 1996). Women enjoy more intimate groups of friends, and are closer to family members than men (Haines and Hurlbert, 1992). Thus, females tend to be found in more supportive environments than males, and females should experience the effects of social support more so than males. This implies that the buffering effects of social support should have greater effects for females since they tend to have more resources of social support than do men.

HYPOTHESES

This study tests the following hypotheses derived from Agnew's general strain theory.

Hypothesis 1 (a) Strain has a direct, positive effect on negative emotions; (b) negative emotions have a direct positive effect on interpersonal aggression.

Hypothesis 2 Outer-directed emotions have greater effects on interpersonal aggression (outer-directed deviance) than inner-directed emotions.

Hypothesis 3 The effects of being female are greater on inner- than outer-directed emotions.

Hypothesis 4 (a) Social support has a direct negative effect on negative emotions and (b) interpersonal aggression.

Hypothesis 5 Social support weakens or buffers (a) the effects of strain on negative emotions and (b) the effects of negative emotions on deviant coping.

Hypothesis 6 The buffering effects of social support are greater for females than males.

PRIOR RESEARCH

STRAIN

In the first empirical study on GST, Agnew and White (1992) tested the hypothesis of strain having direct effects on delinquency while controlling for the variables of social control and social learning theory. Although they found significant direct effects of strain, this study is a limited test of GST because it did not include a measure of negative emotions. Agnew and White also tested the effects of delinquent friends and self-efficacy as conditioning factors and found these factors significantly strengthen (delinquent friends) and weaken (self-efficacy) the effects of strain on delinquency as hypothesized. Other empirical studies have shown that strain has direct effects on deviant behavior (Paternoster and Mazerolle, 1994; Hoffman and Miller, 1998; Aseltine, Gore, and Gordon, 2000).

In their replication and extension of Agnew and White's (1992) study, Paternoster and Mazerolle (1994) examined the conditioning effects of social support as well as self-efficacy, delinquent disposition, delinquent peers, and moral beliefs. They constructed their measure of social support based on social support the adolescent may receive from friends and parents. Paternoster and Mazerolle used a nine-item scale that intended to represent the degree of support the respondents believed they would receive from their mother, father, and friends if they got into trouble at school, with police, and in the neighborhood. While reporting significant effects of strain on delinquency, Paternoster and Mazerolle found that all but one of the conditioning variables (self-efficacy) failed to significantly interact with strain in explaining delinquency. In addition to this null finding about conditioning effects, they failed to include the negative emotion variable in

their model. Before reviewing studies examining negative emotions, it is worthwhile to briefly discuss two limitations in Paternoster and Mazerolle's study that might not have allowed for a proper test of the social support variable in the context of GST.

First, the effects of social support on negative emotions were not tested in the study. Although they do test social support's interactions with the effects of strain on delinquency, various forms of strain may not be alleviated by the individual's social support network (i.e., job loss or death of a loved one). As Agnew (1992) points out, the negative emotions that result from strain motivate an individual to respond to strain. Social support may help an individual respond to or deal with his or her negative emotions more than strain. Therefore, investigating social support's interactions with negative emotions rather than strain is more relevant.

The second limitation concerns the measurement of the social support variable. Paternoster and Mazerolle's measure only included the perceived support from friends and parents the respondent may receive when he or she got into trouble. Thus it is assumed that a deviant act has occurred and has been or is being sanctioned by some form of authority figure (i.e., teacher or police). Since the individual is assumed to have already committed a deviant act, their social support is measured as a result of a deviant outcome. However, social support should be measured without reference to, or independently from specific outcomes (Thoits, 1982). Given these two limitations, social support's buffering effects might not have been fully tested in Paternoster and Mazerolle's work.

Aseltine, Gore and Gordon (2000) tested the GST variables of strain and negative emotions on delinquency. Aseltine et al. used anger and anxiety as the measure of

negative emotions between strain and deviance, measured by aggressive deviant acts, non-aggressive deviant acts, and drug use. They not only found significant direct, positive effects of strain on all three measures of deviance, but also significant indirect effects of strain on one measure of deviance, aggressive deviant acts, through anger. Agnew (1992) explicitly mentions anger as the key negative emotion that motivates an individual to take corrective action in which aggressive deviant coping may result. Other research on GST also has found anger to be significantly related to deviant behavior (Broidy, 2001; Capowich, Mazerolle, and Piquero, 2001). Although Aseltine et al. incorporated conditioning effects of family attachment, self-esteem, and mastery in their study, they found very few significant interactions.

A recent study by Capowich, Mazerolle, and Piquero (2001), examined social support and its relationship with the GST variables of strain, negative emotions, and delinquency. Using two measures of negative emotions (anger and non-angry negative emotions) and three dependent variables (fighting/arguing, theft, and driving under the influence), they found that anger was a significant predictor of fighting only, whereas non-angry negative emotions (i.e., feeling overwhelmed, depressed, unhappy) predicted theft. Measuring social support in terms of perception and actual support, the authors compared GST variables of respondents with low scores on these measures to those with high scores. Social support was not found to influence any of the dependent variables.

Two important limitations are observed throughout the previous studies reviewed above. The first limitation concerns the samples used. The samples used in Agnew and White (1992), Paternoster and Mazerolle (1994), and Aseltine et al. (2000) were drawn from adolescents leaving the results restricted to that population. In particular, Aseltine

et al. used a primarily white sample in their study. Other studies on GST are based on university undergraduate samples that limit findings in terms of age generalizability (Broidy, 2001; Capowich et al., 2001).

