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## Specifying the Dynamic Relationships of General Strain, Coping, and Young Adult Crime

Jennifer L. Huck  
*Carroll University*

Daniel R. Lee  
*Indiana University of Pennsylvania*

Kendra N. Bowen  
*Tarleton State University*

Jason D. Spraitz  
*University of Wisconsin-Eau Claire*

James H. Bowers, Jr.  
*Saginaw Valley State University*

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**Abstract:** *General strain theory has been tested critically, but the development of the theory has lagged because tests of the full model are rare, and the integration and specification of conditioning variables that affect crime and deviance are not clear. This test of general strain theory used a young adult sample (n=679) of university students to complete a comprehensive analysis of the main tenets of general strain theory with the specific inclusion of conditioning variables such as self-esteem, self-efficacy, and delinquent peers, and expansion of the traditional measures of affective states, coping strategies, and types of deviant and criminal behaviors. General support for the theory was confirmed. The results show that perceptions of success and fairness, a more traditional measure of strain, are not related to crime and deviance, but the more subjective measure of stress, consistent with general strain theory, does have a relationship with crime and deviance. Implications based on these findings are presented.*

**Keywords:** coping; crime; delinquency; general strain; negative affect; stress

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### INTRODUCTION

For nearly two decades, Agnew's (1992) general strain theory of crime and delinquency has generated much research and identified the need to examine critically and specify the personal, social, and psychological aspects of life related to individual criminal behavior. Agnew's

theory offered extensions to the domain of strain theories by embracing traditions of the theory that centered upon an individual's appreciation for achieving or expecting to achieve personal goals, while expanding the sources of strain to include the removal or threatened removal of positively valued stimuli and the introduction of negatively valued stimuli. Agnew presented these strain sources as

precursors to negative emotions that became a necessary intermediate status before leading a strained individual to delinquent or criminal behaviors. Individuals who experienced these negative emotions, however, might be able to disengage from a criminal trajectory if they were capable of evoking positive coping mechanisms, which might be cognitive, emotional, or behavioral (Agnew 2001; Brezina 1996; Broidy 2001). General strain theory proposes that strain, especially when combined with negative emotions such as anger and negative coping such as fighting, will lead to criminal behaviors. Generally, this model of how strain is connected to delinquency and crime is dynamic and identifies multiple testable propositions that relate to the individual human nature of behaviors.

The connection between strain and deviant or criminal behaviors has been empirically examined, and moderate support exists (see Akers and Sellers 2009; Kubrin, Stuckey and Krohn 2009), with several investigations confirming a relationship between negative emotions and strain (e.g., Brezina 1996; Broidy 2001; Mazerolle and Piquero 1997). Despite the vast literature, the specification of strain, and its connection to a negative affect, is incomplete and additional specification of causal pathways is needed (Kubrin, Stuckey and Krohn 2009). The validity of this causal relationship seems to be accepted, but instead of taking it for granted, it is important to continue examining general strain theory and to identify its ability to explain a range of crimes and criminals. Many tests of general strain theory tested its ability to explain adolescent delinquency (Agnew and Brezina 1997; Agnew, et al. 2002; Aseltine, Gore, and Gordon 2000; Baron 2007; Brezina 1996; Brezina 2010; Hoffman and Cerbone 1999; Hoffman and Miller 1998; Hoffman and Su 1997; Mazerolle, et al. 2000; Mazerolle and Maahs 2000; Paternoster and Mazerolle 1994; Piquero and Sealock 2004), but examinations of other populations exist, including juvenile offenders (Piquero and Sealock 2000), university-aged adults (Ganem 2010; Mazerolle and Piquero 1997; Mazerolle, et al. 2000), adults (Tittle, Broidy, and Gertz 2008), African American adults (Jang and Johnson 2003; Jang 2007), and South Korean youth (Moon, Blurton, and McCluskey 2008; Moon, et al. 2009; Morash and Moon 2007). While general strain appears to be applicable to various types of individuals, the broad range of negative emotions and legitimate coping strategies that can influence criminal behavior must be specified further.

Few studies of general strain theory, however, provide a comprehensive examination of the complete model developed in Agnew's (1992) presentation of the theory. By conducting full tests of general strain theory, the conceptual framework can be identified more securely and any weaknesses made more apparent. This research examines the nature of general strain theory and is focused on confirming the full theoretical model through the measurement of general strains, affective states, and the

range of criminal and deviant behaviors susceptible to both. The research presented here identifies sources of strain that might be unique to a young adult population and applies these to a wide array of behaviors that include social deviance, minor crime, multiple examples of illicit drug use, and serious violent crimes. First, a brief review of strain research is presented with a justification for specific elaborations of the theory. This is followed by an explanation of the research strategy and results. A discussion of the results is presented with expectations for continued research about general strain.

## **RESEARCH ABOUT GENERAL STRAIN THEORY**

General strain theory argues that criminal and deviant behavior is connected to the various strains and stress experienced throughout one's life (Agnew 1992). The theory posits that those most likely to engage in crime are individuals who have negative affective states and cope negatively in response to accumulated stressors; criminal activity is their means of dealing with the stress of life. This section highlights some of the more recent and original research dedicated to the construction of general strain theory. This literature review is not meant to be a comprehensive historical presentation of studies about general strain theory; rather it is a means to develop the variables and constructs important to this current examination of general strain theory. The articles selected are key representations of the important variables and constructs to consider when modeling general strain theory, with special focus upon the conditioning variables.<sup>1</sup>

Agnew and White (1992) completed the original empirical test of general strain theory through cross-sectional and longitudinal analyses of adolescent delinquency, but it was not a test of the complete model. Strain was measured only by the presence of negative stimuli and removal of positive stimuli. Control variables of social control, differential association, self-efficacy, and demographics were included in the modeling strategy, but the model did not contain negative affective states or forms of coping with strain other than the dependent variables of delinquency and drug use. Agnew and White established that when controlling for differential association and social control measures, strain was related significantly to general delinquency and drug use. More variation in delinquency was explained in the model when self-efficacy and delinquent peers were included, but there was no significant effect upon drug use. Agnew and White (1992) reasoned that lower levels of self-efficacy might increase anger responses to strainful events; thus, anger should be related stronger to general delinquency, especially with the inclusion of violence, than to drug use. One problem with this early test was the large temporal gap between the measures of strain and delinquency; it is likely that the

relationship between strain and delinquency is more immediate.

Hoffman and colleagues (Hoffman and Cerbone 1999; Hoffman and Miller 1998) have examined partial models of general strain theory with data from the Family Health Study to determine the specification of how conditioning variables such as self-esteem, self-efficacy, social control, and delinquent peers condition the impact of strain (i.e., negative life events) upon delinquency. Hoffman and Miller (1998) tested general strain theory through a latent variable structural equation model and found that self-efficacy and delinquent peers conditioned the impact of strain to delinquency. Negative life events were related significantly to delinquency only when delinquent peers were included in the model. In addition, higher levels of self-efficacy lowered future delinquency, but self-esteem was not a significant predictor. Hoffman and Cerbone (1999) supported general strain theory by finding that negative life events were related significantly and directly to a composite scale of delinquency, but conditioning variables including self-esteem and self-efficacy were not related and did not influence the relationship between strain and delinquency. These examinations by Hoffman and colleagues demonstrate the importance of including conditioning variables to create more complete models of general strain theory that have the ability to clarify the complex nature of strain and deviance.