Second, social support and its processes have not been properly examined. Capowich et al. did not test the buffering hypothesis, instead they simply compared strain, negative emotions, and deviant behavior of groups based on their levels of social support. Paternoster and Mazerolle (1994) tested the interaction effects of social support, but their measure of social support is potentially problematic. Although both studies provide no evidence of social support's conditioning effects in relation to GST, limitations in each may not have allowed for a proper test of social support.

According to Broidy and Agnew (1997), males tend to get angry and act on that anger in a deviant manner as opposed to females who also get angry, but that anger is accompanied by other negative emotions such as depression and guilt. In a study using strain and self mastery as independent variables with an outcome variable of depression, results show that women feel more depressive symptoms than men (Nolen-Hoeksema, Larson, and Grayson, 1999). While this study does not look at deviant outcomes nor does it contain anger as an outcome, it indicates a gender difference in inner-directed emotional outcomes resulting from strains that have been found in other studies (see Lengua and Stormshak, 2000).

In a study of gender differences in psychiatric symptoms, Casper, Belanoff, and Offer (1996) examined both depressive symptoms as well as anger as outcome variables. Comparing the means between females and males, Casper et al. found that females significantly reported higher levels of psychological distress, or negative emotions than

males. When the authors examined individual scales of psychological distress (depression, anxiety, and anger), significant gender differences were found in each, with males reporting higher levels of anger whereas females reported higher levels of depression and anxiety. The authors note that tension or stress felt from negative life events was found in both females and males, but that tension for males is connected to anger whereas it is connected to sadness and crying for females. Other studies have confirmed this gender difference in type of negative emotion (Lengua and Stormshak 2000; Stevenson, Reed, Bodison and Bishop 1997; LaFreniere and Dumas, 1996). However, examining anger, sadness, malaise, and aches, Mirowsky and Ross (1995) find that women experience each of these distressed feelings more so than men, while anger is not substituted with but tends to be accompanied by depressive feelings and anxiety as expected.

SOCIAL SUPPORT

Social support has received more attention in the psychological than sociological distress literature. For example, in a study on depressive symptoms among pregnant women, Ritter, Hobfoll, Lavin, Cameron, and Hulsizer (2000) examined social support's effects on depression and its distress-buffering effects. This study used a sample of both African Americans and Caucasians. Their results show that social support has a significant negative direct effect on depression, while the stress-buffering effects were found to be non-significant.

In a meta-analysis of the distress literature, however, Cohen and Wills (1985) find that whether social support has significant direct or buffering effects on depressive symptoms depends on the measurement of social support. Specifically, evidence for the

buffering effect model tends to be observed when the social support measure is derived from interpersonal resources that respond to an individual's needs based on the stressful events. On the other hand, evidence for the direct effect model is found when the social support measure is based on an individual's degree of integration in the community. In other words, social support's direct effects involve the size of an individual's support network (family and non-family members) while social support's buffering effects are found for measures of perceived support. According to Moore (1990), male and female network size contains similar numbers of members, but females tend to have more family based ties than males. This means that women's networks tend to be filled with more intimate contacts (family) than the male network, which is comprised of fewer intimate contacts and more non-intimate ties (friends). In addition, perceived social support tends to have greater buffering effects for females whose network includes more intimate contacts, whereas size of the support network has larger direct effects for males than females.

Walen and Lachman (2000) examined social support's effects in conjunction with strain on psychological well-being. Using a predominately upper class, white adult sample, the authors test social support's effects in both models of buffering and direct effects with the outcome variables of life satisfaction as well as both positive and negative moods. Measuring perceived support as opposed to the size of the support network, results show that both support and strain measures have significant effects on psychological well-being, though social support explained more variance in life satisfaction and positive mood than negative mood. While strain was found to explain the variance in negative mood, results failed to support the interaction between strain and

social support for the total sample. However, they found that social support significantly weakens the effects of strain on life satisfaction and positive mood among females, but not males. Similarly, Slavin and Rainer (1990) found gender differences in adult support, friend support, and depressive symptoms with females reporting higher levels of support than males (except family support, in which there was no significant difference). They also found that the direct effects of social support on depressive symptoms are greater for females than males.

On the other hand, some researchers fail to find significant gender differences. For example, Antonucci and Akiyama (1987) tested the gender differences in the effects of social support on well-being, measured on a 5-point happiness scale. Their results show that women tend to report higher average levels of social support than men and social support has significant effects on well-being for both genders. However, they found no significant gender differences in the effects of social support on well-being.

Prior research on gender differences in perceived social support (i.e., emotional support) as well as social support networks (i.e., size) tends to show that both concepts of social support are relevant to females and males, yet perceived support tends to favor females more so than males (Slavin and Rainer, 1990; Antonucci and Akiyama, 1987; and Turner, 1994). Although it is important to find gender differences in the effects of social support, it is primarily based on the models that focus on depression as the outcome variable. Thus, social support's role in a model including anger as distress and deviance as its outcome needs to be examined in the framework of GST.

DATA AND MEASURES

The data used in this study comes from the National Survey of Black Americans (NSBA). The survey was based on a nationally representative sample of African American adults (i.e., over 18 years of age) and completed in 1989. The sample was obtained through a multistage area probability sampling of households throughout the continental United States on the basis of the national distribution of African Americans from the 1970 Census (Jackson, 1991). One member from each household was selected for the interview. This study is based on data collected from those respondents who reported a “personal problem” and their emotional as well as behavioral responses to the problem (n = 258).