The identification of how negative affective states specifically connect to the process of strain leading to delinquency and crime also has been examined. Aseltine, Gore, and Gordon (2000) studied negative affective states (i.e., anger and anxiety) as a contributing factor between strain and delinquency while controlling for self-efficacy, social control, and delinquent peers with a three wave panel study of high school youth. Negative affect was found to complete the connection between strain and aggressive delinquency (e.g., damage to property, physical fights), but not to non-aggressive delinquency (e.g., running away, shoplifting) or frequency of marijuana use. Using the Youth in Transition data, Brezina (2010) studied the role anger and chronic anger has in developing aggressive responses. Although not directly connected to criminal behavior, Brezina suggested individuals who are angered easily and often tend to devalue non-aggressive responses to strainful situations, which could lead to higher rates of delinquency and criminal behaviors. Brezina also stated similarly to Agnew (1992) that individuals who have strainful situations but do not have the opportunity or want to engage in deviant/criminal behaviors will choose to other actions. Hence, not only is affective states and coping important to the creation of behavior but also the desire to engage in specific behavior.

Mazerolle and his colleagues (Mazerolle and Maahs 2000; Mazerolle et al. 2000) researched the connection between sources of strain, conditioning variables, and delinquency using National Youth Survey data. Mazerolle

and Maahs (2000) found that increased levels of adolescent risk, as measured by delinquent peers, moral beliefs, and low self-control, strengthened the path of strain to a composite measure of delinquency. Mazerolle et al. (2000) investigated the mediating and conditioning effects of anger and other variables. When anger was added to models, sources of strain remained significant to violence and illicit drug use but not with measures of school deviance. When anger was examined as a conditioning effect to strain, it was not significantly related to any dependent variable. Delinquent peers were a significant conditioning effect for violence and drug use, but social control was only significant as a conditioning effect for drug use. These studies supported the importance of including anger as well as other conditioning variables in strain models, as these more inclusive models more accurately depict the causal processes that lead to distinct forms of delinquency and criminality.

In a rare test of the full model of general strain theory, Broidy (2001) utilized cross-sectional, survey data of undergraduate university students, which supported the basic tenets of general strain theory. She included various measures of negative affective states (e.g., depression, anger, withdrawal), the three sources of strain, and various legitimate coping mechanisms (i.e., cognitive, behavioral, and emotional). Conditioning variables were added to the model to control for respondent demographics, self-esteem, family dynamics, membership and participation in school activities, deviant peers, and deviant opportunities. Multiple sources of strain was associated with anger and other negative emotions, and these strains and negative emotions were associated with the use of legitimate coping mechanisms and the commission of deviant and delinquent acts. Overall, support for the theory was established and promoted the need to specify complete theoretical models. Recent research has made advances, but most general strain research lacks the assessment of complete models.

Tittle, Broidy, and Gertz (2008) conducted an examination of an adult population with projected criminal actions that supported various factors of the theory, but this was not a test of the full model. Respondents provided their predicted reactions to situations that were created to evoke strainful experiences with possible criminal reactions. Results demonstrated that enduring unpleasant experiences and not achieving goals significantly predicted projected offending, but loss of valuable stimuli was not significantly associated. Results also suggested that strain significantly increases negative emotions. In further questioning of how emotions relate to behaviors, Ganem (2010) explored undergraduate students responses to vignettes designed to create strain and negative emotions. Ganem's research concluded that different types of strain lead to different emotions, which could result in different types of criminal behavior. These studies promote that complete assessments of general strain must include a growing range of emotional constructs.

These prior studies suggest that the connection between strain and crime is conditional and not simply dependent upon strain and its interaction with other emotions. To specify this connection, Moon and colleagues (2009) examined longitudinal work with Korean youth to understand how differing strains connect to different types of affective states. Following the work of Piquero and Sealock (2000), which examined situationally-based emotions, Moon and colleagues (2009) demonstrated the need to understand strain and the emotional responses and coping strategies within the situational context. Emotional traits were significantly related to crime and deviance, however, situational cues helped to develop the mediating effects of what causes crime. For instance, it is not simply strain plus anger that causes crime but the conditioning variables of family and the individual that demonstrate the propensity to engage in particular behaviors. This suggests that individuals, and perhaps unique populations, experience strain and arrive at crime and delinquency differently.

General strain research, to be as accurate as possible, must ensure that the variables and measurements of strain, coping, and affective states match the population and sample being examined (Agnew 2001). Considering that “[t]he college transition is often a stressful and demanding period, during which many students confront new personal challenges and learn to cope with multiple demands” (Srivastava, 2009, p. 884; *see also* Cantor, et al. 1987), strain research that makes use of young adult samples drawn from university student populations must develop strategies to identify the subjective experiences of the research participants. Some research has done this. For instance, crime among university students has been related to anger (Capowich, Mazerolle, and Piquero 2001), purging, as an act of deviance, has been connected to anger and depression among young women (Sharp, et al. 2001), and offending has been explained by depression in university women and men (Hoffman and Su 1998; Ostrowsky and Messner 2005). Research by Moon, Hwang, and McCluskey (2011) depicted stress measured by negative teacher perceptions and by not achieving academic goals as a determining factor of bullying among college students. Among adolescents and young adults up to age 21, traditional bullying (Hay and Meldrum 2010; Hay, Meldrum, and Mann 2010) and cyberbullying (Hay, Meldrum and Mann 2010; Hinduja and Patchin 2007) induced strain that led to outward aggression, delinquency, and crime.

In addition, substance abuse and poor peer relationships has been a means to cope with strain and has acted as a corollary to deviance/crime; research has supported that this perhaps is most common to young adults as well as adolescents who have not developed other means to manage life. To illustrate, Ford and Schroeder (2008) determined a pathway from strain to depression and depression to the non-medical use of prescription

stimulants by college students. Slocum (2010) saw a pattern where adolescents and young adults engaged in substance abuse to deal with short-term and long-term stress. Further, Jang and Rhodes (2012) suggested that strain was interrelated to crime and drug use while Bichler and Tibbetts (2003) found that binge drinking was associated with cheating. With respect to negative peer relationships, Larson and Sweeten (2012) concluded that ending relationships was correlated to a multitude of antisocial behaviors as well as substance use, whereas Higgins and colleagues (2011) perceived that high levels of peer rejection leads to crime and deviance.

Hence, connections between strain and emotions are complex in nature and vary across samples so that specific types of strain must be analyzed as suggested by Agnew (2001); however, some of these past tests included school-aged adolescents and not young adult university students. Thus, the conclusions drawn about general strain theory might not befit university-aged young adults. Young adults still might be developing their emotional and coping skills in response to the various types of stress and strain that is encountered while becoming a responsible adult. This area of interest is important to understand within the context of general strain theory.

In their review of general strain research, Kubrin, Stuckey, and Krohn (2009) have suggested that much of the general strain research has been isolated to specific parts of the theory and that additional general strain research must clarify the unique relationships that might exist between various sources of strain, diverse negative emotions, and other situational or personal conditions. Tests of a complete general strain model are necessary to advance this identification process. These tests of the full model must include personal and subjective assessments of strain and emotionality, must pay particular attention to the mediating effects that factors like anger and frustration have upon deviance and crime, and demonstrate connection to various types of deviance specific to the population and sample examined.