The present sample is comprised of 73% (n = 188) females and 27% (n = 70) males. Males are underrepresented in this study which may be explained in two ways. First, since the NSBA was a household survey, females were more likely interviewed because they were more likely to be at home at the time of the interview. Second, these differences may also be due in part by high incarceration rates of African American males as opposed to females in the United States.

Unlike previous research studies on GST which utilize data collected from adolescent or college student samples (Agnew and White, 1992; Paternoster and Mazerolle, 1994; Aseltine et al. 2000; Broidy, 2001), this study analyzes data collected from an adult sample. Also, it is a sample of African Americans, although previous researchers used predominately white samples (Agnew and White, 1992; Paternoster and Mazerolle, 1994; Aseltine et al. 2000). Thus, the use of an African American sample provides an opportunity to examine the generality of GST with respect to race.

In order to measure strain, this study uses a set of questions that include eight different types of problems: health, money, job, people outside the family, crime, police, love, and race problems (see Appendix). Almost the entire sample (99%, $n = 226$) answered this set of questions. To measure the concept of strain, an index, called here “strain,” was created by summing the responses to the eight questions so that a high score indicates a high level of strain. These items are a reflection of Agnew’s three types of strain.

NSBA also asked a set of questions pertaining to negative emotions caused by strain. Respondents are first asked to name a specific personal problem that he or she had encountered, and then they were asked about their emotional and behavioral responses to the personal problem. Though the responses to these questions are based on one personal problem, they are likely to reflect the respondent’s tendency to show negative emotional responses to any strain. Therefore, the negative emotions reported in this set of questions will be used as a proxy for negative emotions elicited by strain as directly measured in this study.

To measure inner- and outer-directed negative emotions, two scales were constructed from a set of questions asking about how the respondent felt during a time they were dealing with a specific personal problem. Seven items, including loneliness, being depressed, feeling jumpy or jittery, and loss of appetite, were asked about inner-directed emotions measuring the concept of depression and anxiety, called here, “depression.” Responses to these questions range from very often to never (see Appendix). Factor loadings (.63 to .75) and their inter-item reliability ($\alpha = .84$) are high. The measure of outer-directed emotions, called “anger,” includes three items, including

boiling inside, angrier than willing to admit, and losing one's temper. High factor loadings (.52 to .58) and high inter-item reliability ($\alpha = .76$) were found with these items as well. An omnibus measure, called "negative emotions," was also constructed by combining these two sets of items.

The dependent variable, called "aggression," was measured by a single item asking how often a respondent they "fought or argued" during the time he or she was dealing with the personal problem. Like the questions involving negative emotions, the responses ranged on a 5-point scale from never to very often.

The concept of social support is measured by a two-item scale that measures respondent's self-reported number of people that he or she could turn to if he or she needed help. Specifically, the first question asks the respondent to report the number of family members that would help that respondent (0 = none, 2 = one to two, 3 = three to four, 4 = five to seven, 5 = eight or more). The second question asks the respondent to report the number of friends that would help out, but the responses were a simple count (code number 0-7, 8 = 8 or more). After recoding these responses to make them consistent with the responses found in social support received from family, these two items are combined to construct a measure called "social support." These two questions not only measure the size of the respondent's support network, but by including the phrase "help you out if you needed help," it also captures the perceived support.

In addition to gender (0 = male, 1 = female), two control variables are included in the analysis, age and income. Mirowsky and Ross (1989) find that negative emotional outcome levels (i.e., depression) in individuals start out high in younger individuals, decrease until about the age of 55 then increase. They also find that those individuals

who report higher income levels report lower negative emotional outcomes. Thus age and income are both expected to have a negative relationship with the outcome variables of all three negative emotion variables and interpersonal aggression.

Age was computed by subtracting the respondent's birth year from the year of the interview. Ages of respondents ranged from 39 to 99 with a mean age of 62. To measure the curvilinear relationship of age and the negative emotion, an age squared term is constructed by subtracting the age term from its mean then squaring it. Income, used as an indicator of socioeconomic status, was measured by imputed family income. The original investigator employed the method of imputation based on a series of correlations and regressions in order to construct a measure of family income because 62.7 percent of the sample failed to provide information about it (Jackson, 1991). Specifically, the estimation of each family's income was based on employment status, age, and number of individuals in the household. Imputed annual family income ranges from \$250 to \$315,000 with the mean income of \$24,062.

ANALYSIS

Ordinary least squares (OLS) regression analysis is applied to test the hypotheses. A one-tailed test was conducted for all hypothesized associations, whereas a two-tailed test for non-hypothesized or unexpected relationships to determine statistical significance using an alpha level of .05. A final sample ($n = 229$) was obtained from the data by using listwise deletion of missing cases.

The analysis consists of two parts. The first part contains six models based on the three measures of negative emotions as outcome variables. Specifically, three additive models are constructed to estimate the effects of strain, social support, gender, and the control variables of age and income on the three measures of negative emotions: anger, depression, and negative emotions. And then a multiplicative interaction term involving social support and strain is introduced to three models to test the strain-buffering effects of social support. The interaction term was constructed by multiplying its constituent terms, social support and strain. To avoid the potential problem of multicollinearity, each GST constituent term was centered by subtracting the mean from the individual score before multiplying them. Given the hypothesized relationship, the multiplicative terms are expected to have a negative effect on each measure of negative emotion.