## **PRESENT INVESTIGATION**

This investigation about general strain specifies the critically important constructs of how strain connects to deviance and crime in young adults by specifying the unique connections of various types of strain to coping strategies, and affective states; this provides three hypotheses to be tested. General strain theory recognizes three main types of strain that may lead to negative emotions (e.g., anger); related to this, the first hypothesis is that negative emotions result from the failure to reach a positively valued goal, the removal of positive stimuli, and the presentation of negative stimuli. The second hypothesis is that emotions, whether negative or positive, are connected to the use of coping mechanisms, and these coping mechanisms could be positive (e.g., attending

religious services) or negative (e.g., drinking in excess). According to general strain theory, individuals who develop negative emotions and fail to employ positive coping strategies are more likely to engage in deviant and criminal behaviors, or in reverse, those who develop positive emotions and lack negative emotions are more likely to engage in positive coping strategies and less likely to engage in deviance/criminality. Subsequently, the final hypothesis is that individuals who report negative emotions and engage in negative coping strategies will report engaging in deviant and criminal behaviors, but the use of positive coping strategies is related negatively to crime and deviant behaviors. In relation to this, those who report positive emotions and positive coping should be the least likely to report deviant/criminal reactions. The specification of negative coping mechanisms as distinct from positive coping mechanisms is unique, but it allows for the testing of coping strategies that might be common within young adult populations. Tests of these hypotheses are reported below.

## Methodology

This study offers an examination of the full tenants of general strain theory. The model and methodology were developed using the literature discussed above by selecting and altering variable measurements as needed. It was necessary to include all sources of strain, negative and positive affective states, negative and positive coping strategies, a wide scale of criminality (i.e., actions included behaviors such as skipping class, underage drinking, illegally downloading materials from computers, drug use, sexual and physical assaults, and theft) and contextual variables (e.g., self-esteem, peer deviance, and family structure) that are important to young adults in a university. Positive affective states were added to this research to determine if connections to crime and deviance exist beyond negative emotions as past research has not addressed positive emotions. Another extension offered by this research is the measurement of each respondent's opportunity and desire to participate in deviant and criminal behaviors (Agnew 1992; Brezina 2010). These modifications were completed to identify more precisely the relationship between strain, negative emotions, and deviant and criminal behaviors as necessitated by Agnew's (1992) original framing of the theory.

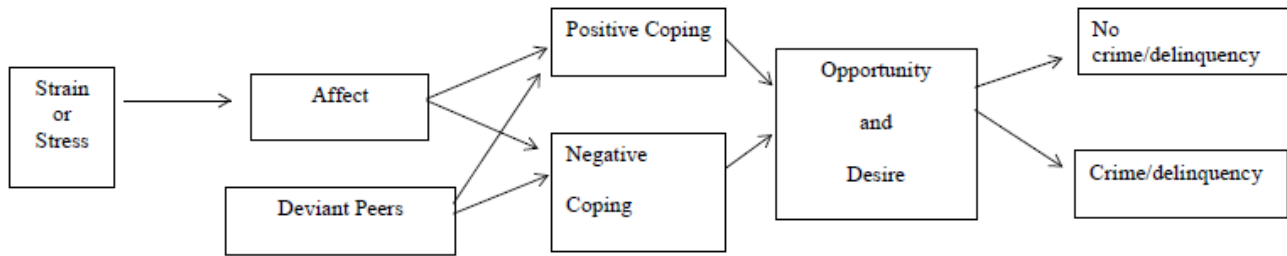
The survey was administered to a non-random, convenience sample of undergraduate university students attending classes offered by the Department of Criminology at a medium-sized university (with approximately 14,000 students) located in the northeast region of the United States. The Department of Criminology is one of the largest departments on its campus with more than 900 undergraduate majors and minors. The survey was completed during the early weeks of the spring 2009 semester in any class where the

professor or instructor of record granted permission. Some students were in more than one of the sampled classes, but students in participating classes were instructed to complete the survey only once. Across all sampled classes, there were 1,253 enrolled students, but due to absences and controlling for students enrolled in multiple courses, only 703 surveys were administered from which 679 surveys were completed providing a response rate of 95.6 percent. The sample demographics were comparable to the university population ensuring generalizability of the findings to the entire student body; generalizations to other populations should be done with some caution.

## Measurement of Variables

The study included variables to identify and test the full model of the theory as proposed by Agnew (1992) and to reflect the complex nature of general strain theory. A broad range of sources of strain were measured, and the survey included items that measured other subjective experiences related to the theory (e.g., negative and positive affective states, legitimate and illegitimate coping, peer deviance, deviant opportunity and desire, respondent deviance, and appropriate respondent demographics and conditioning variables). Each of these constructs is explained in detail, including operational definitions and measurement strategies. Appendix A presents the actual text of survey items that are not explained easily in this section. The model of general strain theory used for this article is displayed in Figure 1.

**Strain.** According to general strain theory, strain measurements must include the failure to achieve a positively valued goal, the removal of positive stimuli, and the addition of negative stimuli. Agnew (1992) also argued that the perceived fairness about unattained goals aids in the determination of whether strain leads to delinquency. With respect to failure to achieve positively valued goals, respondents reported their perception of success and perception of fairness (i.e., not fair, somewhat fair, fair, and very fair) in connection to five goals (i.e., academic, career, family/social, physical health/athletic, and financial) over the previous 12 months. Other research that has tested general strain (e.g., Agnew and White 1992; Broidy 2001) measured goal achievements over extended periods of time, but it is likely that among young adults, the failure to achieve goals is related more immediately to strain and that over long periods of time (i.e., several years) the experienced strain is diminished and/or disregarded. For instance, Moon, Blurton, and McCluskey (2008) examined the complex conceptualization of strain by determining if the behavioral response (e.g., crime, emotions, or coping) to strain depended upon the source of strain such as academic or family, whether the strain experienced was chronic or acute, and if the individual believed the stress was fair and just. For this reason, strain was measured in various means as if the strain was fair.

**Figure 1: Full General Strain Model as Tested in this Study.**

Respondents indicated their perceptions of success and fairness on four-point scales with higher values indicating greater perceived success and fairness; both scales have a possible range of 0 to 15.

The removal of positive stimuli and addition of negative stimuli was modeled from Broidy's (2001:34) stressful events scale; in the present analyses, this measurement is associated with the construct labeled stress. To measure this type of strain, an 18-item scale was created that identified experience with a range of stressful events. Respondents were asked to write in whole numbers the amount of times these events occurred over the past 12 months. This strategy was believed to be an improvement over past research, because it measured the degree and extent of strain-inducing events as opposed to a simple identification of their presence or absence. Care was taken to develop strain measures that encompass the typical undergraduate university students' experiences as discussed in the literature review, as strain measures should be developed to match the sample and population of interest (Agnew 2001; Moon, Blurton, and McClusky 2008). Responses were coded to control for extremely large and outlying values entered by respondents and placed into categories (i.e., 0 = never, 1 = once, 2 = two or three times, 3 = four or more times). When respondents used text responses (i.e., a lot, a few times) these were considered as missing. The possible range for this scale is 0 to 54.

**Negative and Positive Affective States.** Respondents' affective states were measured with the reported frequency of experiencing specific emotions when unable to reach specific goals and when bad things happened. Goals were defined as internal wants or desires specific to the individual respondent, such as obtaining a good grade in a class, losing weight when wanting to, or being hired at a desired job. Bad things happening were specified as external circumstances or experiences such as being the subject of rumors, experiencing a death in the family, or being fired from a job.

Respondents were directed to consider two distinct life moments of (1) when goals were not achieved and (2) when bad things happened in connection to feeling 16

associated negative emotions (i.e., alone, angry, cheated, cranky, depressed, disappointed, frustrated, guilty, insecure, overwhelmed, resentful, scared, stressed, upset, worried, and worthless). These 16 negative emotion items were coded as 0-4 (i.e., never, rarely, sometimes, often, and always). Considering blocked goals and the experience of bad things happening, the presence of negative emotions was measured with a summated scale of 15 emotions across the two experiences with the scale having a possible range of 0 to 124. Anger was separated to be consistent with prior research that concluded anger is the strongest negative emotion linked to criminality and deviance (Brezina 1996; Broidy 2001; Mazerolle and Piquero 1997; Moon et al. 2009).

In addition, the experience of three positive emotions (i.e., accepting, content, and hopeful) was measured to control for respondents who had a more positive disposition in connection to stressful events. Respondents selected whether they responded with positive emotions never, rarely, sometimes, often, or always when goals were blocked or bad things happened. Experiencing positive emotions was reverse-coded to create a summated scale reflecting the absence of positive emotions; positive affective states then reflects the absence of positive emotions as the coded values assume negative affect leading to increased criminality. This scale has a possible range of 0 to 24.

Three composite scores were created for each respondent: anger, other negative emotions, and positive emotions. These were developed from the single items of goals not achieved and bad things happening. Hence, anger is a combined score of participants' responses about whether anger was felt when goals were not achieved and when bad things happened. This is the same for negative emotions and positive emotions. Although this type of general measurement adds limitations to the research by not linking specific sources of strain to specific outcomes, when measuring and modeling the whole of general strain theory, adjustments must be made to ensure completion of the survey and ability to gather usable data. The items, however, included enough specificity for respondents to

determine the distinct qualities between things happening to them or things over which they have control.

**Coping Strategies.** General strain theory predicts that coping strategies vary and are important mediators between negative emotions and subsequent behaviors. These coping strategies can include cognitive, emotional, and behavioral mechanisms, and these acts and actions can be considered qualitatively as positive or negative. The use of these strategies is expected to vary across distinct populations. For instance, adults are anticipated to be better equipped at developing and using positive coping strategies, but younger individuals might be more restricted in their ability to identify and implement effective coping strategies. More specifically, adults might be better at removing themselves (i.e., physically, emotionally or cognitively) from sources of strain; yet, adolescents and young adults might lack the psychological or social development that could make this happen. Additionally, adults legally are capable of using soft drugs, such as alcohol, but adolescents and young adults who engage in the same coping strategy would be considered delinquent or criminal. To reflect this possibility, and in recognition of the nature and context of the sample being surveyed, three items were added to Broidy's (2001) measures to better link coping mechanisms to the lives of young adults attending a university (i.e., drinking alcohol to excess, improperly using prescription or over-the-counter medication, and using illegal drugs).

Respondents were asked to report how often they engaged in specific coping strategies when unable to reach a goal or when bad things happened. This was measured on a five-point ordinal scale (i.e., never, rarely, sometimes, often, always) with the measurement focused on negative coping; it is presumed that negative coping will have a positive relationship to criminality and deviance. A factor analysis suggested data did not fit the theoretical cognitive, behavioral, and emotional coping dimensions. Factor analysis first was completed with no rotation and setting groups based upon eigenvalues above 1. Factor analysis and estimated Cronbach's alpha coefficients demonstrated that there were two distinct groups for coping strategies but not three. The dimensions seemed to be separated across positive ( $\alpha = .756$ ) and negative ( $\alpha = .768$ ) coping strategies. Positive coping items were reverse coded to develop a scale that depicts the absence of positive coping strategies (with a possible range of 0 to 80) and negative coping items were combined into a scale (with a possible range of 0 to 48) that reflects the presence of negative coping strategies; as such, each construct is anticipated to have a positive relationship with crime and deviance.

**Deviant/Criminal Opportunities and Desires.** As mentioned above, past research did not directly measure opportunities and interest in engaging in criminal behaviors, and this can be considered a limitation. Prior strain literature has suggested that along with negative emotions, opportunity is likely to exacerbate the link

between strain and deviant/criminal outcomes (Agnew 1992). Desire has been added to opportunity as it is possible that students have unlimited opportunities to engage in some of the deviant or less serious behaviors (e.g., to skip class) but may not always have the desire to complete the task. Respondents were asked to provide information concerning how often they had the opportunity and desire to engage in 27 deviant and criminal behaviors over the past 12 months; this frequency was measured on a five-point ordinal scale coded as 0-4 (i.e., never, rarely, sometimes, often, always) for each of the 27 behaviors. This scale has a possible range of 0 to 108 with a Cronbach's alpha of .859.

**Deviant/Criminal Participation by Friends.** In addition, a self-reported participation of the respondent's friends involved with deviant or criminal activity was included. A scale was created using the same 28 items as the deviant/criminal outcomes. Respondents were asked to report their perception of the proportion (i.e., none, few, some, most, all) of their friends who engaged in the same range of deviant and criminal behaviors reported above. This scale has a possible range of 0 to 112 and a Cronbach's alpha of .920. To some degree, this measure considers the rival contribution derived from a social learning perspective, yet this measure also can act as a conditioning variable of criminal and deviant behavior or as a source of strain dependent upon a respondent's susceptibility to peer pressures (Aseltine, Gore, and Gordon 2000; Broidy 2001; Brezina 2010; Hoffman and Cerbone 1999; Hoffman and Miller 1998; Hoffman and Su 1997; Mazerolle and Maahs 2000; Paternoster and Mazerolle 1994).

**Control and Conditioning Variables.** Several survey items were included as measures of control variables. Data were collected about respondent demographics including sex (i.e., female = 0, male = 1), race/ethnicity (i.e., non-white = 0, white = 1), age (i.e., measured in whole years), employment status (i.e., full-time = 1, part-time = 0.5, unemployed = 0), GPA (i.e., categorical groupings based upon 4.0 scale), school activities (i.e., no participation = 0, participation = 1), religiosity (i.e., attend religious services never = 0, rarely = 1, sometimes = 2, or often = 3) and family's economic status (i.e., working/lower class = 1, middle class = 2, upper class = 3). The friends in life construct was measured by a single dichotomous item (i.e., yes/no) indicating that the respondent had friends who were currently and actively involved in their life. The friends in area construct was measured by a single item that asked respondents to identify the proportion (i.e., none, some, most, all) of friends who lived in the area of their current residence (i.e., college town). These two variables assessed the connection of the respondent to their friends, as past theoretical research has demonstrated it is not solely whether friends have been involved with crime and delinquency, but also the intensity of the relationship and the possibility that the connection will aggravate or

mitigate strainful experiences (Boman and Gibson 2011; Brauer 2009; Higgins, Piquero, and Piquero 2011; Laub and Sampson 2003).

In addition, three scales were created to measure family dynamics, low self-esteem, and low self-efficacy. Family dynamics was a scale composed of six items with dichotomous responses of yes/no that measured the respondent's connectedness to their mother and father currently and while growing up. The scale ranged from 0 to 6, with higher values representing more connectedness or attachment to the family; the Cronbach's alpha was .740. Low self-esteem (i.e., the respondents feeling of self-worth) was measured with the Rosenberg (1965) self-esteem scale that has a range of 10 to 40 with higher values representing decreased levels of self-esteem with the expectation that low self-esteem has a positive relationship with criminality/deviance. Cronbach's alpha for the self-esteem scale was .877. Self-efficacy was measured as prior research indicated a connection between self-efficacy (i.e., belief in one's ability to control or master their own life's direction) and the influence of strain on delinquency and crime (Agnew and White 1992; Aseltine, Gore, and Gordon 2000; Hoffman and Cerbone 1999; Hoffman and Miller 1998; Jang 2007; Jang and Johnson 2003). The self-efficacy scale ( $\alpha = .766$ ) was obtained from Jang and Johnson (2003), and has a range of 8 to 32 with higher values indicating lower self-efficacy, due to the assumption that those with lower self-efficacy would engage in more deviant/criminal behavior creating a positive relationship between the two variables.