The second part of the analysis consists of three sets, each of which contain three models to estimate the effects of strain, one of the three measures of negative emotions, social support, gender, and control variables on interpersonal aggression. Also presented in this part of the analysis is a single model without any measures of negative emotions in order to examine whether the direct effects of strain on interpersonal aggression are mediated by the negative emotional measures. In the first set, negative emotions, anger,

and depression are introduced individually to the model that includes strain, gender, social support, and control variables. This set of analysis is conducted to test whether each measure of negative emotion has a direct positive effect on interpersonal aggression. This set also intends to test the relative strength of the effects of both inner- and outer-directed negative emotions on interpersonal aggression. Outer-directed negative emotions (anger) are hypothesized to have a stronger positive relationship to the outcome variable, which is outer-directed deviance, than inner-directed negative emotions (depression).

In the next set of analysis, an interaction term is added to estimate whether social support buffers the effects of each measure of negative emotions on interpersonal aggression. It is expected that each of these interaction terms will have a negative relationship with the dependent variable. In addition, the final set involves adding a three-way interaction term (i.e., female x social support x negative emotions) to test the gender differences in the buffering effects of social support on the three measures of negative emotions. The effects of the three interaction terms are all expected to be negative because the distress-buffering effects are hypothesized to be larger for females than males.

RESULTS

Table 1 reports the zero-order Pearson correlations of all variables and the variables' means and standard deviations. The measure of social support is significantly correlated in the expected direction with all the key variables except strain (-.01). Also, all of the key variables of GST (i.e., strain, anger, depression, and negative emotions) have significant correlations with each other in the expected direction, with the exception of the non-significant correlation between strain and interpersonal aggression (.11). These significant correlations tend to suggest that the measures of theoretical concepts have generally been properly constructed.

On the other hand, the key demographic variable, gender (being female), has a significant correlation only with interpersonal aggression (-.19). The non-significant correlations between the gender variable and the measures of negative emotions as well as strain suggest that the negative emotions and strain reported are not significantly different for males and females. This is not consistent with previous findings that females have higher levels of depression and anxiety than males (Lengua and Stormshak 2000; Nolen-Hoeksema, Larson, and Grayson, 1999; Mirowsky and Ross, 1989). On the other hand, previous studies provide ambiguous findings about gender differences in the amount of strain, while gender differences in the type of strain has been proposed (Broidy and Agnew, 1997).

The first set of OLS regression results are based on three measures of negative emotions as dependent variables: depression and anger as well as their combined measure, negative emotions (see Table 2). The first column of each regression model in Table 2 presents the direct effects of strain, social support, and control variables on

negative emotions. The second column shows the results from estimating each model after adding the interaction term of strain and social support to the initial, additive model.

Before discussing results for hypothesis testing, it is worth summarizing findings about control variables. Age is shown to have negative effects on negative emotions, which is due to its significant effects on anger but not on depression. This may indicate that age-related maturity tends to decrease negative emotional, especially angry, reactions to strain, but getting old does not seem to necessarily protect an individual from getting depressed in response to a personal problem. In addition, the non-significant squared term of the age variable shows that the curvilinear relationship of age and negative emotions is not observed in the present study unlike Mirowsky and Ross's (1989). As expected, income has negative effects on negative emotions, specifically, depression, but not on anger. That is, higher levels of financial status tend to lead an individual to have lower levels of negative emotions in response to strain, especially depression, which is consistent with previous research (e.g., Mirowsky and Ross, 1989).

Results from this set of regression analyses support the hypothesized relationships between strain, social support, and negative emotions. As hypothesized (Hypothesis 1a), strain has positive effects on negative emotions consistently across all three measures in the additive models: negative emotions (1.25), depression (.60), and anger (.65). This finding is consistent with GST that suggests individuals with higher levels of strain tend to react to personal problems with higher levels of negative emotions. This set of regression results also provides empirical support for the Hypothesis 4a: social support

TABLE 1. Descriptive Statistics and Zero-Order Correlations of Variables (n = 229)

	Age	Income	Female	Social support	Depression	Anger	Negative emotions	Strain	Interpersonal aggression
Age	1.00								
Income	-.31 ⁺	1.00							
Female	.03	-.24 ⁺	1.00						
Social Support	.05	.13*	-.08	1.00					
Depression	.01	-.27 ⁺	.13	-.17 ⁺	1.00				
Anger	-.27*	-.02	-.06	-.21 ⁺	.47 ⁺	1.00			
Negative emotions	-.08	-.21 ⁺	.08	-.21 ⁺	.95 ⁺	.72 ⁺	1.00		
Strain	-.14*	-.15 ⁺	.02	-.01	.15 ⁺	.30 ⁺	.23 ⁺	1.00	
Interpersonal Aggression	-.18*	.22*	-.19 ⁺	-.12 ⁺	.23 ⁺	.48 ⁺	.35 ⁺	.11	1.00
Mean	61.90	24224.97	.73	5.25	22.17	9.49	31.65	1.83	2.21
Standard deviation	14.32	18343.86	.44	1.80	7.11	3.17	9.05	1.32	1.22

* $p < .05$ (two-tailed), ⁺ $p < .05$ (one-tailed)

negatively affects all three negative emotion measures. Individuals with friends and family members whom they can turn to for help are less likely to react to strain with negative emotions than those without such friends and family members.