***Deviant/Criminal Outcomes.*** Deviance and crime were measured by asking respondents to indicate the number of times they engaged in one of 28 behaviors over the past 12 months. The range of behaviors was developed by considering prior research as a foundation, but contemporary criminal behaviors (e.g., illegally downloading media and illegal access to electronic files) and other deviant behaviors expected to be found among undergraduate university students (e.g., engaging in unprotected sex) provide additional improvements and breadth to the range of behaviors. The items were transformed into a five-point scale, to control for outliers, that reflects the number of times the respondent engaged in each specific activity (i.e., 0 = never, 1 = once, 2 = twice, 3 = three, and 4 = four or more). When entering the data, text responses (e.g., a lot, always) were entered as missing data and multi-value ranges (e.g., 5 to 9) were entered as the average of the range's upper and lower limits.

All deviant and criminal survey items were placed into the factor analysis to see the dimensions through an unrotated equation with separation based upon eigenvalues greater than 1 through SPSS. The 13 items of the first dimension were used to create a composite criminality/deviance scale as these items were statistically connected and developed a stronger construct than using all items (see Broidy 2001). The items that composed the dependent

variable were sold marijuana or other illegal drugs, injured someone without a weapon, destroyed property, distorted the truth, had unprotected sex, used prescription medication, took over-the-counter medication, used marijuana, used crack/cocaine, used other illegal drugs, drank in excess to the point of blackout or pass out, bullied, and engaged in hazing activities ( $\alpha = .785$ ). The possible range of this criminality/deviance scale is 0 to 112 with higher values indicating a greater frequency and diversity of criminal and deviant experience. A composite scale has the advantage of representing general deviance and criminality inclusive of various types of crime that can appropriately determine the connection of strain to various types of behaviors.

### **Concerns with Causality**

One limitation of this and similar research is that the data collection occurred at one time and absolute causality cannot be determined. Attempts were made to minimize this limitation from the outset by designing the survey instrument to measure the sources of strain, the affective states of respondents, the use of coping strategies, and the participation in criminal or deviant behaviors within a contextual framework. That is, instead of asking respondents to report past or present states of mind or participation in behaviors, survey items were worded to place respondents in a temporal context consistent to theoretical propositions; this allowed the survey to address situational reactions to stress, which may be more important to general strain theory than simply knowing if the respondent is an angry individual (Agnew 1992; Mazerolle, et al. 2000). For example, respondents reported their emotional status when in the presence of strain, and respondents were asked to report what they do to relieve stress (i.e., negative or positive coping strategies). Although, this does not allow for a complete causal interpretation that might be available if stressors, strains, and behaviors were measured longitudinally, it does allow for some discussion of a likely causal process.

With respect to other concerns of causality, the survey instrument used broad-based items from strain literature and other theories to ensure the ability to capture the social framework of why university students engage in deviant and/or criminal behavior. As with all social science research, it is implausible to include all variables affecting individual decision-making, but all variables were created with directness and specificity to develop necessary constructs for a full test of general strain theory. In addition, variables were tested for collinearity and diagnostic statistics were within acceptable values. Subsequently, survey creation and analysis of the data was an engaging process developed within appropriate constraints and concerns for causality.



## Results

To be in line with previous research in examining the full model of general strain theory, distinct aspects of general strain processes were examined through a series of separate ordinary least squares (OLS) regressions with a step-wise process. With this strategy, certain variables are presented as a dependent variable in one model and an independent variable in other models. Prior to estimating the OLS regression models, descriptive statistics were examined and the potential for collinearity was assessed across all variables. OLS does have some concerns with

prediction; however, strong explanations of the connection between variables can lead to assumptions about the predictive power of the independent variables to the dependent variable (Lewis-Beck 1980).

The sample of undergraduate university students was predominately male, white, and unemployed with an average age between 20 and 21 years; the sample matched the demographics of the classes, department, and university. For this reason, it can be generalized to the university and perhaps to other mid-sized universities that have students with similar demographics and backgrounds. Other descriptive statistics are reported in Table 1.

**Table 1. Descriptive Statistics of the 679 Respondents.**

Variable		Alpha	Mean	S.D.	Observed Minimum	Observed Maximum
Strain	Success	.704	8.07	2.80	0	15
	Fairness	.700	9.30	2.74	0	15
	Stress	.646	9.55	5.14	0	28
Affective States	Anger	.628	5.01	1.505	0	8
	Absence of Positive Emotions	.775	15.44	4.29	2	24
	Presence of Negative Emotions	.940	50.24	18.061	7	108
Coping Strategies	Absence of Positive Coping	.756	57.81	8.299	24	76
	Presence of Negative Coping	.768	12.51	6.154	0	33
Conditioning	Friend Criminality	.920	19.86	12.508	0	79
	Opportunity/Desire	.859	12.38	9.102	0	63
	Family Dynamics	.740	5.21	1.307	0	6
	Friends in Area	-	1.30	.703	0	3
	Friends in Life	-	.96	.189	0	1
	Low Self Esteem	.877	18.09	5.067	10	34
	Low Self Efficacy	.766	18.55	3.668	8	30
Demographics	Religiosity	-	1.13	.977	0	3
	Sex	-	.64	.480	0	1
	Age	-	20.62	2.624	18	54
	Race	-	.81	.390	0	1
	Employment Status	-	.28	.291	0	1
	Economic Status	-	1.88	.490	1	3
	GPA	-	6.43	1.229	1	8
School Activities	-	.41	.492	0	1	
Dependent Variable	Criminality/Deviance	.785	7.41	8.055	0	43

Data collected: 2009

### Assessing Affective States and Emotions

The first hypothesis suggested that a negative affect result from the failure to reach a positive goal, the removal of positive stimuli, and the presentation of negative stimuli. To test this hypothesis, the three dependent variables of anger, negative emotions other than anger, and the absence of positive emotions were examined in separate multivariate regression models; Table 2 displays the results of this analysis.