However, there is no empirical support for Hypothesis 3 that the effects of being female are greater on inner-directed emotions than males. That is, being female does not influence the type of negative emotions (anger or depression) experienced by the individual in response to strain. This is inconsistent with previous findings that women tend to respond to strain with depression rather than anger (Mirowsky and Ross, 1989; Casper, Belanoff, and Offer, 1996; Nolen-Hoeksema, Larson, and Grayson, 1999). The strain-buffering hypothesis (Hypothesis 5) also failed to receive empirical support given the non-significant interaction term in all three models. Thus, the present study shows that social support does not significantly buffer the effects of strain on negative emotions in response to strain although it significantly reduces the probability of an individual reacting to strain with negative emotions.

Table 3 reports the second set of results from estimating ten regression models with the dependent variable of interpersonal aggression. The first column shows the base model that estimates the direct effects of strain on aggression without negative emotions included in the model. The next three columns (Models 2 through 4) represent models after adding each measure of negative emotions to the base model. The next set of three columns (Models 6 through 8) introduces the two-way interaction term involving social support and each measure of negative emotions to the additive models. Finally, the last

TABLE 2. Estimated Effects of Strain, Social Support, and Controls on Negative Emotions. (n=229)

Independent variable	Negative emotions		Depression		Anger	
Age	-.09*	-.09*	-.03	-.03	-.06*	-.06*
	(-.15) ^a	(-.14)	(-.06)	(-.05)	(-.27)	(-.27)
Female	.30	.30	.85	.85	-.56	-.56
	(.02)	(.02)	(.05)	(.05)	(-.08)	(-.08)
Income	-.00*	-.00*	-.00*	-.00*	.00	.00
	(-.18)	(-.18)	(-.23)	(-.24)	(.01)	(.01)
Social Support	-.90*	-.93*	-.51*	-.55*	-.39*	-.38*
	(-.18)	(-.18)	(-.13)	(-.14)	(-.22)	(-.22)
Strain	1.25*	1.21*	.60*	.55	.66*	.66*
	(.18)	(.18)	(.11)	(.10)	(.27)	(.27)
Social support X strain		.20	.25	.25	-.05	-.05
		(.06)	(.09)	(.09)	(-.04)	(-.04)
Constant	41.12	41.09	26.93	26.89	14.19	14.20
Adjusted R ²	.11	.11	.09	.09	.18	.17

* $p < .05$ (one-tail)

^aStandardized coefficients are in parentheses

three columns (Models 9 through 11) show results from estimating another set of interactive models, which include not only the two-way but also a three-way interaction term involving the female variable and a two-way interaction term, to test whether the distress-buffering effects are greater for females than males.

Models 2 to 4 provide empirical support for Hypothesis 1b. That is, each measure of negative emotions has a direct, positive effect on interpersonal aggression. Individuals that experience negative emotions that are generated from strain are more likely to cope with these emotions in a deviant manner, such as fighting and arguing. Similar results have also been found in other studies (Broidy, 2001; Capowich et al., 2001). In addition, the significant, direct effects of strain on interpersonal aggression found in the base model (Model 1) become non-significant with the addition of any measure of negative emotions. This finding along with the significant effects of strain on measures of negative emotions (see Table 2) give empirical support to GST, which states that negative emotions mediate the effects of strain on deviant coping.

Results presented in Model 5 also provide support for Hypothesis 2: outer-directed negative emotions have stronger effects on the outer-directed deviant behavior, interpersonal aggression, than inner-directed emotions. When both anger and depression are included in the model, only anger is significant. While the effects of all three measures of negative emotions on aggression are significant, the effects of anger are stronger than those of depression. This finding of same-directed effects (i.e., outer-directed emotion --> outer-directed deviance) being larger than opposite-directed ones (i.e., inner-directed emotion --> outer-directed deviance) is consistent with a previous study (Jang and Johnson, 2000).

TABLE 3. Estimated Effects of Strain, Social Support, Negative Emotions, and Controls on Interpersonal Aggression (n = 229)

Independent	Models										
	1	2	3	4	5	6	7	8	9	10	11
Age	-.00 (-.10) ^a	-.00 (-.05)	-.00 (-.09)	.00 (.01)	.00 (.00)	-.00 (-.16)	-.00 (-.08)	.00 (.01)	-.00 (-.08)	-.00 (-.11)	.00 (-.01)
Female	-.41*	-.43*	-.46*	-.32*	-.35*	-.43*	-.46*	-.32*	-.45*	-.47*	-.32*
Income	(-.15)	(-.16)	(-.17)	(-.12)	(-.13)	(-.16)	(-.17)	(-.12)	(-.16)	(-.17)	(-.12)
	.00*	.00*	.00*	.00*	.00*	.00*	.00*	.00*	.00*	.00*	.00*
	(.20)	(.27)	(.27)	(.20)	(.22)	(.27)	(.27)	(.20)	(.27)	(.27)	(.20)
Strain	.12*	.05	.08	.00	.01	.06	.09	.00	.06	.09	.01
	(.13)	(.06)	(.10)	(.01)	(.01)	(.06)	(.10)	(.01)	(.06)	(.10)	(.01)
Social support	-.12*	-.07*	-.09*	-.05	-.05	-.07*	-.09*	-.05	-.07	-.09*	-.05
	(-.17)	(-.10)	(-.13)	(-.07)	(-.07)	(-.10)	(-.13)	(-.07)	(-.10)	(-.13)	(-.07)
Negative emotions		.05*				.05*			.05*		
		(.38)				(.39)			(.39)		
Depression			.05*	.02	.02		.05*			.05	
			(.30)	(.12)	(.12)		(.30)			(.30)	
Anger				.17*	.15*			.18*			.18*
				(.45)	(.40)			(.46)			(.46)
(Negative emotions x Social support)						-.00			.00		
(Depression x Social Support)						(-.05)	-.04		(.01)	-.01	
(Anger x Social support)							(-.04)			(-.01)	
(Negative emotions x Social support x Female)								-.00			-.05
(Depression x Social support x Female)								(-.02)			(-.02)

(Table continues)

Independent	Models											
	1	2	3	4	5	6	7	8	9	10	11	
(Anger x Social support x Female)												-.00 (-.00)
Constant	3.18	1.04	1.80	.71	.45	.99	1.76	.69	1.02	1.77	.69	
Adjusted R^2	.10	.23	.18	.27	.28	.23	.18	.27	.23	.18	.26	

* $p < .05$ (one-tail).

^a Standardized coefficients are in parentheses

Hypothesis 4b also tends to receive empirical support. In the first four models, the direct effects of social support are significant in all but the model containing anger (Model 4). The effects of social support are reduced from the base model (Model 1) when negative emotions are introduced to the model. This pattern indicates that effects of social support on interpersonal aggression can be partly explained by depression and fully explained by anger. That is, those who have social support from family and/or friends are less likely to turn to aggression in response to personal problems than those who do not because the former are less likely than the latter to react to strain with negative emotions like anger and depression.

The last six columns show two sets of estimated interactive models. None of the interaction terms included in the models is found to be significant, failing to support Hypotheses 5b and 6. Social support is not found to significantly weaken the effects of negative emotions on interpersonal aggression, which is similar to what Capowich et al. (2001) report in their study on the effects of situational anger on fighting. In other words, social support does not weaken the effects of negative emotions on fighting and arguing. This pattern also applies to both females and males according to the estimated models including the three-way interaction terms.

DISCUSSION AND CONCLUSION

This study was intended to answer several research questions including a key one: Does having helpful friends and family members reduce a chance that an individual chooses to use deviant coping when faced with life strains and the negative emotions that result from strain? In relation to this question, two theoretical relationships were hypothesized within the framework of Agnew's (1992) general strain theory (GST) and based on the social support literature as well as the findings of previous studies of GST. The first relationship concerns the effects of social support on negative emotions that arise from strain and deviant coping that may result from those emotions. The second relationship focuses on social support conditioning the effects of strain on negative emotions and negative emotions on interpersonal aggression.

Before discussing some of the key findings about social support, it is worthwhile to highlight the results involving the theoretical variables of GST (i.e., strain, negative emotions, and deviant coping). Agnew (1992) proposed in GST that strain creates negative emotions (e.g., anger, anxiety, depression) within the individual, which in turn, motivates him or her to cope with strain and accompanying negative emotions through legitimate or deviant means. This study provides empirical evidence that supports this hypothesis. Strain was found to have positive effects on negative emotions and deviant coping, and the effects of strain on deviant coping were fully mediated by negative emotions as GST would predict.

In addition to this empirical support for GST, the directedness of negative emotions was also examined. According to Agnew (1992), it is likely that outer- and inner-directed negative emotions tend to be strongly related to outer-directed (e.g.,

fighting) and inner-directed (e.g., drug use) deviance, respectively. This study finds that the outer-directed negative emotion of anger has significantly stronger effects on the outer-directed deviance of fighting and arguing than the inner-directed negative emotion of depression.

Gender was examined in relation to GST variables. Examining gender differences in negative emotions, previous studies show that females respond to stressful situations with higher levels of negative emotions, especially depression (Mirowsky and Ross, 1995; Casper, Belanoff, and Offer, 1996; Broidy and Agnew, 1997; Nolen-Hoeksema, Larson, and Grayson, 1999; Lengua and Stormshak, 2000). Results from this study, however, show that males and females respond to strain with similar levels of anger and depression, while females are significantly less likely to fight and argue as a result of those emotions than males. The lack of gender differences in negative emotions may be due to the unique nature of this study's sample. Specifically, it is speculated here that African American females may be similar in social position to their male counterparts given the high proportion of female-headed households, and thus African American females and males may experience similar levels of strains (i.e., financial strain) and resultant negative emotions.

Next, social support was found to have significant direct effects on negative emotions and indirect as well as direct effects on interpersonal aggression as hypothesized, but was not found to buffer the effects of strain on negative emotions. That is, while social support reduces the probability that an individual responds to strain with interpersonal aggression because support decreases negative emotions in reaction to strain, it does not weaken the effects of negative emotions on interpersonal aggression.

Although most of the coefficients of the interaction terms were in the expected direction, none of the terms achieved statistical significance.

One reason for this null finding may be related to the present study's conceptualization of social support. It may be that the dimension of friends and family members used here may be too limited to capture the buffering effects of social support. Therefore, broadening the conceptualization of the concept of social support may yield different results. For example, previous research shows that religiosity has an inverse relationship with distress (Ellison, Boardman, Williams, and Jackson, 2001) and religiosity has been shown to buffer the effects of negative emotions on deviant coping (Jang and Johnson, 2000). Thus, expanding the measure of social support to include not only support from friends and family but also support from members of religious organizations may provide findings that support the buffering effects of social support. This would be potentially fruitful topic to pursue especially given that religiosity has been found to have larger positive impact on African Americans than whites (Ellison, 1993).