Perceptions of success and fairness were not statistically significant in any of the models estimating relationships to affective states, although success did approach significance at the .1 level. Despite these results, some support for the first hypothesis is presented with the identification of the relationship between stress and each measure of respondents' emotional status. Stress had a significant relationship with each measure of negative affect. Stress was related positively to the constructs of

**Table 2. Ordinary Least Squares Regression with Anger, Negative Emotions, and Positive Emotions as Dependent Variables.**

Independent Variables		Absence of Positive Emotions (n = 594)		Presence of Anger (n = 598)		Presence of Other Negative Emotions (n = 573)	
		b	Beta (S.E.)	b	Beta (S.E.)	b	Beta (S.E.)
Strain	Success	-.027	-.018(.079)	.048	.089 (.027)	.174	.027 (.291)
	Fairness	-.098	-.063 (.078)	-.031	-.055 (.027)	-.374	-.056 (.283)
	Stress	-.079	-.096 (.040)	.053**	.181 (.014)	.724**	.208 (.146)
Conditioning	Family Dynamics	.049	.015 (.153)	-.019	-.016 (.052)	-.522	-.037 (.554)
	Friends in Area	.151	.024 (.253)	-.033	-.015 (.086)	-.501	-.019 (.940)
	Friends in Life	-1.868*	-.082 (.942)	-.310	-.039 (.317)	-2.912	-.031 (3.307)
	Low Self Esteem	.076	.090 (.042)	.064**	.216 (.014)	1.525**	.424 (.153)
	Low Self Efficacy	.105	.091 (.054)	.019	.048 (.019)	.143	.029 (.200)
	Religiosity	-.309	-.070 (.185)	-.00001	.000 (.063)	.071	.004 (.671)
	Demographics	Sex	-.826*	-.092 (.379)	.219	.069 (.130)	-5.184**
	Age	-.132	-.081 (.068)	-.032	-.056 (.023)	.202	.030 (.243)
	Race	-.264	-.024 (.524)	-.019	-.005 (.180)	-3.309	-.068 (1.945)
	Employment Status	1.100	.074 (.611)	.192	.037 (.210)	.217	.003 (2.238)
	Economic Status	-.287	-.033 (.371)	-.095	-.031 (.127)	1.308	.036 (1.358)
	GPA	.052	.015 (.160)	.105	.087 (.055)	1.696**	.117 (.582)
	School Activities	-.179	-.021 (.363)	.081	.026 (.124)	.661	.018 (1.323)
	Constant		19.198 (2.167)		3.267 (.891)		9.484 (9.520)
	R <sup>2</sup>		.068		.120		.341
	F		2.652***		4.958***		17.988***

\*p < .05. \*\*p < .01.

Data collected: 2009

anger and other negative emotions, but stress had a negative relationship with the absence of positive emotions. The relationship between stress and the absence of positive emotions suggests that those who experienced stressful events in their lives reported more experience with the positive emotions of being accepting, content, and hopeful. It is possible that the sources of stress experienced by university students are anticipated to some extent, and their presence is then more easily rationalized as typical of the pursuit of higher education.

With respect to the conditioning variables, the estimated effect for low self-esteem was positive and significant across all three dependent variables, but having friends present in life, religiosity, and low self-efficacy approached significance only in relation to the absence of positive emotions. Respondents who had lower self-esteem reported more anger, negative emotions, and an absence of positive emotions. Respondents who had lower levels of self-efficacy had a greater absence of positive emotions. Respondents with friends in their lives and a greater sense

of religiosity had less absence of positive emotions. Sex is related significantly to the combined emotional statuses but not to anger itself. These relationships vary as male respondents experience less absence of positive emotions, more anger, and less presence of other negative emotions. Respondents self-reported GPA is associated with a greater presence of negative emotions other than anger.

Overall, there is support for the first hypothesis, but the support varies. Anger was important to all measures of strain, whereas other negative emotions and positive emotions only had significant connections to stress. This is not outside of the theory's prediction, as Agnew (1992) suggested that stress measured through the removal of positive stimuli and the addition of negative stimuli will be more influential to emotionality and deviance and that anger will most likely result from blocked goals. However, Agnew (1992) also predicted that unjust situations will most likely result in negative emotionality and anger, but fairness was not a significant predictor in these models.

**Table 3. Ordinary Least Squares Regression with Coping Strategies, Positive Coping, and Negative Coping as Dependent Variables.**

Independent Variables		Absence of Positive Coping (n = 549)		Presence of Negative Coping (n = 555)	
		b	Beta (S.E.)	b	Beta (S.E.)
Strain	Success	-.493**	-.171 (.134)	-.139	-.064 (.090)
	Fairness	-.118	-.040 (.130)	.111	.050 (.089)
	Stress	-.038	-.024 (.069)	.095*	.081 (.047)
Affective States	Anger	-.075	-.014 (.240)	.164	.040 (.162)
	Presence of Negative Emotion	-.068**	-.152 (.023)	.148**	.438 (.016)
	Absence of Positive Emotion	.448**	.238 (.072)	-.093	-.065 (.049)
Conditioning	Family Dynamics	.616*	.097 (.253)	-.086	-.018 (.171)
	Friends in Area	.646	.054 (.432)	-.004	.000 (.292)
	Friends in Life	-1.032	-.024 (1.562)	1.600	.051 (1.039)
	Low Self Esteem	.194**	.120 (.077)	.326**	.269 (.052)
	Low Self Efficacy	.039	.018 (.091)	.001	.000 (.062)
Demographics	Religiosity	-3.077**	-.365 (.311)	-.473**	-.075 (.209)
	Sex	1.952**	.114 (.657)	1.327**	.103 (.443)
	Age	-.205	-.069 (.111)	.115	.051 (.075)
	Race	-.804	-.037 (.892)	-.213	-.013 (.608)
	Employment Status	.697	.025 (1.029)	-.187	-.009 (.695)
	Economic Status	-1.093	-.066 (.630)	1.111**	.090 (.423)
	GPA	-.211	-.032 (.269)	-.218	-.045 (.181)
	School Activities	-1.576**	-.095 (.607)	.293	.024 (.410)
Constant		63.858 (4.588)		-5.224 (3.109)	
<i>R</i> <sup>2</sup>		.334		.458	
<i>F</i>		13.988***		23.775***	

\**p* < .05. \*\**p* < .01.

Data collected: 2009

### Assessing the Use of Coping Strategies

The second hypothesis stated that individuals whom report negative emotions as a result of stressful experiences will engage in various coping strategies and when positive affective states are not present negative coping is more likely to occur. To test this hypothesis three OLS regression models were estimated that included all of the independent variables included in the previous models, and the absence of positive emotions, presence of anger, and presence of other negative emotions were included as independent variables; coping strategies were included as the dependent variable in each model. Table 3 displays the results of this analysis.

The dependent variable was intended to be a composite measure of all coping strategies, but due to theoretical underpinnings and results from a factor analysis, the composite measure was disaggregated into separate measures of positive and negative coping responses. This separation allowed for the specification of how various strains and other social constructs distinctly affect divergent coping strategies. It also allowed for

determining how types of coping connected to stress, strain, and, ultimately, deviance and crime.

Anger was not related significantly to either positive or negative coping strategies. Negative emotions were linked negatively to the absence of positive coping and were connected positively to negative coping. Positive emotions had a positive relationship to positive coping and a negative relationship to negative coping. Thus, respondents were more likely to report strategies of positive coping when they responded with positive emotions to strainful events, and respondents were more likely to use negative coping strategies when they responded to strainful events with negative emotions. These findings suggest that strain induces the use of coping strategies, but these strategies are dependent upon specific emotional statuses and perhaps the type of individual who is responding.

The conditioning variables of sex, self-esteem, and religiosity were related significantly to both positive and negative coping, but not having friends in their life and low self-efficacy were not connected significantly. Males reported more experience with both types of coping, and

respondents with higher levels of economic status were connected significantly to less absence of positive coping and greater presence of negative coping strategies. Respondents with lower levels of self-esteem engaged in more negative coping than positive coping. Respondents actively involved in their religion were associated with less use of negative coping strategies and less absence of positive coping mechanisms. Additionally, respondents who reported responding to strainful events with positive coping strategies had higher levels of participation in school activities and stronger family dynamics.

Overall, these results support the second hypothesis. Those who experienced negative emotions were more likely to engage in negative coping, but anger was not a significant predictor of any type of coping. These results demonstrate the need to specify and examine more

carefully the effect that conditioning variables might have with the use of coping strategies in the presence of strain and the isolation of anger from other emotional states.