This study has limitations that need to be acknowledged. First, the outcome variable, fighting and arguing, is the type of deviant coping that GST focuses on but limited to an outer-directed one. Results from this study and others have found significant effects of outer-directed negative emotions on outer-directed deviant coping, yet findings on the relationship between inner-directed negative emotions and deviant coping are not clear (Aseltine et al. 2000; Capowich et al., 2001). Future research on the directedness of deviant outcomes and negative emotions needs to incorporate inner- as well as outer-directed measures of both concepts. Second, this study is based on cross-

sectional data. While it is believed that the method by which the questions were asked about the key GST variables (i.e., negative emotions were reported as a reaction to a personal problem) provides a unique opportunity to test causal hypotheses, future research should employ longitudinal data with short intervals between waves to better test causal ordering of GST variables (Agnew and White, 1992; Broidy, 2001). Finally, this study used data collected from African Americans thus limiting the generalizability of the present finding to one ethnic group. Future research should focus on other ethnic groups (e.g., Asians or Hispanics) to examine the ethnicity-related generality of GST.

Despite these limitations, this study provides empirical support for the key relationships between strain, deviant coping, and the intervening variable of negative emotions presented in Agnew's GST. In addition, the effects of social support are found to lower both an individual's negative emotional reaction to strain and deviant coping, though buffering effects of social support were not found in the present study. Conceptual elaboration of social support would benefit future efforts to further examine the role the social support concept plays in the framework of GST.

REFERENCES

- Agnew, Robert. 1992. "Foundation for a General Strain Theory of Crime and Delinquency." *Criminology* 30: 47-87.
- Agnew, Robert and Timothy Brezina. 1997. "Relational Problems with Peers, Gender, and Delinquency." *Youth and Society* 29: 84-111.
- Agnew, Robert and Helen R. White. 1992. "An Empirical Test of General Strain Theory." *Criminology* 30: 475-499.
- Akers, Ronald L. 1985. Deviant Behavior: A Social Learning Approach. Third Edition. Belmont, CA: Wadsworth Publishing Company.
- Antonucci, T.C. and H. Akiyama. 1987. "An Examination of Sex Differences in Social Support Among Older Men and Women." *Sex Roles* 17: 737-749.
- Aseltine, Robert H., Gore, S., and Gordon, J. 2000. "Life Stress, Anger and Anxiety, and Delinquency: An Empirical Test of General Strain Theory." *Journal of Health and Social Behavior* 41: 256-275.
- Broidy, Lisa M. 2001. "A Test of General Strain Theory." *Criminology* 39: 9-35.
- Broidy, Lisa M. and Robert Agnew. 1997. "Gender and Crime: A General Strain Theory Perspective." *Journal of Research in Crime and Delinquency* 34: 275-306.
- Capowich, George E., Mazerolle, P., and Piquero, A. 2001. "General Strain Theory, Situational Anger, and Social Networks: An Assessment of Conditioning Influences." *Journal of Criminal Justice* 29: 445-461.
- Casper, Regina C., Belanoff, Joseph, and Offer, Daniel. 1996. "Gender Differences, but No Racial Group Differences, in Self-Reported Psychiatric Symptoms in Adolescents." *Journal of the American Academy of Child and Adolescent Psychiatry* 35: 500-508.
- Cohen, Sheldon and S. Leonard Syme. 1985. Social Support and Health. Orlando, Florida: Academic Press, Inc.
- Cohen, Sheldon and T.A. Wills. 1985. "Stress, Social Support, and the Buffering Hypothesis." *Psychological Bulletin* 98: 310-357.
- Cullen, Francis T. 1994. "Social Support as an Organizing Concept for Criminology: Presidential Address to the Academy of Criminal Justice Sciences." *Justice Quarterly* 11: 527-559.

- Ellison, Christopher G. 1993. "Religious Involvement and Self-Perception among Black Americans." *Social Forces* 71: 1027-1055.
- Ellison, Christopher G., Boardman, J. d., Williams, D.R., and Jackson, J.S. 2001. "Religious Involvement, Stress, and Mental Health: Findings from the 1995 Detroit Area Study." *Social Forces* 80: 215-249.
- Haines, V. A. and J. S. Hurlbert. 1992. "Network Range and Health." *Journal of Health and Social Behavior* 33: 254-266.
- Hirschi, Travis. 1969. Causes of Delinquency. Berkeley, CA: University of California Press.
- Hoffman, John P. and Alan S. Miller. 1998. "A latent Variable Analysis of General Strain Theory." *Journal of Quantitative Criminology* 14: 83-110.
- Hoffman, John P. and S. Susan Su. 1997. "The Conditional Effects of Stress on Delinquency and Drug Use: A Strain Theory Assessment of Sex Differences." *Journal of Research in Crime and Delinquency* 34: 46-78.
- Jackson, James S. 1991. "Methodological Approach." In Jackson, J.S. (ed.), Life in Black America. Thousand Oaks, CA: Sage Publications, pp 13-30.
- Jang, Sung Joon and Byron R. Johnson. 2000. "Strain, Negative Emotions, and Deviance among African Americans: A Test of General Strain Theory." Presented paper at the American Society of Criminology. San Francisco, California.
- Kessler, Ronald C. and Jane D. McLeod. 1984. "Sex Differences in Vulnerability to Undesirable Life Events." *American Sociological Review* 49: 620-631.
- LaFreniere, Peter J. and Jean E. Dumas. 1996. "Social Competence and Behavior Evaluation in Children ages 3 to 6 years: The Short Form (SCBE-30)." *Psychological Assessment* 8: 369-377.
- Lengua, Liliana J. and Elizabeth A. Stromshack. 2000. "Gender, gender roles and personality: Gender differences in the prediction of coping and psychological symptoms." *Sex Roles* 43: 787-820.
- Mazerolle, Paul. 1998. "Gender, General Strain, and Delinquency: An Empirical Examination." *Justice Quarterly* 15:65-91.
- Mirowsky, John and Catherine Ross. 1989. Social Causes of Psychological Distress. New York: Aldine de Gruyter.
- Mirowsky, John and Catherine Ross. 1995. "Sex Differences in Distress: Real or Artifact?" *American Sociological Review* 60: 449-468.