**Assessing General Strain, Crime, and Deviance**

The final hypothesis stated that individuals who report negative emotions and engage in negative coping strategies engage in deviant and criminal behaviors more frequently. For this hypothesis, regression models were estimated with the composite criminality/deviance scale as the dependent variable, and with coping strategies, emotions, and other social constructs as the independent variables. Table 4 displays the results of this analysis.

**Table 4. Ordinary Least Squares Regression with Criminality/Deviance as the Dependent Variable.**

Independent Variables		Criminality/Deviance (n = 481)	
		<i>b</i>	Beta (S.E.)
Strain	Success	-.097	-.033 (.106)
	Fairness	.119	.040 (.101)
	Stress	.117*	.075 (.056)
Affective States	Anger	.330	.060 (.189)
	Presence of Negative Emotion	-.038*	-.085 (.019)
	Absence of Positive Emotion	-.022	-.011 (.058)
Coping Strategies	Presence of Negative Coping	.312**	.229 (.055)
	Absence of Positive Coping	.055	.055 (.034)
Conditioning	Friend Criminality	.136**	.208 (.026)
	Opportunity/Desire	.494**	.514 (.039)
	Family Dynamics	.058	.009 (.205)
	Friends in Area	.045	.004 (.342)
	Friends in Life	.229	.005 (1.263)
	Low Self Esteem	-.229**	-.140 (.063)
	Low Self Efficacy	-.137	-.063 (.072)
	Religiosity	.094	.011 (.265)
Demographics	Sex	-.436	-.026 (.536)
	Age	.086	.028 (.091)
	Race	1.948**	.087 (.717)
	Employment Status	.273	.010 (.818)
	Economic Status	.201	.012 (.514)
	GPA	-.419*	-.066 (.206)
	School Activities	.234	.014 (.483)
	Constant		-4.145 (4.184)
<i>R</i> <sup>2</sup>			.648
<i>F</i>			36.633***

\*\**p* < .05. \*\*\**p* < .01.

Data collected: 2009

Controlling for all other variables, stress, and negative coping strategies are related positively to criminal/deviant activity, but perceptions of success and fairness were not significantly related nor was anger. Anger did approach statistical significance of .10, but this lower level threshold was not enough to support the contentions of anger being connected to criminality. Several conditioning variables were related in the anticipated directions (e.g., negative emotions, negative coping, low self-esteem, and low self-efficacy), and as other literature has suggested (e.g., Agnew 1992; Broidy 2001), those respondents who have the opportunity and desire to engage in crime report a greater frequency of doing so. Similarly, those with friends who are deviant reported engaging in more crime and deviant behaviors. Respondents who reported a higher GPA reported less crime and deviance.

When considering the hypothesized relationship that the general strain variables have with crime and deviance, the results are supportive. In general, these results confirm the expectations that general strain theory proposes and extends the breadth of general strain research by including a greater diversity of strain sources, coping strategies, and criminal and deviant behaviors. Collectively, these results demonstrate the need to specify fully the complex relationships between the strain variables and conditioning variables as predictors of criminal and deviant behaviors, as it is likely that the extensions offered here are not exhaustive of the possible measurements that can be identified as being a part of the general strain constructs.

## CONCLUSION AND DISCUSSION

This research attempted to accomplish several purposes. One purpose was to design an assessment of the complete model of Agnew's (1992) general strain theory. The research presented here expanded the breadth of coverage applicable to general strain. These extensions included the identification of additional measures of strain, affect, and coping as well as conditioning variables. These are critical constructs of general strain theory, and adding a wider scope of coverage to these constructs, it improves the quality and generalizability of the theory. Another contribution from this research is its confirmation that the theory is applicable to populations of young adults who are pursuing higher education; that is, the theory is relevant to explaining criminal and deviant behaviors of university students, through stressors, strains, and reactions that might be unique to this population.

One implication from this research is that the conceptual contributions from Agnew's (1992) general strain theory might be more critically important and relevant than the constructs related to earlier strain theories derived from Merton's (1938) propositions. Specifically, this research found that various measures of general strain constructs (e.g., reactions to stressful events, dimensions of negative emotionality, and coping strategies) are related to

each other and connected to crime and deviance. The measures included in this analysis aligned most closely with Merton's theory (e.g., perceptions of success and fairness) were not found to be related statistically significant to the individually oriented emotional constructs or to crime and deviance. This might indicate that the importance of general strain theory in explaining antisocial behaviors is based upon the unique stressors that are subjective to diverse populations and that orientation towards goals, at least in some populations, is not important to the causation of crime or deviance.

A separate implication from this research is based upon the inclusion of a unique measure of respondents' opportunity and desire to engage in crime. Agnew (1992) suggested that, despite the presence of strain, individuals will not engage in crime or deviance if it is not an available behavioral option or if when available not desired (see also, Brezina 2010). In this research, general strain variables were related significantly to criminal and deviant behaviors, but the measure of opportunity and desire to engage in criminal and deviant behaviors had the greatest magnitude of all variables related to reports of actual participation. Thus, this research provides support for Agnew's statement that desire and opportunity aid in the determination of whether strain leads to criminal and deviant behavior. This is something to be highlighted in future research to understand the complex nature of general strain theory.

In addition, this research supports that negative affective states and the presence of negative coping conditions the relationship between stress and criminal and deviant behavior; although, anger was not an important predictor as past research has suggested. When participants experienced stress and responded to that stress with negative emotions and/or behavior they were more likely to engage in criminal and deviant behaviors. Likewise, when respondents stated they had more positive reactions to stress, criminal and deviant behaviors decreased. When explored with conditioning variables, this research suggests that individuals who have negative reactions to stress, have friends who engage in criminal/deviant behaviors, have lower GPAs, and have lower self-esteem and self-efficacy are most likely to engage in criminal and deviant behavior; however, the interactive effects of conditioning variables could be examined further through the use of multiplicative terms instead of addition to regression equations, as done here. This study strongly supports that the combination of strain, affective states, and coping strategies is not enough to understand the movement into criminal or deviant behavior; instead, variables that help us understand more about the person's life, connections, and responses provide stronger explanations and have higher predictive powers when coupled with general strain theory.

While generalizing about the cognitive processes outside of this sample is tenuous, the findings do suggest

that colleges and universities should pay more attention to their students who might utilize negative behaviors more frequently. This research has identified that engaging in negative behaviors (e.g., dwelling on problems, withdrawing, and abusing substances) in reaction to stressful experiences is associated with negative emotionality and lower self-esteem. Negative emotionality also was related to increases in crime and deviance. Colleges and universities likely are aware of the challenges and stressors that higher education and the transition from adolescence to adulthood bring to their students' lives. Yet, given the tendency for this sample to use positive coping mechanisms minimally, it might be prudent to increase the availability and recognition of programs that improve students' positive emotional status and commitment to education. Lee and Cohen (2008) found that high schools with a more positive school atmosphere and increased recognition of student achievements had fewer subsequent attendance problems and less subsequent substance abuse among their students, but how this might occur among older students is unclear and should be explored by future research.

Although this research has confirmed some of what is known about general strain theory and has offered some additional constructs and conceptualizations to the identification and specification of the theory, it is not without limitations. This research was framed around the specification of how general strain operates within a young adult population, but it is likely that the findings presented here cannot be generalized to other distinct and similarly unique populations. This is acknowledged as a limitation, but the findings suggest that additional studies of general strain theory should guide the specification and measurements of strain to be tailored as identifications of the stressors relative to the unique population being studied. It is likely that other populations, such as pre-adolescents, adolescents, or adults, will have different sources of stress and different cognitive and affective responses. In addition, as discussed above, interpreting causality is difficult to do without reservations with this type of research; however, strong correlations have been demonstrated that support general strain theory.

Future research should examine specific stressors and strains in connection to emotions and coping; by making these individual items it will aid understanding what specific strains, emotions, and coping strategies lead to criminality and deviance. It also should continue to examine coping strategies along the lines of positive and negative strategies and away from the emotional, cognitive, and behavioral typologies typically used in strain research. This study did not support the use of the more traditional delineations of coping processes; instead, clearer results were found with the simpler constructs of positive and negative coping. Future studies could address whether respondents view specific coping strategies as positive or negative to ensure appropriate interpretations

are being made. In addition, anger was not connected significantly to coping strategies but stress was connected to negative coping and deviance/criminality. This might suggest stress is a stronger link to poor coping strategies; people who experience stress with negative emotions may need to identify unique and specific coping strategies to contain negative behavior. If future research confirms this finding, results would be useful to offender rehabilitation programs. These programs could maximize their effect on recidivism by breaking the use of negative coping by developing strategies to work through the stresses of life that might lead to a desire to commit crime. To some extent, cognitive skills therapies work towards this end and have been successful in reducing recidivism (see Cullen and Gendreau 2000; Petersilia 2003).

Collectively, the results presented here contribute meaningfully to the body of literature that is focused upon confirming general strain theory. Similarly, these results suggest opportunities for further exploration of the theory, and in particular, the identification of the unique stressors and responses to strain across distinct populations. While general strain theory is now decades old, it is not an old theory, and there are many dynamic qualities associated with the theory that have yet to be identified.

#### Note

<sup>1</sup> Complete reviews of general strain theory literature can be found in theoretical compilations such as those by Akers and Sellers (2009), Kubrin, Stucky, and Krohn (2009), Lilly, Cullen, and Ball (2010), and Bernard, Snipes, and Gerould (2011).

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## **APPENDIX: SURVEY ITEMS**

### **Sources of Stress (Positive and Negative Stimuli)**

1. Getting a bad grade on an assignment, paper, or test
2. Failing an exam
3. Getting a bad final grade in a class
4. Ending a relationship with a close friend
5. Ending a relationship with an intimate partner
6. Having someone that you care about die
7. Losing weight without wanting to
8. Gaining weight without wanting to
9. Having or being responsible for an unplanned pregnancy
10. Suffering from a serious or prolonged illness or injury
11. Having money problems (e.g., not being able to pay rent or bills)
12. Being unable to get a job
13. Being fired from a job
14. Getting in a car accident
15. Being bullied or harassed verbally
16. Being harassed or abused physically
17. Being harassed or abused sexually
18. Having something (e.g., books, I-pod, money) stolen from you

### **Coping Strategies**

#### Negative

1. Tend to dwell on it even more
2. Am likely to withdraw and spend most of my time alone until I feel better
3. Try to avoid dealing with the problem
4. Improperly use prescription or over-the-counter medication \*
5. Drink alcohol \*
6. Use illegal drugs \*

Positive (Absence of)

1. *Ignore it*
2. *Know it is not my own fault*
3. *Try to figure out where I went wrong so that I can change the outcome*
4. *Exercise to try to make myself feel better*
5. *Talk to friends or family to try to make myself feel better*
6. *Write in a journal to try to make myself feel better*
7. *Pray or meditate*
8. *Attend religious services*
9. *Attend support groups or peer counseling*
10. *Seek counseling or therapy to make myself feel better*

\* These items are additions to this study and not in Broidy's (2001) original test.

*Italicized* items are positive coping strategies that were reverse coded.

**Deviant/Criminal Behaviors for Respondents, Friends, and Opportunity/Desire**

1. Skipped class
2. Stolen something worth \$50 or less
3. Stolen something worth more than \$50
4. Sold marijuana or other illegal drugs
5. Intentionally injured someone without a weapon
6. Intentionally injured someone with a weapon (e.g., stick, club, knife, gun)
7. Purposely destroyed property that did not belong to you
8. Used force or a weapon to get money or things from another person
9. Distorted the truth to get something you could not otherwise obtain
10. Illegally downloaded media (e.g. music, movies)
11. Hacked into personal information (e.g., social network page, email)
12. Hacked into corporate or government information (e.g., banking, credit cards)
13. Had unprotected sex with someone you were not in a relationship with

14. Sexually harassed another person verbally
15. Inappropriately touched someone in a sexual manner
16. Had sexual intercourse with another person without their full permission
17. Used prescription medication without a prescription or in excess of what was prescribed
18. Taken over-the-counter medication without need or in excess of the proper dosage
19. Used inhalants (huffing) such as glue or spray paint
20. Used marijuana
21. Used heroin
22. Used crack or cocaine
23. Used methamphetamines (meth, ice, crank)
24. Used other types of illegal drugs that are not listed above
25. Drank to the extent that you have blacked out or passed out
26. Been picked up by the police \*
27. Bullied, intimidated, or harassed another person
28. Engaged in hazing activities

\*This item is not included in the desire and opportunity items

**About the authors:**

**Jennifer L. Huck** is an assistant professor of criminal justice and sociology at Carroll University. Her research interests include criminological theory, social world of court processing and decision-making, and evaluations of criminal justice policies and programs.

**Daniel R. Lee** is a professor of criminology at Indiana University of Pennsylvania. His research interests include tests of criminological theory and evaluations of criminal justice policies and programs.

**Kendra N. Bowen** is an assistant professor at Tarleton State University. Her research interests include theory, violence and victimization, and policy.

**Jason D. Spraitz** is an assistant professor of criminal justice at the University of Wisconsin—Eau Claire. His research interests include the impact of parenting style on delinquent and criminal behavior.

**James Bowers** is an assistant professor of criminal justice at Saginaw Valley State University. His research interests include the techniques of neutralization of sex offenders and the relationship between urban growth boundaries and crime.

**Contact Information:** Jennifer L. Huck, Carroll University, 100 N. East Avenue, Waukesha, WI 53186; Phone: (262) 524-7169; Fax: (262) 574-2608; Email: [jhuck@carrollu.edu](mailto:jhuck@carrollu.edu).

Daniel R. Lee, Indiana University of Pennsylvania, 411 North Walk, Wilson Hall, Indiana PA 15705; Phone: (724) 357-5930; Fax: (724) 357-4018; Email: [danlee@iup.edu](mailto:danlee@iup.edu).

Kendra N. Bowen, Tarleton State University, Box T-0665, Stephenville, TX 76402; Phone: (254) 968-9279; Fax: (254) 968-9288; Email: [KBOWEN@tarleton.edu](mailto:KBOWEN@tarleton.edu).

Jason D. Spraitz, University of Wisconsin-Eau Claire, Department of Political Science, SSS-200F, Eau Claire, WI 54702; Phone: (715) 836-5022; Fax: (715) 836-2944; Email: [SPRAITJD@uwec.edu](mailto:SPRAITJD@uwec.edu).

James Bowers, Saginaw Valley State University, 352 Brown Hall, 7400 Bay Road, University Center, MI 48710; Phone: (989) 964-4156; Fax: (989) 790-7656; Email: [jbowers@svsu.edu](mailto:jbowers@svsu.edu).