- Moore, Gwen. 1990. "Structural Determinants of Men's and Women's Personal Networks." *American Sociological Review* 55: 726-735.
- Nolen-Hoeksema, Susan, Larson, Judith, and Carla Grayson. 1999. "Explaining the Gender Difference in Depressive Symptoms." *Journal of Personality and Social Psychology* 77: 1061-1072.
- Paternoster, Raymond and Paul Mazerolle. 1994. "General Strain Theory and Delinquency: A Replication and Extension." *Journal of Research in Crime and Delinquency* 31: 235-263.
- Ritter, Christian, Hobfoll, Stevan E., Lavin, Justin, Cameron, Rebecca P., and Hulsizer, Michael R. 2000. "Stress, Psychosocial Resources, and Depressive Symptomatology During Pregnancy in Low-Income, Inner-City Women." *Health Psychology* 19: 576-585.
- Stark, Rodney. 1996. "Religion as Context: Hellfire and Delinquency One More Time." *Sociology of Religion* 57: 163-173.
- Stevenson, Howard C., Reed, Jocelyn, Bodison, Preston, and Bishop, Angela. 1997. "Racism Stress Management: Racial Social Beliefs and the Experience of Depression and Anger in African American Youth." *Youth and Society* 29: 197-222.
- Slavin, Lesley A. and Karie Rainer. 1990. "Gender Differences in Emotional Support and Depressive Symptoms Among Adolescents: A Prospective Analysis." *American Journal of Community Psychology* 18: 407-21.
- Thoits, Peggy A. 1982. "Conceptual, Methodological, and Theoretical Problems in Studying Social Support as a Buffer Against Life Stress." *Journal of Health and Social Behavior* 23: 145-159.
- Turner, H. A. 1994. "Gender and Social Support: Taking the Bad with the Good?" *Sex Roles* 30: 521-541.
- Vaux, Alan. 1988. Social Support: Theory, Research, and Intervention. New York: Praeger Publishers.
- Walén, Heather R. and Margie E. Lachman. 2000. "Social Support and Strain from Partner, Family, and Friends: Costs and Benefits for Men and Women in Adulthood." *Journal of Social and Personal Relationships* 17: 5-30.

APPENDIX: VARIABLES

STRAIN

Q. I am going to read a list of problems which may have happened to you during the past month or so. Over the past month have you had

...

- ... health problems?
- ... money problems?
- ... job problems?
- ... problems with people outside your family?
- ... you or your family been the victim of a crime?
- ... problems with police?
- ... problems with your love life?
- ... you or your family been treated badly because of your race?

A. 1 = Yes; 0 = No

NEGATIVE EMOTIONS

Depression/
Anxiety

Q. During that time, how often did you ...

- ... feel lonely?
- ... feel like you just couldn't get going?
- ... feel depressed?
- ... feel jumpy or jittery
- ... cry easily or have crying spells?
- ... feel like not eating or have a poor appetite?
- ... have restless sleep or trouble getting to sleep?
- ... lose your temper?
- ... get angrier then you were willing to admit?
- ... boil inside, but did not show it?

Anger

A. 5 = very often; 4 = fairly often; 3 = not too often; 2 = hardly never; 1 = never.

SOCIAL SUPPORT

Q. How many people in your family would help you out if you needed help?

A. 0 = none; 2 = one to two; 3 = three to four; 4 = five to seven; 5 = eight or more.

Q. How many of your friends would help you out if you needed help?

A. Code = number (0-7); 8 = eight or more

INTERPERSONAL AGGRESSION

Q. During that time, how often did you fight or argue with other people?

A. 1 = never; 2 = hardly never; 3 = not too often; 4 = fairly often; 5 = very often

VITA

Jason Alan Lyons was born in Elyria, Ohio on December 4th, 1973. He graduated from Elyria High School in 1992 and obtained his Bachelor of Arts degree in psychology and sociology from Case Western Reserve University in 1997. Jason enrolled in the graduate program at Louisiana State University in the fall semester of 1999 and is scheduled to graduate in the summer semester of 2002. He has currently been accepted to the doctoral program at the University of Miami and will attend there in the fall semester of 2002. Jason's interests lie in the social-psychological theories of crime, and his primary focus has been on general strain theory.